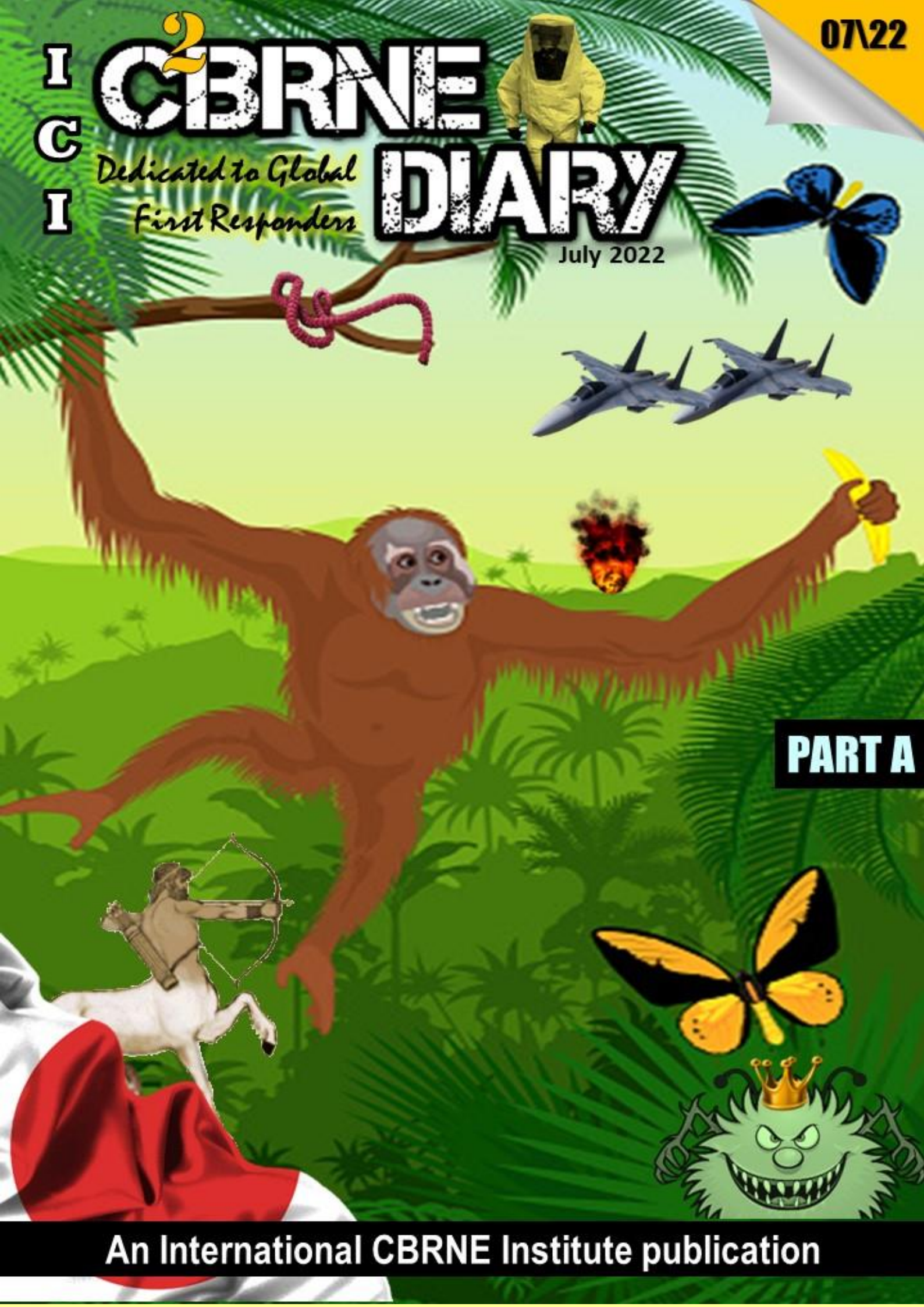


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# 2 CBRNE DIARY

*Dedicated to Global  
First Responders*

July 2022



**PART A**

## C<sup>2</sup>BRNE DIARY– 2022<sup>©</sup>

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# EDITOR'S CORNER





### Editorial

Brig Gen (ret.) Ioannis Galatas, MD, MSc, MC (Army)

Editor-in-Chief  
ICI C<sup>2</sup>BRNE Diary



Dear Colleagues,

Pandemic 1: Year 3 (SARS-CoV-1)

Epidemic → Pandemic 2: Month 3 (MPX)

War: Month 4

Hope level: Close to Zero!

I am thinking of discontinuing the Editorial part of the journal mainly because it is a repetition of that of the previous month: pandemics and war! For example:

#### European war

Everybody knows that the “right” or the “wrong” side of History depends on only one thing: Who the winner is! So far, two main conclusions from the Ukraine-Russia war: (1) It is for sure that some in the West want to see the war from Ukraine spread to other



parts of the world; and (2) some in Moscow and Beijing also want to see a "final settlement of accounts" given a chance concerning Ukraine.

In July, Norway pledged 1 billion euros (\$1.04 billion) to help Ukraine defend itself, support people in need, and for reconstruction in the wake of Russia's invasion. USA offered an additional 820 mil USD in weapons (\$8 bill so far) and the UK 1 billion UKP. Recently Zelensky told NATO leaders the monthly cost of defense for Ukraine was around \$5bn and asked them to pay the bill. NATO by all means is trying to persuade member-states that Russia and China are the enemies of the entire planet and that they have to be prepared and most important of all, be armed to defend Western values and freedom! The latter is translated as “buy our weapons; they are the best!”

It is of notice that Greece is among the largest donors of military aid to Ukraine – can you believe that? Reckless diplomacy from a government trying to please the American master putting in second place the interests of its own country. Neutrality could be a much cleverer option with the least consequences.

### How ethical is proxy war? Is it a war crime to pay others to fight in a conflict for your own gain?

Amid the international havoc ignited by the war in Europe, Turkey decided that it is the right time to promote the “mighty Türkiye” brand by (successfully) blackmailing Sweden and Finland applying for NATO membership in exchange for anti-Kurdish measures and postponement of military technology restrictions/sanctions. In addition, the rhetoric against Greece is reaching very dangerous levels and a bloody incident that might progress into a regional conflict is not speculation anymore. Although Greece favors peace and good neighboring, it would be a good idea to end bullying once and for good – because it can! In addition, Turkey is flirting (supported by Russia) with BRICS; so, there is no need to join the EU or remain in NATO.



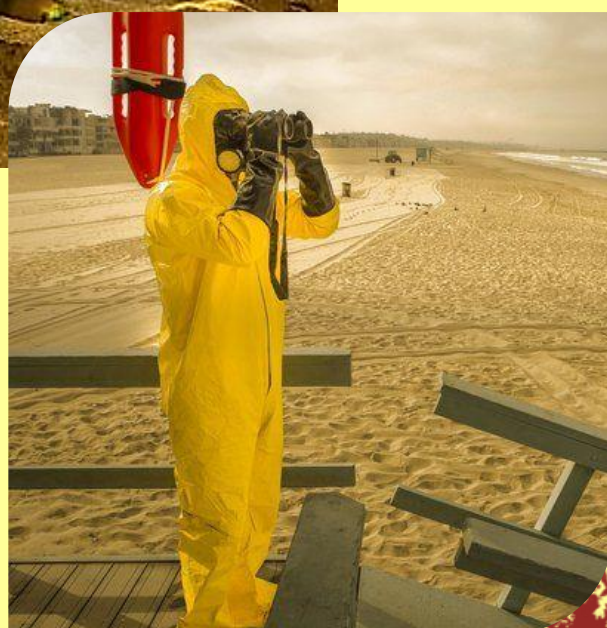
*Pandemics*

A big global debate on the usefulness of the fourth jab without concrete evidence that will do the job or that benefits are overwhelming side effects. Basically, it is a financial debate; the only thing is that now people have understood the game under the table and are resisting vaccination without proof of efficacy. On the other hand, it seems that the pandemic has affected the mindset of the people making them believe that wearing a face mask in crowded places (indoor and outdoor) affects their freedom and rights.

Pandemic #1, made WHO change the definition of a pandemic. Now it is the time for WHO to define the number of smallpox cases required to declare a pandemic – 20,000; 50,000; 100,000, 1 mil? Politics again; this time afraid/hesitant to target the (male) homosexual community and those belonging to the LGBTQ+ community that rule from backstage globally.

Dear colleagues, do not be fooled that we are approaching summertime and we should be relaxed. Certain evil spirits are looking for an opportunity to mess with the lives of people and peace. So, be prepared and invest in training and out-of-the-box thinking. Also, keep in mind, that for summer vacations there is no other place like Greece 😊!

*The Editor-in-Chief*



## NATO vs. BRICS – mine is bigger than yours!



## From economy to outer space: Conclusions of the 14th BRICS Summit

By Paul Antonopoulos

Source: <https://www.weeklyblitz.net/world/from-economy-to-outer-space-conclusions-of-the-14th-brics-summit/>

June 26 – The leaders of Brazil, Russia, India, China and South Africa met on June 23 in the context of the BRICS Summit amid major shifts in the geopolitical and economic order following the Russian military operation in Ukraine and the consequential sanctions from the West. The summit was held in a virtual format for the third consecutive year because of the COVID-19 pandemic and geopolitical tensions that require leaders to be close to home.

As BRICS nations have a combined population of 3.23 billion and a combined GDP of more than \$23 trillion, it offers the most powerful bloc to rival and/or challenge the West's global domination. Such a challenge is of course not in the military field as BRICS is an economic bloc, meaning that the discussions surrounding the war in Ukraine were not about a unified front in support of Moscow, but rather how Western sanctions against Russia necessitate the immediate need to establish an alternative global economic model and order.

"We have discussed the situation in Ukraine and recall our national positions as expressed at the appropriate fora, namely the UNSC [U.N. Security Council] and UNGA [U.N. General Assembly]. We support talks between Russia and Ukraine," [the joint BRICS leaders statement](#) said. "We agree to continue to deepen cooperation on competition amongst BRICS countries and create a fair competition market environment for international economic and trade cooperation."

Addressing the issue of the UN Security Council, the need for "comprehensive reform [...] with a view to making it more representative, effective and efficient, and to increase the representation of the developing countries so that it can adequately respond to global challenges," was reaffirmed.

The permanent members of the UNSC are China, France, Russia, United Kingdom and United States, and thus excludes any country from Latin America or Africa, as well as India despite being the world's



second most populous country, a bigger economy than France, and a military ranked more powerful than France and the UK. In this



way, the UNSC is unbalanced, making reformation all the more important.

The implementation of a sustainable development agenda by 2030 is also present in the text of the final declaration of the XIV BRICS Summit. Leaders from Brazil, Russia, India, China and South Africa emphasized that the international community must attach greater importance to development issues and intensify global partnerships.

The joint statement encourages “financial support and technology transfer to developing countries,” adding that “the breakthroughs in the applications of digital technologies, such as Big Data and Artificial Intelligence (AI) may play an important role towards sustainable development.” To do so, it is necessary to strengthen the participation of the poorest countries and emerging markets “in global decision-making processes and structures and make it better attuned to contemporary realities.”

Particularly highlighted in this proposed process is Africa as it has some of the fastest growing populations and markets in the world. The UN [estimates](#) that over half of the world’s population growth in the next thirty years will be in Africa, followed by Asia with an expected addition of approximately one billion people by 2050. In contrast, fertility rates are currently [below](#) the population replacement level in Europe, a fact for several decades now.

The statement also stressed the importance of conventions against biochemical and chemical terrorism. While it does not directly mention [US biological laboratories in Ukraine](#), the document calls for an “expeditious finalization and adoption of the Comprehensive Convention on International Terrorism within the UN framework and for launching multilateral negotiations on an international convention for the suppression of acts of chemical and biological terrorism.”

“We call for strengthening the system of arms control, disarmament and non-proliferation, including the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BTWC) and the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (CWC), and for preserving their integrity and effectiveness to maintain global stability and international peace and security,” the statement adds.

In addition to this, BRICS leaders expressed again their commitment to a world free of nuclear weapons. In this way, there is a geopolitical element as it also signals to the nuclear armed US, UK and France that BRICS has no intentions of a nuclear war or arms race.

Prevention of an arms race in outer space was also mentioned by BRICS leaders, who stressed “support for ensuring the long-term sustainability of outer space activities and prevention of an arms race in outer space (PAROS) and of its weaponization, including through negotiations to adopt a relevant legally binding multilateral instrument.”



By emphasizing on points of cooperation, greater representation at the most senior level of global governance, and stressing a nuclear-free world and a weapon-free outer space, the 2022 BRICS Summit was more important than ever considering the context of the Ukraine War. With the geopolitical and economic order rapidly changing, by emphasizing greater global balance, developing countries will be more inclined to a change in the global system if they are better represented and developed compared to the current situation. In this way, the results of this BRICS Summit are perhaps the most important in its history.

[Paul Antonopoulos](#) is an independent geopolitical analyst.

**EDITOR'S COMMENT:** A few years ago, Greece had the chance to become a BRICS member but we preferred to "belong to the West"...

## Dozens die trying to cross into Spanish enclave of Melilla

Source: <https://www.bbc.com/news/world-africa-61934163>



June 25 – At least 23 migrants have died and others were hurt on Friday when a huge crowd tried to cross into Spain's North African enclave of Melilla, officials from neighbouring Morocco say.

Reports say some of those who died had fallen from the top of a border fence.

Several security personnel and migrants were admitted to hospital for treatment following clashes early on Friday.

It was the first such attempted mass crossing since Spain and Morocco resumed diplomatic ties in March.

The thaw in relations came after Spain supported Morocco's autonomy plan for the disputed region of Western Sahara.

Spanish officials say several hundred people tried to break through into the enclave after cutting fencing.

Most were forced back but more than 100 got through and were being processed at a reception centre, they added.





**WHY  
ILLEGAL IMMIGRANTS  
AND  
REFUGEES  
DO NOT WORK  
IN THE  
HOSTING COUNTRIES?**



Originally 18 deaths were reported, but officials said on Saturday that five more people had died of their injuries. Melilla and Ceuta, another Spanish enclave, have in recent years become a focal point for mostly sub-Saharan migrants attempting to reach Europe.

**In case you did not know!**

**Melilla** is one of two autonomous cities of Spain, located in North Africa. It lies on the eastern side of the Cape Three Forks, bordering Morocco and facing the Mediterranean Sea. It has an area of 12.3 km<sup>2</sup> (4.7 sq mi). It was part of the Province of Málaga until 14 March 1995, when the Statute of Autonomy of Melilla was passed. Melilla is one of the special member state territories of the European Union. Movements to and from the rest of the EU and Melilla are subject to specific rules, provided for *inter alia* in the Accession Agreement of Spain to the Schengen Convention. As of 2019, Melilla had a population of 86,487. The population is chiefly divided between people of Iberian and Riffian extraction. There is also a small number of Sephardic Jews and Sindhi Hindus. Regarding sociolinguistics, Melilla features a diglossia between the official Spanish (strong language) and Tarifit (weak language). Melilla, like Ceuta and Spain's other territories in Africa, is subject to an irredentist claim by Morocco.

## **Denmark: Government proposes 37-hour work week for migrant women to qualify for social benefits**

Source: [https://ec.europa.eu/migrant-integration/news/denmark-government-proposes-37-hour-work-week-migrant-women-qualify-social-benefits\\_en](https://ec.europa.eu/migrant-integration/news/denmark-government-proposes-37-hour-work-week-migrant-women-qualify-social-benefits_en)

Sept 2021 – The Social Democrat government of Denmark has launched [a proposal](#) for a new reform plan, which aims to increase the size of the country's work force and the percentage of citizens who are self-supporting.

One of the elements in the plan reads: "**37 hours - a new work logic, designed to get more migrant women into the labour market**". This has been met with massive criticism from all sides, a key problem being that the country has previously tried something similar with very limited results. Additionally, the idea goes directly against the results achieved and recommendations made by many publicly funded projects in recent years.

The proposal states:

"The target group is people who have received social benefits during three of the last four years and have not passed an exam in Danish 2, or at least sixth grade. This group consists of 20 000 people. (...) A prerequisite for receiving benefits will be working 37 hours per week in a "useful job" provided by the local job centre (run by the municipalities). **These jobs can be cleaning beaches or forests, or renovation and maintenance work on the municipal institutions.**"



Enjoying the sun at Omonia square, Athens downtown, Greece

Statistics from the government say that **6 out of 10 in this group are not working** (more widely in Denmark, only 3 in 10 women do not work). But, according to the government's own calculations, **only 250 of the defined group of 20 000**

**people will actually be able to find a job through the new initiative.** The extra cost for the new proposal is expected to be 200 million DKK, which is equal to 800 000 per person who finds a job. This clearly illustrates that the main issue is not, after all, to encourage more people to self-support, but rather to send the message that everybody in Denmark is expected to work.

In this particular group, not all have yet earned the right to receive the full social benefits to which those born in Denmark are entitled: **some are receiving benefits amounting to only half of this, which is**



**the amount awarded to newcomers.** These low benefits fall under the official EU poverty limit, which has been criticized by the Danish Institute for Human Rights as being in breach of the Danish constitution. If the new reform plan goes ahead it will cut even these low benefits day by day, if recipients do not carry out the appointed work.

In reality, the proposal is not a new idea. The concept of "**useful jobs**" has been tried before in Denmark, with limited success. Unions are strong in the country, minimum wages are high in comparison with most European countries, and the unemployment rates are low (3.8% in July 2021). Many companies struggle to find employees, and the need for skilled workers within the building and care sectors is rising rapidly. It is predicted that Denmark will be short of thousands of employees over the next ten years.

Finding extra jobs outside the official labour market is difficult for job centres in Denmark. At present, Danish rules already state that in order to receive unemployment benefits a person must be available for the labour market, make a plan for their future and actively apply for vacant jobs. Refugees and other foreigners within the "integration programme", running for the first three years after their arrival, **are already required to be "active" for 37 hours a week through a combination of language classes, internships or other kinds of job training.** However, most municipalities are unable to support new arrivals to meet these criteria today. On average, newcomers are active for 19 hours per week, but for foreigners with a longer stay in the country the number of active hours is, on average, only six. In general, ethnic Danes who are unemployed receive much more attention and help from the job centres than foreign citizens.

**Reactions in the Danish media have been mainly negative** since prime minister Mette Frederiksen presented the proposal. Here are a few examples:

**Mads Bilstrup**, chair of Danish Association of Social Workers, said: "*We know that "useful jobs" do not help people back into the labour market. The ambition should be to do something which works for this group. Finding these kinds of pseudo jobs is very time consuming, as we are not allowed to push real jobs aside.*"

**Mads Lundby**, chief economist in liberal think tank Cepos, said: "*If this activation costs more than 360 euro per year per person, our calculation is that it will be a deficit in the public budgets. The huge activation circus needed for this does not balance the results. In my opinion this will be very, very expensive.*"

**Rasmus Brygger**, founder of the Danish Knowledge Centre on Integration, said: "*The ambition behind the proposal is good. But the focus on useful jobs is wrong, as we know from several major surveys that the main problems for this group to enter the work market are language barriers and competencies.*"

The Danish government has had a special focus on helping more migrant women to be self-supporting for several years. The results from various related studies and projects point in a very different direction from that of the new proposal.

#### The general conclusions are:

- Most migrant women want to work and are happy when they succeed in finding a job;
- Many migrant women have health issues, making it hard for them to work full-time;
- Language barriers and a lack of education and/or work experience make it hard for migrant women to secure employment;
- Individual programmes and personal mentors can overcome many of these barriers.

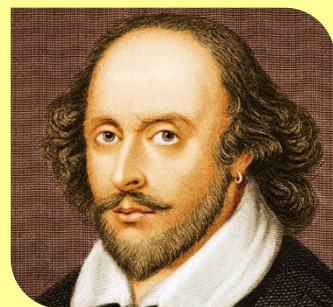
**EDITOR'S COMMENT:** An excellent idea and of course not only for women immigrants. It should be implemented in all EU member states. It is very disturbing to see thousands of people – most of them illegal immigrants, enjoying the sun, spending their benefits without working a single day and this is not a temporary condition. We all know that in certain countries these people live a very good life compared to that of native citizens. In addition, if incomers know that they have to work to get the benefits might give it a second thought and stay in their country. Benefits will keep them quiet but for how long? This is the question we avoid answering!

## 'No Shakespeare' without Islam?

By A.J. Caschetta

Source: <https://www.meforum.org/63343/no-shakespeare-without-islam>

June 26 - Pity the Bard of Avon. William Shakespeare has long been the subject of conspiracy theories, including some emanating from the Muslim world. Libyan dictator Moammar Qaddafi [claimed](#) in 1989 that Shakespeare was an Arab whose real name was "Sheikh Zabir." Turkish



conspiracy theorist Kadir Mısıroğlu [made news](#) in 2016 by claiming that "Shakespeare was not English and his original name is 'Sheikh Pir.' Even more, he was a secret Muslim."

The latest salvo from the grassy knoll of literary criticism came last month from *TRT World* — an Ankara-based Islamist outlet controlled by Turkish strongman Recep Tayyip Erdoğan's Justice and Development Party (AKP) — in an article by Nadia Khan declaring absurdly that "there would have been no Shakespeare were it not for Islam."

Given the source of this far-fetched proclamation (TRT's American branch is [registered](#) as a foreign agent), one might easily dismiss Khan as an unimportant [staff writer](#) for Turkey's propagandist media and conclude that her opinions are on par with those of Qaddafi and Mısıroğlu. Qaddafi's [mental stability](#) has long been suspect, and Mısıroğlu was a fake historian who also [wrote](#) that *Das Kapital* was dictated to Karl Marx by demons. But Khan's article, titled "[The Centrality of the Muslim World to Shakespeare's Work](#)," is based on the writings of a real historian: Matthew Dimmock, a professor of early modern studies and associate dean of research at the University of Sussex (U.K.). Dimmock shoulders much of the blame for the caricature of Shakespeare as beholden to Islam.

Early in Dimmock's career, when he was a lecturer at Sussex, he [wrote](#) cogently about the influence of Islam on English literature in the 15th and 16th centuries. But on December 27, 2015, he took a turn into left field when he [asserted](#) on the Oxford University Press blog that "without Islam there would be no Shakespeare." The facts belie this preposterous statement.

If Islam truly were central to Shakespeare's thought and work, one might expect the word "Islam" to appear somewhere in his oeuvre. It does not. Nor does "Alcoran" (the [spelling in Shakespeare's day](#)), or any other variant of "Koran." In all the plays, there is a single reference to "Mahomet." There are 25 references to "Jesus/Jesu," nine references to "Christ," and 796 references to "God," but no references to "Allah."

If Shakespeare had been greatly or even moderately interested in Islam, one might expect him to have written plays in which Muslims are central characters. He did not. In all of his plays, only a single Muslim ever appears on stage, and he is a minor character. Nor did he set any plays in the Muslim world. *The Comedy of Errors* is set in Ephesus, a Roman city in pre-Islamic Turkey, and *Pericles* is set in the city of Tyre, located in pre-Islamic Lebanon. About half of *Antony and Cleopatra* takes place in pre-Islamic Egypt.

How about cultural influence? Did Shakespeare appropriate his mastery of stagecraft from contemporaneous Muslim playwrights? That's unlikely, since Islamic drama in Shakespeare's lifetime was far less developed than European drama. Islamic drama before the 18th century [consists mostly](#) of puppet and marionette shows and a collection of brief miracle plays. In Turkey, a tradition of [improvisational performance](#) called *Ortaoyunu* dates to the 13th century, but drama as Shakespeare knew it didn't [begin](#) in the Muslim world in earnest until the 19th century. *The Oxford History of Islam* features discussions of Islamic architecture, pottery, painting, sculpture, weaving, mosaic, and calligraphy, but not a word on theater or drama (neither term is even in the index). As one author [puts it](#), "theater in the Arab world" experienced a "difficult birth."

The truth is, Shakespeare wasn't even Islamo-curious.

Dimmock claims to have found "150 references to Islamic motifs in 21 plays" and pays particular attention to "*The Merchant of Venice* and *Othello*, both of which," he claims, "foreground encounters with Islam." From this slim evidence, he concludes that "without Tudor and Jacobean England's rich and complex engagement with Islamic cultures, the plays written by William Shakespeare would be very different, if they existed at all." Pish posh, as Shakespeare would say.

Nowhere in his Oxford blog post does Dimmock explain how he came upon the number 150 or by what criteria the references qualify as "Islamic," so I wrote to him asking for the list. He replied: "In terms of a list, I'm afraid that there isn't one, at least not exactly. When I was a doctoral student I compiled a series of lists and charts for that research — references to Islamic places and ideas in Shakespeare; early modern English plays on that theme; copies of translations of the Qur'an that are still extant — that sort of thing. Most of that material if I still have it is on formats that I can't now retrieve."

A special issue of the journal *Shakespeare* from 2008 titled "[Shakespeare and Islam](#)" offers some hints about the kinds of references Dimmock may have relied upon. Guest editor Mark Hutchings [explains](#) that the journal "conceives of 'Shakespeare and Islam' in its broadest sense . . . 'Islam' is a flag of convenience for our purposes, an umbrella term that takes in not only the Ottoman Empire but also the Persian." In a similar vein, a website called *Sheikhy Notes* has a page on [Islam and Shakespeare](#) that counts references to Arabia and India as Islamic elements. It considers Lady Macbeth's post-murder line "All the perfumes of Arabia will not sweeten this little hand" as an Islamic reference instead of simply an accurate reference to the luxury-goods market in Shakespeare's day.

The only examples of these "150 references" that Dimmock cites consist of decorative items, such as the "Turkish tapestry" in *The Comedy of Errors*, "Turkey cushions bossed with pearl" from *The Taming of the Shrew*, and references to clothing styles such as "Morisco gowns" and "barbarian sleeves." These references suggest that Islamic culture is only peripheral to Shakespeare's world.

Even if we accept as authentic Dimmock's 150 references to things vaguely Islamic, that evidence does not substantiate his claim that "without Islam there would be no Shakespeare." It doesn't even justify



the more modest claim of [Clair Chambers](#), professor of global literature at the University of York, who [wrote](#), "it is indisputable that without contact with the Muslim world, Shakespeare's plays would not be so opulent, spicy, or political."

In fact, even if we accept the number 150, it does not seem all that significant. Consider, by comparison, that in Shakespeare's plays the word "Jew" [appears](#) 167 times. The word "Jerusalem" appears nine times (that's nine times more than it appears in the Koran, by the way). And the three Jewish characters in *The Merchant of Venice* (Shylock, his daughter Jessica, and his friend Tubal) amount to three times the number of Muslim characters in all of Shakespeare's plays. Using Dimmock's logic, there would definitely have been no Shakespeare without Judaism.

The second part of Dimmock's evidence, that *The Merchant of Venice* and *Othello* both "foreground encounters with Islam," is also misleading, beginning with the fact that these are just two of Shakespeare's 37 plays.

The Prince of Morocco, in *The Merchant of Venice* (1596–97), is the one and only Muslim character in all of Shakespeare's plays. In his two brief scenes, he is portrayed as one of many superficial and greedy fools vying for a chance to marry Portia, the rich heiress of Belmont. He is no more a "foreground" character than any of the other failed suitors: the Prince of Aragon, who also fails on stage, and the assortment of aristocrats from Naples, France, Scotland, England, and Germany whose offstage failures we learn about through dialogue between Portia and her maid.

*Othello, the Moor of Venice* (1604) is Shakespeare's one and only play that features Islam in any meaningful way, though again it is in the background. The tight and compact tragedy focuses on the villainous Iago as he manipulates Othello into believing that his faithful wife Desdemona is cheating on him. Nearly every scene in the play is about Iago's Machiavellian plot or Othello's jealousy.

Dimmock also [exaggerates](#) when he argues that "Shakespeare's fame" is tied to the so-called "Turk play," a popular sub-genre of the day prominently featuring Turks or Muslims and set in Muslim lands. Examples of the genre include anonymous plays such as *Solymanidae* (1582), *Mahomet* (1599), and *Muly Molocco* (1599), as well as plays written by Shakespeare's main competitors: Christopher Marlowe's *Tamburlaine, Part 1* (1587) and *Tamburlaine, Part 2* (1588), George Peele's *The Turkish Mahomet and Hirens the Fair Greek* (1588) and *The Battle of Alacazar* (1589), and Robert Greene's *Selimus* (1592).

The problem with this argument is that Shakespeare didn't write any "Turk plays," and Dimmock's efforts to turn *Othello* into one are unsuccessful. If *Othello* is a "Turk play," it must be the only one in which the "Turk" is neither a Turk nor a Muslim.

The text tells us Othello's backstory: When he was seven years old, he was "taken by the insolent foe/And sold to slavery" and became a warrior. At some point thereafter he achieved "redemption" when he was "baptized."

When Othello finds two of his officers fighting, he chides them:

*Are we turned Turks, and to ourselves do that*

*Which heaven hath forbid the Ottomites?*

*For Christian shame, put by this barbarous brawl!*

Not only is the main character not a Muslim, but in fact no Muslims appear on stage. The "Turks" of the play exist exclusively in speeches made by others alluding to an imminent Ottoman invasion. Most of them occur in a single scene in which the Duke of Venice and several senators discuss the impending invasions of Rhodes (which occurred in 1522) and Cyprus, a possession of Venice in the play (as it was from 1489 to 1571). Othello goes into battle against a 30-ship-strong Ottoman naval force heading for Cyprus, but a storm does them in, and, as he announces, "the Turks are drown'd" before the play's midpoint.

Finally, in Dimmock's reading, the term "Moor" is a religious signifier, but in fact Shakespeare uses it only to signify Othello's race. As the great Shakespeare scholar David Bevington [cautioned](#), "Elizabethan usage applied the term 'Moor' to Africans without attempting to distinguish between Arabian and Negroid peoples." Shakespeare's only other "Moor" character is Aaron from *Titus Andronicus* (c. 1590), which, although it is set in pre-Islamic ancient Rome, has not stopped [some](#) from erroneously calling Aaron one of "Shakespeare's Muslim characters."

Nadia Khan interviewed Dimmock on [May 23, 2022](#), for her "Golden Threads" YouTube program. She begins by praising his "really hard-hitting" claim that "without Islam there would be no Shakespeare." He laughs a bit and acknowledges the obvious: that it was made to get people's attention. As Dimmock explained to me, "The 'without Islam' angle came from a blog I was commissioned to write for OUP seven or so years ago, and (as with such pieces) they wanted something that would catch a reader's attention." This, of course, is disingenuous. It's not as though the Oxford editors stuck him with a bad title that didn't reflect his essay.

It's also not as though he has moved beyond these ideas, which are now seven years old. At the 14:56 mark of the "Golden Threads" interview, Khan asks Dimmock outright: "Would you still say though that, like, the Islamic world is pretty core to Shakespeare's work?" He answers in the affirmative.

Why would a reputable British scholar go to such lengths to dissemble about the impact of Islam on Britain's greatest writer?

Dimmock's efforts to ascribe Shakespeare's success to Islam resemble in some ways Martin Bernal's efforts to ascribe ancient Greek civilization to Africa in his book *Black Athena* (1987). With weak



archeological and misleading linguistic evidence, but dedicated to the political goal of promoting "Afrocentrism," Bernal claimed that Hellenism was pilfered from Africa. Mary Lefkowitz thoroughly [refuted him](#) in *Not Out of Africa: How "Afrocentrism" Became an Excuse to Teach Myth as History* (1996), and as one Egyptologist [explained](#), when Bernal "wants a particular conclusion" he manipulates the evidence so that it appears to "fit that conclusion."

Bernal had his moment, but his name is now a symbol of political activism masquerading as scholarship. And, like Bernal, Dimmock exaggerates the influence of non-Western elements (Islam) on the West (Shakespeare) by manipulating and misrepresenting evidence. But to what end? Bernal was frank about his work, [claiming](#) that "the political purpose of *Black Athena* is, of course, to lessen European cultural arrogance." But Dimmock's motives aren't as clear.

Three options come to mind.

The first option, that he really believes "without Islam there would be no Shakespeare," is easily dismissed. Dimmock's earlier work is rational and responsible, and he understands that Islam is incidental to Shakespeare's plays. Otherwise, he would have undertaken a book-length project on the topic.

The second option is that he thinks that he's playing a harmless, Puckish game, getting some attention but not embarrassing himself too much with his over-the-top claims. He knew in 2015, and he knows now, that his hyperbole will bring him attention. He acknowledged to me that he has received "a steady trickle of emails from all over the world asking about the piece." But it's not harmless. The idea of Shakespeare dependent on Islam emboldens and feeds the triumphalism of Islamists from Istanbul to Ipswich. The third option is the most intriguing: Dimmock believes he is rescuing Shakespeare by linking him to Islam.

In the age of wokeness, the entire canon of Western literature is under assault. Some want to diversify it by adding "marginalized" or "underrepresented" authors, while others want to eliminate it altogether. And no author draws more ire from the canon-busters than William Shakespeare. Academia wants to "decentralize" and "decolonize" him. High-school teachers [complain](#) that the plays, with their "toxic masculinity" and "white supremacy," are not relevant to their multicultural students. Even acting companies formerly devoted to Shakespeare's plays are abandoning Shakespeare "in the name of diversity," as [one critic](#) puts it.

William Shakespeare might need rescuing, but he doesn't need diversifying, and he certainly doesn't need Matthew Dimmock or Islam to make him relevant.

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## Cyprus – RFHunter Manpack RF Intelligence in the Field

By SignalGeneriX





## Could this area be the fuse for a new conflict?





## Ukraine war

Source: <https://link.foreignaffairs.com/view/591db3d62ddf9c3c4206091bqtawr.26gm/eb354812>



July 03 – For the next ten weeks, we'll be looking back at pivotal events that took place over the course of the magazine's 100-year history. We'll explore how, in the pages of *Foreign Affairs*, leading thinkers and historical figures discussed and debated global developments as they happened—and how their ideas shaped the world today.

We begin with the precursor to the current war in Ukraine: Russia's 2014 annexation of Crimea and invasion of eastern Ukraine. *Foreign Affairs* writers offered a range of explanations for the incursion, from NATO's eastward enlargement and the United States' and Europe's growing influence in Kyiv to President Vladimir Putin's rash response to domestic political pressures or his aim of "reestablishing Russia as a resurrected great power." They predicted more trouble ahead—including a sharp decline in Russia's relationship with the West and Moscow's continued "pursuit of a Eurasian sphere of influence." All were concerned that the broader conflict would not end with the crisis in Crimea. And on that score, at least, they were correct.

- [Putin's Search for Greatness](#)
- [Managing the New Cold War](#)
- [Why the Ukraine Crisis Is the West's Fault](#)
- [Faulty Powers](#)
- [Russia's Perpetual Geopolitics](#)

## U.S. Generals Have Been Wrong on Ukraine. We Shouldn't Be Shocked

By Daniel Davis

Source: <https://www.19fortyfive.com/2022/07/u-s-generals-have-been-wrong-on-ukraine-we-shouldnt-be-shocked/>

July 02 – [Frederick B. Hodges](#), former commanding general of U.S. Army-Europe, claimed last month that Ukraine's forces would soon slow Russia's advance and, the *New York Times* [reported](#), begin "to roll back its gains by late summer." Hodges said his confidence was based on his belief that "the Ukrainian logistical situation getting better each week while the Russian logistical situation will slowly degrade."

Such claims, however, are in contradiction to observable reality on the battlefield – and continue a disturbing, decades-long trend of poor and misleading advice given by America's top military officers.

Listening over the past four months to what America's retired generals and admirals have said on TV, one would be forgiven for believing that Ukraine is winning its war with Russia, that Putin's troops and leaders are incompetent, and that soon Ukrainian troops will begin rolling the Russians back.

Such belief, however, would be badly misplaced, as substantial evidence indicates virtually the opposite.

### A Rosy Look at the Brutal Battle in Ukraine

Rosy, optimistic – and inaccurate – assessments from U.S. flag officers have unfortunately become the norm over the past few decades. While some current and former generals give excellent and accurate

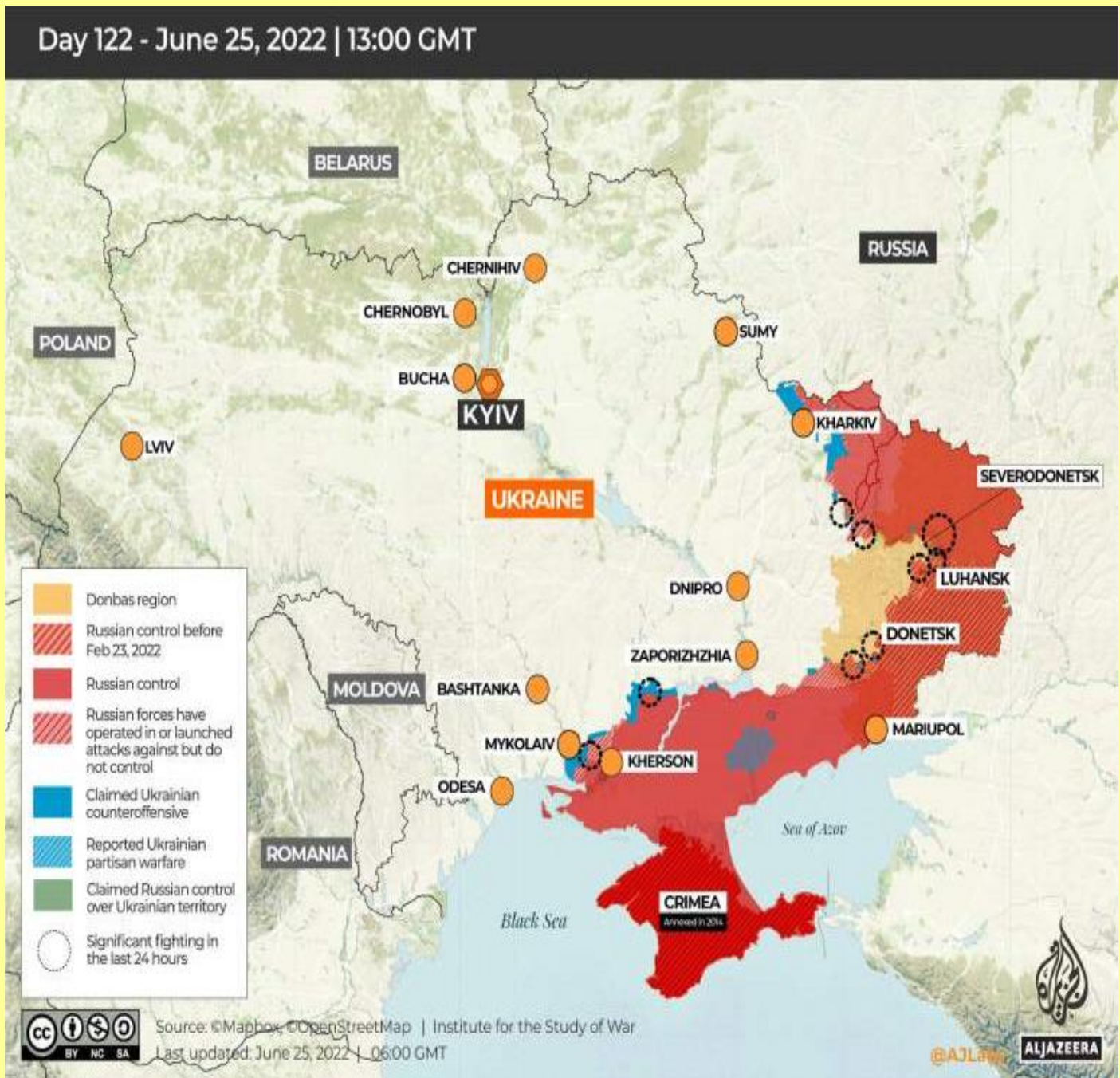




## ICI C<sup>2</sup>BRNE DIARY – July 2022

assessments, there are far too many that don't. The consequence to American policy has often been severe. It is time to reassess how much credibility we should place with American generals and admirals.

As [I have chronicled](#) on these pages, the conditions and military fundamentals clearly evident for years have strongly suggested that Ukraine could not win a war with Russia, and that both Kyiv and Washington should have made different policy choices based on that reality, both before and since Russia's illegal invasion. But as graphically detailed below, active and retired flag officers have continually claimed that – ignoring clear evidence to the contrary – Ukraine has a chance to win the war.



### Encouraging Ukraine to Keep Up the Fight

Such unwarranted assertions have led policymakers and the American public to believe, improperly, that we should continue encouraging Ukraine to maintain its fight against Russia. American official



policy has been to provide Kyiv with substantial armaments to defend itself and overwhelming emotional support.

If the generals were right, if Ukraine were indeed close to winning the war, and if the aid we have offered could tip the scales in Kyiv's favor, then our policy might make sense. But it doesn't. Ukraine [isn't winning](#) the war and isn't even close to parity, much less superiority, to Russian forces.

In my most [recent piece](#) at *19FortyFive*, I detail many of the practical, military reasons Ukraine is [losing the war](#) and is likely to continue losing. In my assessment, if Kyiv continues refusing to seek a negotiated settlement with Russia – something that is understandably repugnant to many Ukrainian citizens and government – they are in danger not merely of sliding into a long-term stalemate, but of outright losing the war.

I do not hesitate to admit that I can't guarantee an outcome in this war. There are too many variables and information I don't have, and do not have access to the secret council of either the Russian or Ukrainian general staff, or that of the western [NATO](#) leaders. A number of things could change the dynamics and trajectory of the war, which are not publicly known. Of course events that have yet to happen could result in major course changes.

But as I have laid out [in detail](#), the current trends and military fundamentals reveal Ukraine is unquestionably losing this war. For the conditions to change dramatically enough to make an eventual Ukrainian military victory possible, as many generals continue to claim, would require a radical shift from today's realities. Beyond mere rhetoric, there is no evidence such a radical shift is forthcoming. It is therefore irresponsible, I argue, to tell the American people that the desired outcome is possible when all evidence screams that it's not – and downright cruel to the Ukrainian Armed Forces and civilian population, to foster a belief that they have a chance.

### Should Washington Change Course?

To have the best chance to protect America's vital national interests and save as many Ukrainian people as possible from being killed, Washington must change course and begin to form policy based on a frank and honest assessment of the combat, economic, and diplomatic realities of this war. It will be hard to get to that rational place, however, unless we first recognize the consistently rosy pictures painted by America's flag officers over the past few decades have been atrocious.

My 21 years of active service in the U.S. Army, including four combat deployments, has put me in a position to personally observe many of the mistakes and bad judgments of both active and retired generals. The cumulative result of their frequently flawed advice has been uniformly bad for our country, resulting in some of the worst military and foreign policy decisions our country has made.

Whether it was routine claims, made over a 20-year period, [of success](#) in the Afghan War when events conclusively proved it was always a [disastrous failure](#), or [perpetual claims](#) of success during and after the 2003 Iraq war – before the Iraqi Security Forces the U.S. trained [melted away](#) at the first contact with the Islamic State – senior American military leaders have consistently misled the American public on the true state of affairs.

Since virtually the beginning of the Ukraine-Russian war, American active and retired generals have consistently claimed that Russian troops were [incompetent](#), that their troops were ill-disciplined, [arrogant](#), [unmotivated](#), and sometimes [rebelled](#) against their leaders and refused to fight. The Russians, many generals claimed, [could not win](#), with Gen. [Hodges claiming](#) that Ukraine would begin rolling back Putin's troops before the end of this summer.

Yet Russia controls more than [20 percent of Ukrainian](#) territory and [continues conquering](#) urban center after urban center in the Donbas, killing upwards of [200 troops](#) per day, [wounding another 500](#) in the process.

Russia outguns Ukraine [20-1 in howitzers](#), [40-1 in artillery shells](#) and Rockets, and has a [significant advantage](#) in air power. There is [no rational basis](#) upon which to claim that Ukraine can stop the Russians, much less roll them back.

It is appropriate, in light of the awful record active and retired general officers have amassed over the past few decades, that both the media and public should give more scrutiny to future claims made by generals. It is understandable why many would give blanket trust to the word of a senior commander: they typically have 30-plus years of experience and have served at the highest levels. But evidence confirms that this trust has been misplaced and it is up to the generals to earn that trust back. Telling the truth and giving honest assessments would be a good place to start.

Contributing Editor, [Daniel L. Davis](#) is a Senior Fellow for Defense Priorities and a former Lt. Col. in the U.S. Army who deployed into combat zones four times. He is the author of ["The Eleventh Hour in 2020 America."](#)





**Does an attack with Molotov bombs justify shooting back with real ammo?**



## Ground ZERO: Consecration of the Saint Nicholas Greek Orthodox Church and National Shrine (July 04, 2022)



Source: <https://stnicholaswtc.org/about/our-story/>

**"Rebuild My Church"....**These words of our Lord Jesus Christ have been the inspiration to rebuild the Saint Nicholas Greek Orthodox Church, the only house of worship destroyed on 9/11, since that fateful day in 2001. But it would be rebuilt as more than the humble Greek Orthodox Church of lower Manhattan; it is being rebuilt as a National Shrine and place of pilgrimage for our Nation. And in accordance with the word of the Lord, it will be a House of Prayer for all people ([Mark 11:17](#)).



The original St. Nicholas Greek Orthodox Church was founded in 1916 in a small row house that had been used as a tavern. Greek immigrants of lower Manhattan purchased it in 1892 as a community home. For many Greeks coming to America, it would have been among their first stops after seeing the Statue of Liberty and their disposition from Ellis Island.

The little church stood in exactly the same location, 155 Cedar Street, witnessing the decades of growth and transformation around the financial centers of Wall Street and Battery Park. Even through the sixteen-acre construction of the original World Trade Center in the 1960's, the little church was an ever-present spiritual jewel, open to all. There are generations of New Yorkers who remember stopping by to light a candle, say a prayer, or just sit quietly. Over the years, the community of Saint Nicholas resisted attempts to sell the property, and by 2001, the church was encircled by a parking lot.

Everything changed on 9/11. Saint Nicholas was completely destroyed in the collapse of World Trade Center Tower 2 during the September 11, 2001 terrorist attacks. Thankfully, no one was in the Church when it was destroyed. Nevertheless, there are reports of Greek Orthodox Christians who escaped the burning Towers by running toward the sacred sound of



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the bell in the campanile that was a visual hallmark of the Church. In the immediate days that followed September 11th, when rescue and recovery efforts were at their most intense, a few scant objects were recovered from the site near and around 155 Cedar Street. Sadly, much like the remains of those who perished when the Twin Towers collapsed, few precious relics were found.

Even as there were challenges to commence construction, in July of 2010, remains of an 18th-century ship were unearthed on the very location of the former Saint Nicholas Church. The Miracle-working Saint is known throughout the world as the patron saint of those who sail the sea, and many took this as a sign that the resurrection of the Church was nigh.

Negotiations between the Church and the Port Authority to rebuild Saint Nicholas came to fruition under the leadership of New York Governor Andrew Cuomo and a new opportunity took shape. His office mediated settlement discussions designed to solve the issue of the Church's place within the WTC site once and for all. The result of this process was the decision to position the new Church at exactly the same place that had been determined years before, 130 Liberty Street just a stone's throw from its original location.

At the signing, Governor Cuomo said:

*"We lost Saint Nicholas Church in the destruction of September 11th and for too long its future has been uncertain. Rebuilding Saint Nicholas Church, with a nondenominational bereavement center, is not just good news for the Greek Orthodox community, but for all New Yorkers. With this agreement, we are continuing New York's collective healing, restoration, and resurgence. Now we are finally returning this treasured place of reflection to where it belongs."*

## For the eighth time, Turkey refused to inspect a ship for the "Irimi" operation

Source: <https://hellas.postsen.com/world/39754/For-the-eighth-time-Turkey-refused-to-inspect-a-ship-for-the-Irimi-operation.html>

July 04 – For the eighth time, Turkey **refused inspection** on a ship at the request of the Irimi enterprise, which concerns the **arms embargo on Libya**, said Commission representative Nabila Masrally. Asked about a tweet on the account of the "Irimi" company, according to which Turkey did not allow the inspection of the vessel MV Parpali, he noted: *"We regret Turkey's refusal to inspect yet another ship under Operation Irimi on Sunday evening based on UN Security Council Resolution 2292 on the arms embargo on Libya".* He added that *"all members of the United Nations are called upon by the UN Security Council to cooperate in inspections"* pointing out that *"this is the eighth time this has happened"*.



**EDITOR'S COMMENT:** What is the reason for keeping on running the Irimi Operation the moment that there is no will to enforce the same rules of engagement to all vessels inspected? Even humiliation has a glass ceiling!

## How Aegean Sea took its name: the legend of King of Athens, Aegeus

Source: <https://www.hostelbay.com/en/blog/how-aegean-sea-took-its-name-the-legend-of-king-of-athens-aegeus>

The route from [Piraeus](#) to Cape Sounio is the most wonderful route in Athens, if not in Greece. The street is near the sea, the sun mirrors on the crystal waters of the Saronic Gulf, numerous bars and taverns create a scenery like an island, and the [hotels by the sea](#) remind you that this is one of the most tourist areas in [Athens](#). The sea of Athens is the Saronic Gulf, but Cape Sounio, where the ancient temple of Poseidon is built, overlooks the Aegean Sea. The landscape is breathtaking. The temple is built at the edge of the cape, on a steep cliff, and the view of the Aegean Sea is magnificent.

However, the most impressive thing with that location is not the natural beauty, the crystal waters, the feeling of swimming in the Aegean Sea, although you are in a large city, the [luxury hotels](#) and restaurants or the





Theseus volunteered to go with the youths in Crete and slay the Minotaur. Because his father, Aegeus, was scared about his son's life, Theseus agreed to announce his father his fate upon his return. If he managed to slay the Minotaur and was alive, he would display white sails on his ship. Otherwise, the sails would be black. Aegeus waited for his son in Cape Sounion, where today is located the temple. Theseus managed, with the help of Ariadne, the daughter of King Minos, to slay the Minotaur and was alive. But Theseus forgot to change the sails from black to white because he was so happy for his success that he drank wine and had fun with his friends. Aegeus saw the ship coming from the Aegean Sea as he was standing in Cape Sounio. When he saw the black sails, he was so devastated that he threw himself off the cliff and into the sea where he perished. Due to this tragic mistake of Theseus, due to a misunderstanding, Aegeus lost his life. The sea where he committed suicide took his name, and the ancient Athenians built there a temple to honour the king of Athens.

## Misunderstanding (for political reasons)



IN 2021 UP TO

**800,000,000**

PEOPLE WENT HUNGRY  
WORLDWIDE.



One in 10 people globally  
suffers from chronic hunger.



**Donate more money  
and weapons to Ukraine**

## Erdoğan's Threats to Fellow NATO Member Greece Are All Bark, No Bite

By Burak Bekdil

Source: <https://www.meforum.org/63359/erdogan-threats-to-fellow-nato-member-greece-are>

July 05 – Turkey is a year away from presidential and parliamentary elections. Many Turks are starving. Literally. Their per capita GDP of around \$9,500 has crushed many of them under a triple-digit inflation rate and a fast-depreciating national currency, while independent economists warn that this may be only the beginning of worse torment in a country of 84 million people, excluding 9 million refugees and migrants.

Many Turks, although starving, are nevertheless proud that they have a leader who can confront the "infidel West" -- including their traditional rival and neighbor, Greece. It is precisely this feeling that President Recep Tayyip Erdoğan, whose popularity has been plummeting in recent months, sees as a national weakness to stoke. Warmongering, the Islamist strongman evidently calculates, may convince the Turks to support revisionist bullying and ignore their misery.

Erdoğan, in this latest gamble, appears both right and wrong. He is right that his warmongering consolidates his grassroots supporters -- conservative Muslim and nationalist Turks, an unquestioning 20% of voters. But he is wrong that playing the regional neo-Ottoman bully will suffice to earn him a third term as president. Various opinion polls put his popularity at less than 30%, compared to the 52% with which he won re-election in 2018.

What should Erdoğan do, therefore, as former loyalists of his powerful Justice and Development Party (AKP) seem to be deserting *en masse*? Revisit the same pre-election political recipe that has worked numerous times before:

1. Provoke tensions in the Aegean and eastern Mediterranean Seas;
2. Pray that Greek politicians feel compelled to reciprocate;
3. Raise the stakes through inflammatory rhetoric;
4. Provoke the Turks' anti-Hellenic sentiment, get national applause;
5. Play the neo-Ottoman hero fighting the infidels;
6. Pray that the US and EU join his theatrical production on Greece's side;
7. Turn the whole play into a drama of Turks vs. infidel Westerners;
8. Add some military fuel into the plot to provoke Turks' nationalist, militaristic feelings;
9. Tell the Turks, "We are at near war with the infidel Westerners";
10. In the final act, tell the Turks that their poverty is the result of Turkey's confrontation with the West and that "we all must pay this price for our independence."

### How could a peaceable NATO ally, Greece, pose a direct threat to another NATO member?

Erdoğan has already set the stage for the new episode of his theatrical extravaganza. His coalition partner, ultranationalist leader Devlet Bahçeli, [claimed](#) that U.S. military bases in Greece pose a "direct threat" to Turkish security. That is nonsense. But more nonsensical than Bahçeli's comment was the universal silence. How could a peaceable NATO ally, Greece, pose a direct threat to another NATO member, Turkey, home to US military bases? Are US bases in Turkey a direct threat to Turkey?

In a June 9 speech, Erdoğan said that Greece should stop posting military personnel on its Aegean islands that have a demilitarized status under the 1923 Lausanne Treaty and 1947 Paris Treaty. He called on Athens to "avoid dreams, acts and statements that will result in regret, as it did a century ago, and to return to its senses," and invoked Turkey's war of independence in the early 1920s, when Turks defeated occupying powers, including Greece. Erdoğan did not mention that the same treaties also ban the militarization of Turkey's islands in the Aegean Sea and Turkey's Dardanelles and Bosphorus straits.

Escalation was on the way. Earlier, Erdoğan [announced](#) that Turkey was halting all bilateral talks with Greece over a row with the Greek Prime Minister Kyriakos Mitsotakis on what Ankara calls "airspace violations."

In this crescendo of Turkey's inflammatory rhetoric, Foreign Minister Mevlüt Çavuşoğlu played his part. He repeatedly said that if Athens persisted in militarizing its islands, Turkey would start questioning Greek sovereignty over them. Now we have *casus belli* in the plot.

The AKP's spokesman, Ömer Çelik, has also joined in the "we'll-soon-invade-the-islands" chorus as he [threatened](#) Greece with the "Turks suddenly coming one night."

Now it is time for the extras to play their parts. The Erdoğan-controlled media are running [campaigns](#) saying that 22 Greek islands in the Aegean Sea can be claimed by Turkey, and that Turkey has sovereignty over nine of them, including Samos, Lesbos, Chios, Limnos, Rhodes and Icaria.

Fortunately, all these theatrics are about barking, not biting. Turkey does not have the political, military or economic might to invade a member of the EU, with the West watching. Turkey invading Greece is



Tayyip





not Russia invading Ukraine. Erdoğan is a gambler who has used the same tactic for domestic consumption many times before. The ruse never ended up in a war across the Aegean. This one is no exception: **Erdoğan, whatever he is, is not suicidal.**

**Burak Bekdil** is an Ankara-based political analyst and a fellow at the Middle East Forum.

## North Korea's Military Capabilities

Source: <https://www.homelandsecuritynewswire.com/dr20220706-north-korea-s-military-capabilities>

July 06 – The United States and its Asian allies see North Korea as a grave security threat. North Korea has one of the world's largest conventional military forces, which, combined with its missile and nuclear tests and aggressive rhetoric, has aroused concern worldwide. But world powers have been ineffective in slowing its path to acquire nuclear weapons.

While it remains among the poorest countries in the world, North Korea spends nearly a quarter of its gross domestic product (GDP) on its military, according to U.S. State Department estimates. Its brinkmanship will continue to test regional and international partnerships aimed at preserving stability and security. Negotiations on denuclearization have remained stalled since February 2019.

### What Are North Korea's Nuclear Capabilities?

The exact size and strength of North Korea's nuclear arsenal are unclear. However, analysts say Pyongyang has tested nuclear weapons six times and developed ballistic missiles capable of reaching the United States and its allies Japan and South Korea.

The North Korean regime possesses the know-how to produce nuclear bombs with weapons-grade uranium or plutonium, the primary elements required for making fissile material.

U.S. intelligence officials estimated in 2017 that North Korea had enough fissile material—the core component of nuclear weapons—for up to sixty weapons, and that every year it produces enough fissile material for twelve additional weapons. At that rate, in 2022, North Korea could have enough fissile material for more than one hundred nuclear weapons. Indeed, a 2021 RAND Corporation report projected that North Korea could have around two hundred nuclear weapons stockpiled by 2027. Some experts believe the current stockpile of fissile material to be smaller; the Bulletin of the Atomic Scientists' Hans M. Kristensen and Matt Korda estimated in 2021 that Pyongyang had enough material for forty to fifty nuclear weapons.












North Korea has conducted six nuclear tests, first in October 2006 and then in May 2009 under former Supreme Leader Kim Jong-il. Under Kim Jong-un, Kim Jong-il's son who assumed power in late 2011, the nuclear program markedly accelerated. Kim has directed four nuclear tests—in February 2013, January and September 2016, and September 2017—and 160 missile tests, far exceeding the number of trials conducted under his father and grandfather, North Korea's founder, Kim Il-sung.

With each test, North Korea's nuclear explosions have grown in power. The first explosion in 2006 was a plutonium-fueled atomic bomb with a yield equivalent to two kilotons of TNT, an energy unit used to measure the power of an explosive blast. The 2009 test had a yield of eight kilotons; the 2013 and January 2016 tests both had yields of approximately seventeen kilotons; and the September 2016 test

### NORTH KOREA / SOUTH KOREA

#### Military head to head

North Korea has the **fourth largest military in the world**. South Korea hosts the largest overseas US military base and pays **\$1 bn annually** to receive US military support.

	 North Korea	 South Korea
Country population	<b>25.8 million</b>	<b>51.8 million</b>
Total active personnel	<b>1,280,000</b>	<b>599,000</b>
Army 	<b>1,100,000</b>	<b>464,000</b>
Air Force 	<b>110,000</b>	<b>65,000</b>
Navy 	<b>60,000</b>	<b>70,000</b>
Paramilitary 	<b>189,000</b>	<b>13,500</b>
Reservists 	<b>5,700,000</b>	<b>3,100,000</b>
Artillery 	<b>21,600+</b>	<b>12,237+</b>
Tanks 	<b>3,500+</b>	<b>2,221</b>
Aircraft 	<b>545</b>	<b>579</b>
Submarines 	<b>71</b>	<b>18</b>



Source: IISS 2021 | September, 16 2021

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had a yield of thirty-five kilotons, according to [data from the Nuclear Threat Initiative](#), a Washington, DC-based nonpartisan think tank. (For comparison, the U.S. bomb dropped on Hiroshima in 1945, the first atom bomb, had an estimated yield of sixteen kilotons.) The nuclear test carried out on September 3, 2017, was [significantly larger](#), experts say, and indicated that the country has developed much more powerful bomb-making technology. Estimates from seismic activity led observers to conclude that the explosion likely exceeded [two hundred kilotons](#). An explosion of such a size gives credence to North Korea's claims of having developed a hydrogen bomb.

North Korea has not conducted a nuclear test since then. In 2018, North Korea said it shut down its main nuclear-material production site, the Yongbyon reactor complex, following the country's summits that year with the United States and South Korea. But in August 2021, the International Atomic Energy Agency (IAEA) reported that North Korea [had again started producing](#) fissile material at Yongbyon. By mid-2022, satellite imagery showed that construction had advanced, and the IAEA [expressed concern](#) that North Korea was preparing for a seventh nuclear test. Some experts caution that it is only a matter of time before North Korea completes its nuclear force. "We're going to have to learn to live with North Korea's [ability to target the United States](#) with nuclear weapons," said Jeffrey Lewis of the Middlebury Institute of Strategic Studies.

### What Missiles Has North Korea Tested?

North Korea has tested more than one hundred ballistic missiles with the ability to carry nuclear warheads, including short-, medium-, intermediate-, and intercontinental-range missiles and submarine-launched ones.

The regime successfully tested intercontinental ballistic missiles (ICBMs), each capable of carrying a large nuclear warhead, in July and November 2017. Pyongyang said that in its November test of the Hwasong-15 ICBM, the missile hit an altitude of [4,475 kilometers](#) (2,780 miles), far above the International Space Station, and flew about 1,000 kilometers (590 miles) before landing in the sea off Japan's coast. Analysts estimate the Hwasong-15 has a [potential range](#) of 13,000 kilometers (8,100 miles) and, if fired on a flatter trajectory, could reach anywhere on the U.S. mainland. American analysts and experts from other countries still debate the nuclear payload that North Korea's ICBMs could carry, and it is still unclear whether the ICBMs have the capability to survive reentry. A confidential [U.S. intelligence assessment](#) from 2017 reportedly concluded that North Korea had developed the technology to miniaturize a nuclear warhead to fit its ballistic missiles.

Kim halted missile testing in late 2017 amid a thawing of relations with the United States and South Korea. But North Korea resumed testing in mid-2019, months after negotiations between Kim and U.S. President Donald Trump in Hanoi, Vietnam, broke down. Later that year, Pyongyang conducted an [underwater launch of a ballistic missile](#), its first such test in three years.

Since then, North Korea has unveiled several new ballistic missiles. The first, shown during an October 2020 military parade, was an ICBM [larger than the Hwasong-15](#). It has not been named or tested, but analysts say it could potentially carry multiple nuclear warheads or decoys to confuse missile defense systems. A new Pukkuksong-4 submarine-launched ballistic missile was also displayed in October 2020, and its successor, Pukkuksong-5, was unveiled in January 2021. Experts [estimate the Pukkuksong-5 has a range](#) of around 3,000 kilometers (1,864 miles), which would allow it to strike Guam. In March 2022, North Korea test-fired an ICBM for the first time since 2017, breaking its self-imposed moratorium on testing long-range missiles. North Korea claimed this missile was the Hwasong-17, which is the country's [biggest ICBM yet](#) and has an estimated range of 15,000 kilometers (9,321 miles). However, the South Korean military said the missile tested was much smaller.

Pyongyang has also tested short-range ballistic missiles that are solid fueled, advancing a technology that makes missiles easier to transport and faster to launch. In addition, it tested a more maneuverable [long-range cruise missile](#), which can frustrate missile defense systems if launched in tandem with ballistic missiles. In September, North Korea for the first time [test-fired missiles from a railcar launcher](#), which makes them less detectable by the United States and its allies.

By mid-2022, North Korea had test-launched [over thirty missiles](#) since the start of the year, breaking its record for launches in any given year. CFR's Scott A. Snyder says that North Korea's [ramped-up testing](#) indicates that it has "no expectations for reengaging diplomatically with the United States."

There remain significant unknowns surrounding the accuracy of North Korea's ballistic missiles. Observers have said that these missiles are usually inaccurate because of their reliance on early guidance systems acquired from the Soviet Union. However, some defectors and experts say North Korea has begun using GPS guidance, similar to that of [China's navigation system](#), raising questions about the provenance of the system and whether North Korea's arsenal of missiles is more accurate and reliable than previously believed.

### Have Other Countries Aided North Korea's Nuclear Program?

The program is predominantly indigenous but has received external assistance over the years. Moscow, for instance, assisted Pyongyang's nuclear development from the late 1950s to the 1980s: it



helped build a [nuclear research reactor](#) and provided missile designs, [light-water reactors](#), and some nuclear fuel. In the 1970s, China and North Korea cooperated on defense, including on the development and [production of ballistic missiles](#) [PDF]. North Korean scientists also benefited from academic exchanges with Soviet and Chinese counterparts. Though the exchanges may not have been explicitly tied to weapons development, the information learned from research sharing and visits to nuclear facilities could have been applied to a militarized nuclear program, according to Joseph S. Bermudez Jr., an analyst of North Korean defense and intelligence affairs.

Pakistan also emerged as an important military collaborator with North Korea in the 1970s. Bilateral nuclear assistance began when scientists from the two countries were both in Iran working on ballistic missiles during the Iran-Iraq War (1980–1988). In the 1990s, [North Korea acquired](#) access to Pakistani centrifuge technology and designs from scientist [Abdul Qadeer Khan](#), who had directed the militarization of Pakistan's nuclear program. Pyongyang also received designs for a uranium warhead that Pakistan had likely obtained from China. In exchange, Pakistan received North Korean missile technology. It remains unclear whether Khan acted directly or indirectly on the behalf of the Pakistani government. (Khan's multinational network also illicitly sold nuclear technology and material to buyers, including Iran and Libya.) The nuclear know-how gained from Pakistan likely enabled North Korea to [operate centrifuges](#) and thereby pursue a uranium route to the bomb.

Third parties have also facilitated Pyongyang's program through the illicit shipment of metal components needed for centrifuge construction and nuclear weaponization. North Korea has developed covert networks for the procurement of technology, materials, and designs to boost its conventional and nuclear weapons programs since the 1960s. These networks, once primarily in Europe, have shifted to Asia and Africa, and goods are often traded multiple times before reaching North Korean hands, says Bermudez.

### What Punitive Steps Has North Korea Faced?

North Korea's withdrawal from the Nuclear Nonproliferation Treaty (NPT) in 2003 and its missile tests and first nuclear test in 2006 prompted the UN Security Council to unanimously adopt resolutions that condemned North Korea's actions and [imposed sanctions](#) against the country. The Security Council has steadily ratcheted up sanctions through subsequent resolutions in the hopes of changing Pyongyang's behavior. These additional measures ban arms sales to North Korea, as well as any financial assistance and the sale of materials and technology that could be used for ballistic missiles or nuclear weapons. The measures also impose restrictions on select luxury goods and other foreign trade, as well as inspections of cargo bound for North Korea. While current sanctions have curtailed North Korea's access to materials, it is [difficult to regulate](#) all international cargo deliveries. Further hurdles emerged as China and Russia vetoed a May 2022 Security Council resolution that proposed tighter sanctions, the first veto in favor of North Korea in fifteen years. The countries said that previous sanctions had done little to influence North Korea's behavior and accused the United States of further provoking North Korea with its proposal. Separately, North Korea has a record of missile sales and nuclear technology sharing with countries including Egypt, Iran, Libya, Myanmar, Syria, the United Arab Emirates, Vietnam, and Yemen. It has [secretly transferred](#) "nuclear-related and ballistic-missile-related equipment, know-how, and technology," the United Nations has reported. Given North Korea's economic constraints, fears abound that North Korea could resort to selling more nuclear material and knowledge, thereby enhancing the potential for nuclear terrorism.

### Does North Korea Possess Other Weapons of Mass Destruction?

**North Korea is believed to have an arsenal of chemical weapons, including sulfur mustard, chlorine, phosgene, sarin, and VX nerve agents.** The regime reportedly has the ["capability to produce"](#) [PDF] nerve, blister, blood, and choking agents" and is [estimated to have stockpiled](#) [PDF] between 2,500 and 5,000 tons of chemical weapons. These toxins can be fired using a variety of conventional shells, rockets, aircraft, and missiles. The army also manufactures its own protective suits and detection systems for chemical warfare.

**North Korea is also believed to possess some biological weapons capabilities,** although it became a party in 1987 to the [Biological Weapons Convention](#), a treaty banning the production, development, stockpiling, and attempts to acquire biological weapons. In 1988, it acceded to the [Geneva Protocol](#), which prohibits the use of asphyxiating, poisonous, and other gases in warfare. North Korea allegedly has the [ability to produce](#) [PDF] pathogens including **anthrax, smallpox, and pest (plague)**, although its ability to weaponize them is unclear.

### Read also:

- ❖ [South Korean Chemical Weapons](#)
- ❖ [South Korean Biological Weapons](#)
- ❖ [South Korean Nuclear Weapons](#)



### What Are North Korea's Conventional Military Capabilities?

North Korea's military is the world's fourth largest, with nearly 1.3 million active personnel, accounting for about 5 percent of the total population. More than six hundred thousand others serve as reserve soldiers. Article 86 of the [North Korean constitution](#) [PDF] states, "National defense is the supreme duty and honor of citizens," and it requires all citizens to serve in the military.

The U.S. State Department estimates that the regime spent an average of [\\$4 billion annually](#) on its military from 2009 to 2019, a figure that equals nearly a quarter of North Korea's GDP. North Korea's neighbors and adversaries outspend it in dollar-to-dollar comparisons, and defense experts say it operates with aging equipment and technology. Yet, the regime's forward-deployed military position and missiles aimed at Seoul ensure that Pyongyang's conventional capabilities remain a constant threat to its southern neighbor. North Korea has deployed munitions near and along its border with South Korea and also has conventional missiles aimed at its neighbor and Japan in a bid to deter potential attacks. According to a [2021 report](#) by the International Institute for Strategic Studies, a United Kingdom-based think tank, the North Korean military has approximately 550 combat-capable aircraft, 290 helicopters, 400 combatant vessels, 280 amphibious vessels, 70 submarines, 4,000 tanks, 2,500 armored vehicles, and 5,500 multiple-rocket launchers.

### Does It Pose a Cybersecurity Threat?

North Korea's cyberwarfare capabilities have advanced significantly over the years, and its hackers use increasingly sophisticated tools to target government, media, financial, and private institutions around the world. Some experts say that North Korea's cyberwarfare capabilities now pose a more immediate threat than its military programs.

Pyongyang has invested significant labor and capital into developing its cyberattack capacity. It relied on Chinese and Soviet assistance in the 1980s and 1990s, and today, its hackers train at elite North Korean technology schools and [attend top science and engineering schools](#) in China to gain access to advanced technology unavailable in North Korea.

North Korea has demonstrated the ability to devastate critical infrastructure systems and infiltrate military, government, and intelligence networks. Cyberattacks on [South Korean banks](#) and media outlets, as well as the [2014 Sony Pictures hack](#), have been traced back to groups with ties to North Korea. In December 2016, South Korea accused North Korea of breaching its military's cyber command. In 2017, the [Wannacry 2.0 ransomware attack](#) compromised aviation, railway, and health-care networks in the United States, Asia, and Europe. The U.S. Department of Justice charged a North Korean man believed to be a member of the [Lazarus Group](#)—which is suspected of being backed by North Korea and responsible for Wannacry and several other high-profile attacks—for his involvement in those incidents. Individuals, think tanks, and government agencies working in national security and foreign policy in the United States, Japan, and South Korea continue to be targeted by the North Korean cyber unit known as [Kimsuky](#).

Pyongyang's cyber apparatus also increasingly focuses on cybertheft as a major source of revenue for the regime and its weapons program, stealing money from financial organizations and cryptocurrency exchanges. North Korean actors [targeted organizations](#) in more than thirty countries for cryptocurrency theft in 2020, and a UN report [found that](#) North Korea had stolen more than \$2 billion through cybercrime as of 2019.

### What Drives North Korea's Militarization?

North Korea's guiding philosophical principles have been *juche* (self-reliance) and *songun* (military-first politics). The military plays a central role in political affairs and its position has been steadily elevated through the Kim dynasty. North Korean leadership believes that hostile external forces, including South Korea and the United States, could mount an attack. As a result, in Pyongyang's eyes, the only way to guarantee national survival is to develop asymmetric military capabilities to thwart its perceived threats. In the decades since the Korean War armistice, the regime in Pyongyang has grown increasingly isolated, in large part due to its ongoing nuclear pursuits and other military provocations. The North's economy and impoverished population of twenty-five million are more and more cut off from the global economy, with limited means to acquire much-needed hard currency. Despite Pyongyang's reputation as a pariah state, Kim Jong-un remains committed to a [national strategy](#) of building up the economy and nuclear capabilities jointly.

Because Kim has struggled to deliver on his economic promises, he seeks to consolidate his rule by demonstrating unquestioned military might. The nuclear program thus has a dual purpose: to deter external threats and to bolster the image of Kim.

Since Kim Jong-un assumed power, the country has shed the ambiguous language surrounding its nuclear and missile development, instead vowing to conduct tests [whenever it sees fit](#). Punitive measures taken against Pyongyang seem to have only emboldened Kim's commitment to strengthening the military. And although diplomatic engagement has in the past temporarily slowed North Korea's rate of testing, it has not resulted in denuclearization.

**EDITOR'S COMMENT:** The main problem of S. Korea is its overdependence on the USA and that has proven to be quite dangerous and untrustworthy.



**Is there  
a difference  
between**



**a Proxy War  
and  
World War III?**

## D.B. Cooper, the Changing Nature of Hijackings and the Foundation for Today's Airport Security

By Janet Bednarek

Source: <https://www.homelandsecuritynewswire.com/dr20220711-d-b-cooper-the-changing-nature-of-hijackings-and-the-foundation-for-today-s-airport-security>



July 11 – Though many Americans may associate airport security with 9/11, it was a wave of hijackings in the late 1960s and early 1970s that laid the foundation [for today's airport security protocols](#). During that period, a hijacking occurred, on average, [once every five days globally](#). The U.S. dealt with its own spate of mile-high crimes, convincing reluctant government officials and airport executives to adopt the first important airport security protocols.

The subject of [a new Netflix docuseries](#), hijacker D.B. Cooper emerged as something of a folk hero during this era. While other more violent hijackings might have played a bigger role in prompting early airport security measures, it was the saga of Cooper that captured the imagination of the American public – and helped transform the perception of the overall threat hijackings posed to U.S. air travel and national security.

### Incidents Become Impossible to Ignore

The first airplane hijacking happened in [1931 in Peru](#). Armed revolutionaries approached the grounded plane of pilot Byron Richards and demanded that he fly them over Lima so they could drop propaganda leaflets. Richards refused, and a 10-day standoff ensued before he was eventually released.

That remained a somewhat isolated incident until the [late 1940s and 1950s](#), when several people hijacked airplanes to escape from Eastern Europe to the West. In the context of the Cold War, Western governments granted these hijackers [political asylum](#). Importantly, none of the airplanes hijacked were flown by U.S. carriers.

Beginning in the early 1960s, however, hijackers began targeting U.S. airlines. Most of these individuals were [Cubans](#) living in the U.S. who, for one reason or another, wished to return to their native land and were otherwise blocked due to [the U.S. embargo](#) against Cuba.

U.S. officials responded by [officially and specifically making hijacking a federal crime](#). Though the new law didn't stop hijackings altogether, the crime remained relatively rare. When they did occur, they usually didn't involve much violence.

[Officials wanted to downplay hijackings as much as possible](#), and the best way to do this was to simply give the hijacker what they wanted to avert the loss of life. Above all, airline executives wanted to avoid deterring people from flying, so they resisted the implementation of anxiety-inducing security protocols.

That changed in 1968. On July 23 of that year, members of the Popular Front for the Liberation of Palestine [hijacked an El Al flight](#) from Rome to Tel Aviv. Though that 39-day ordeal ended without any loss of life, it ushered in a new era of more violent – often politically motivated – hijackings of international airlines.

From 1968 to 1974, U.S. airlines experienced [130 hijackings](#). Many fell into this new category of politically motivated hijackings, including what has become known as the [Dawson's Field hijackings](#). In September 1970, the Popular Front for the Liberation of Palestine hijacked four aircraft, including three belonging to U.S. carriers, and forced them to land at Dawson's Field in Libya. No hostage lives were lost, but the hijackers used explosives to destroy all four aircraft.

Additionally, and more worrying to U.S. officials, two different groups of hijackers, [one in 1971](#) and [another in 1972](#), threatened to crash planes into nuclear power plants.

### Cooper Inspires Copycats

Amid this dramatic rise in the number of hijackings, on Nov. 24, 1971, a man known to the American public as [D.B. Cooper](#) boarded a Northwest Orient 727 flight from Portland, Oregon, to Seattle. Shortly after takeoff, he showed a stewardess the contents of his briefcase, which he said was a bomb. He then instructed the stewardess to take a note to the cockpit. In it, he demanded US\$200,000 in \$20 bills and four parachutes.

Upon arrival in Seattle, Cooper allowed the other passengers to deplane in exchange for the money and the parachutes. Cooper then ordered the pilot to fly to Mexico but low and slowly – [no higher than 10,000 feet \(3,048 meters\) and under 200 knots \(230 mph, 370 kph\)](#). Somewhere between Seattle and a fuel stop in Reno, Nevada, Cooper and the loot disappeared out the back of the aircraft via the



727's [aft stairwell](#). No one knows for sure what happened to him, though some of the money was recovered in 1980.

Cooper wasn't the first person to hijack an American airliner and demand money. That dubious honor belongs to [Arthur Barkley](#). Frustrated with his inability to get government officials to take seriously his dispute with the IRS, on June 4, 1970, Barkley hijacked a TWA aircraft, demanding \$100 million and a hearing before the U.S. Supreme Court. Barkley's efforts failed, and he ended up confined to a mental institution.

The idea that Cooper might have succeeded, however, clearly inspired several imitators. While it remains uncertain whether Cooper lived to enjoy the fruits of his escapade, none of his imitators did. They included [Richard McCoy, Jr.](#), [Martin J. McNally](#) and [Frederick Hahneman](#), all of whom successfully parachuted out of the aircraft once they received their ransom payments, only to be eventually caught and punished.

### Tightening the Screws

In response to the spate of more violent and costly hijackings, the U.S. government established the [first anti-hijacking security protocols](#). Most of them aimed to prevent hijackers from getting on aircraft in the first place. The measures included a hijacker profile, metal detectors and X-ray machines. Specific to Cooper, airlines retrofitted aircraft with a device known as a [Cooper vane](#) that made it impossible to open aft stairwells during flight.

The protocols put in place in the 1970s also laid the foundation for the expansive security measures taken after 9/11. A series of court cases upheld the constitutionality of these early measures. For example, [United States v. Lopez](#), decided in 1971, upheld the use of the hijacker profile.

More importantly, in [United States v. Epperson](#), a federal court ruled in 1972 that the government's interest in preventing hijackings justified the requirement for passengers to pass through a magnetometer at the airport. And in 1973, the Ninth Circuit Court, in [United States v. Davis](#), declared that the government's need to protect passengers from hijackings rendered all searches of passengers for weapons and explosives as reasonable and legal.

These rulings upholding early anti-hijacking measures helped create [the strong legal grounds](#) for the rapid adoption of the more rigorous security protocols – including detailed identification checks, random pat-downs and full body scans – adopted after 9/11.

The mystery surrounding the fate of Cooper may have afforded him an outsized place in American popular culture, but his crime should also be remembered as one in a consequential wave of hijackings that finally forced the U.S. government, airline executives and airport officials to adopt the first versions of the security measures travelers take for granted today.

[Janet Bednarek](#) is a Professor of History @ University of Dayton.

## Hunger: Facts & Figures

Source: <https://www.welthungerhilfe.org/hunger/>

Up to 828 million people do not have enough to eat. Learn about the causes and consequences of hunger, where the situation is worst and what should be done to overcome hunger.

Every thirteen seconds, a child dies from the effects of hunger. Up to 828 million people are going hungry – whilst there is enough food, knowledge and resources for all. And what's more, food is a [human right](#). [Since its establishment](#) Welthungerhilfe has used various strategies to eradicate [global hunger by 2030](#).

### Hunger Definition – What is Hunger?

When specialists talk about hunger, they differentiate between three types: acute, chronic and hidden hunger.

**Acute hunger** (famine) designates undernourishment over a definable period. It is the most extreme form of hunger and arises frequently in connection with crises like droughts due to El Niño, [wars and disasters](#). It often affects people who are already suffering from chronic hunger. That applies to almost eight percent of all hungry people.

**Chronic hunger** designates a state of long-term undernourishment. The body absorbs less food than it needs. Although the media mostly report on acute hunger crises, globally, chronic hunger is by far the most widespread. It usually arises in connection with poverty. Chronically hungry people do not have sufficient money for healthy nutrition, clean water or health care.

**Hidden hunger** is a form of chronic hunger. Due to an unbalanced diet, important nutrients are lacking, such as iron, iodine, zinc or vitamin A. At first glance, the consequences are not necessarily very visible, but over the long-term these nutrient deficiencies lead to serious diseases. In particular, children are



unable to develop correctly, neither mentally nor physically. The risk of death is high. Hidden hunger not only harms individuals, but can inhibit the overall development of an affected region, as the efficiency and health of people decreases.

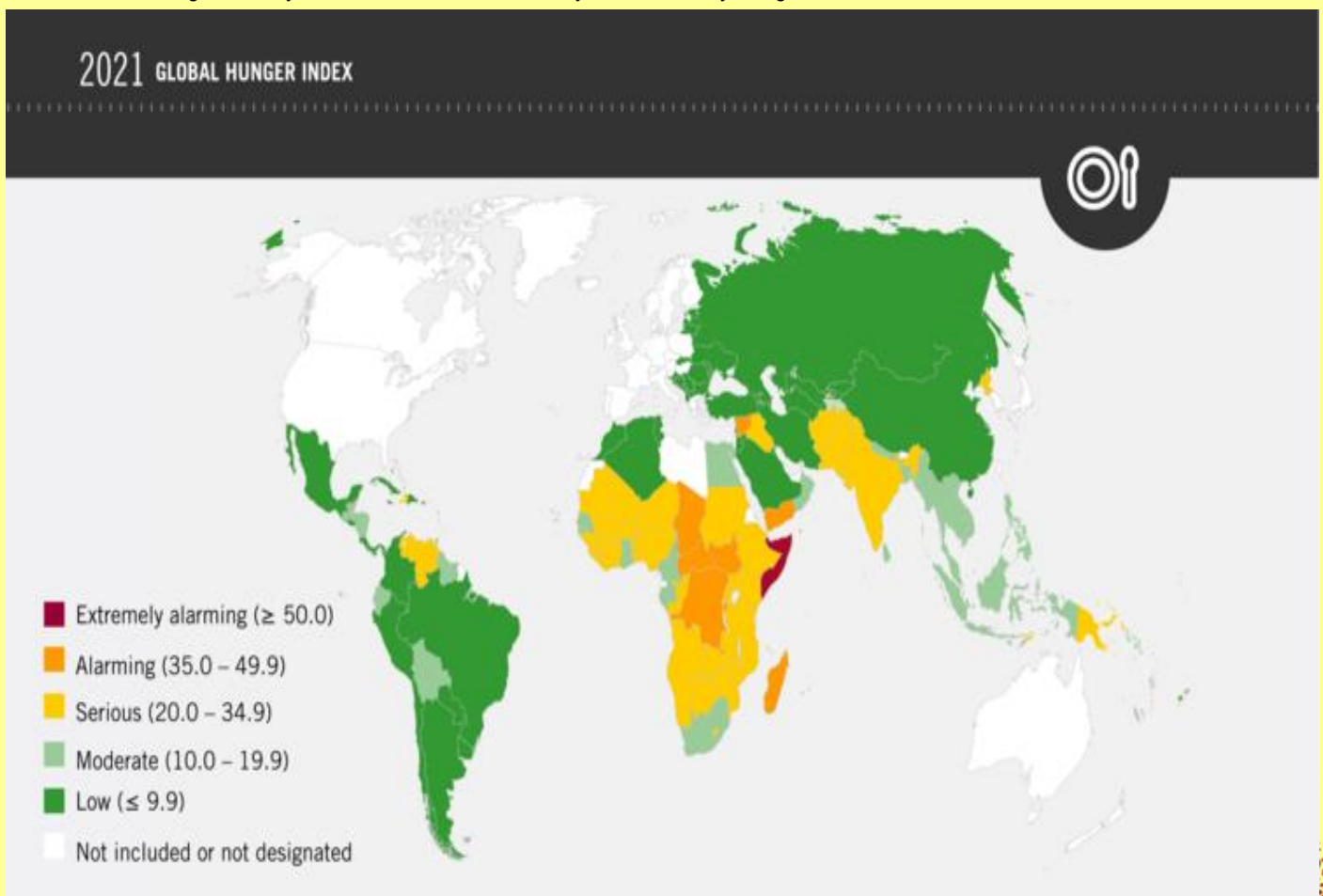
### Hunger Worldwide



In 2021, 828m people went hungry worldwide. One in 10 people globally suffers from chronic hunger. © Welthungerhilfe

### Who is Going Hungry?

The situation is particularly bad in the countryside, three-quarters of all hungry people live there. Almost all of them produce food themselves. As [smallholders](#), however, they and their families only cultivate small fields, on average just 1.6 hectares, which is the equivalent of about two football pitches. Pastoralists have less and less pastureland available. Indigenous population groups, which traditionally have a diet of forest fruits and other wild plants, are increasingly [being driven from their land](#). Landless people, who have to work for low wages as day labourers, are also seriously threatened by hunger.





### Hunger Affects the Weakest

Within these groups, children are particularly badly affected. In traditional societies they suffer heavily from the consequences of structural inequalities. Women have little access to education or opportunities to earn a livelihood. Most do not have their own resources, such as land or capital. At the same time, they frequently struggle with the double burden of farm work and raising children. As a result, many children do not receive enough care or food. A lack of knowledge about nutrition and hygiene issues increases this risk.

Since its establishment, Welthungerhilfe has worked supporting disadvantaged smallholders and the landless for [site-appropriate agriculture](#).

### Where does Hunger Exist?

The [Global Hunger Index](#) (GHI) provides as precise as possible a picture of global nutrition and hunger. It measures the nutritional state of the population on the basis of four indicators. It has been published by Welthungerhilfe for more than ten years together with international Partners.

Hunger hotspots are in Africa South of the Sahara and South Asia. According to the GHI 2021, the hunger situation in Somalia is *extremely alarming*. In five other countries - Central African Republic, Chad, Democratic Republic of Congo, Madagascar and Yemen - the hunger situation is classified as *alarming*. For several countries GHI scores could not be calculated, because data were not available for all four GHI indicators. But based on other data, the situation was found to be alarming in four countries, namely Burundi, Comoros, South Sudan and Syria.

### Hunger is Strongest in Rural Areas



### Why does Hunger Exist?

Hunger and malnutrition have many causes. The Agenda 2030 points the way to a fair world. Welthungerhilfe is concentrating on its core theme of [food and nutrition security](#).

**Natural disasters:** Weather extremes have always led to hunger crises. Droughts and floods destroy harvests. With climate change, extreme weather events are increasing. Droughts over many consecutive years weaken the resilience of the population. They are forced to use up their seed supplies or slaughter cattle.

**Poverty:** Hunger is, above all, a consequence of poverty. Someone who is poor has insufficient money for food but also cannot provide for their own health and cannot invest in education for children. Women are usually particularly disadvantaged. Only [site-appropriate agriculture](#) can combat poverty and hunger.

**Wars and conflicts:** Armed conflicts cause farmers to flee, leaving them unable to cultivate their fields. Frequently they lose all of their possessions. Roads and agricultural infrastructure such as irrigation facilities are destroyed. Due to the limited security, trade also suffers; food becomes scarce and expensive.



**Inequality:** The Agenda 2030 calls on us to leave no-one behind. Nevertheless, the inequality between [rich and poor](#) is increasing, both globally and within individual countries. One percent of the global population possesses nearly half of the global fortune. The 'lower billion' of the poor and hungry have almost no chance to free themselves from their hardship. The recently introduced Food Security Standard (FSS) should manage food and nutrition security with greater justice worldwide.

**Biased global trade:** The rich states determine the rules of international policy. Unfair trade agreements and subsidies create market access and price advantages for enterprises from the industrial nations. Developing countries primarily export raw materials, the profits are skimmed off by rich states. Fairer agricultural trade promotes smallholders and [rural value chains](#). Welthungerhilfe gives [a voice](#) to the disadvantaged main producers of food.

**Poor governance:** The governments in developing countries mostly do not align their policies to the needs of the poorest population. There is a lack of strategies to promote agriculture in their own country in such a way that no-one goes hungry. Corruption is one of the greatest obstacles to development, [land grabbing](#) is a big problem.

**Waste of resources and climate change:** If everyone in the world lived as the rich countries do, resources such as water and land would soon be exhausted. The consequences are borne by others: Expansion of deserts, soil erosion, water scarcity and extreme weather phenomena as a result of climate change are becoming particularly apparent in countries that already suffer from hunger and poverty.

### Hunger is Avoidable



### What are the Consequences of Hunger?

#### Hunger and Poverty Create a Vicious Circle

Undernourishment is not only a consequence of poverty, it also causes poverty, by being passed on from generation to generation – a vicious circle. If mothers-to-be are already undernourished, their children cannot develop correctly during the pregnancy and are frequently born prematurely and/or underweight.

If a child already suffers from [malnutrition](#) in the womb, it has little chance of catching up on its underdevelopment. It often has a weakened immune system and is thus more susceptible to infectious diseases. The physical and mental development of the child is restricted, it has more difficulty concentrating and produces poorer school results. In addition, a malnourished child is also more prone to developing chronic diseases in adulthood. Both tend to lead to reduced physical and mental capacity in adulthood. And so earning opportunities decrease and the risk of poverty increases – the cycle continues.





# MMA

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## Von der Leyen: Dear Macedonians, Macedonian language is your language, we fully respect that

I wanted to be here today among you so that I may speak to you directly, so that you may hear from me how Europe is waiting for you. Waiting and hoping that you will take yet another step towards our Union, said European Commission President Ursula von der Leyen in her address to lawmakers on Thursday.

 Ivan Kolevski · 14 July, 2022 14:06

The website's URL needs to be corrected as well: it is not ".mk" but ".nmk"

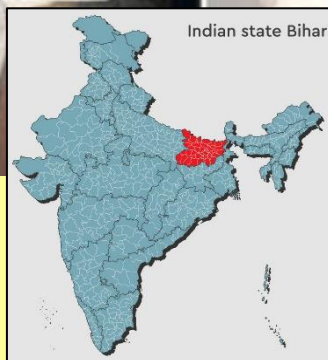
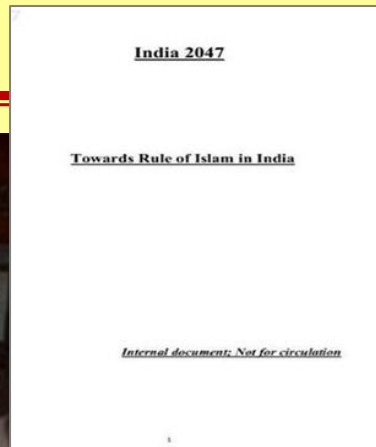


## 'An Islamic rule by 2047': Suspected terror module bust in Bihar unearths chilling details

Source: <https://www.firstpost.com/india/an-islamic-rule-by-2047-suspected-terror-module-bust-in-bihar-unearths-chilling-details-10910091.html>

July 14 – The Bihar Police have busted a suspected terror module with links to extremist outfit Popular Front of India (PFI). It arrested two accused from the Phulwari Sharif area of Patna for indulging in anti-India activities and unearthed a document which discusses plans to establish an "Islamic government" in India by the 100th anniversary of the country's independence.





The arrested duo Mohd Jallauddin (right), a Parvez is a former member of the banned India and a current member of the PFI and Twitter/@News18India

retired police officer of Jharkhand, and Athar organisation Students' Islamic Movement of Social Democratic Party of India (SDPI).

### What do we know about the document?

The eight-page document titled 'India 2047- Towards rule of Islam in India' was recovered after Bihar Police on 13 July. Excerpts of the internal document marked 'not for circulation' states that the PFI is confident that even if 10 per cent of the total Muslim population rallied behind it, the organisation would "subjugate the majority community to their knees and bring back the glory of Islam in India".

"To achieve this goal, this roadmap has been prepared to be kept in mind by all the PFI leaders and accordingly guide the PFI cadres, in particular and Muslim community, in general towards this goal," it added.

"All our frontal organisations including the party should be focused on expanding and recruiting new members. We would begin to recruit and train members into our PE department wherein they should be given training on attacking and defensive techniques, use of swords, rods, and other weapons," the document read.

### Getting help from 'friendly' Islamic nations

It also enumerated plans to recruit "loyal Muslims" into government departments including executive and judicial positions as well as the police and the army. According to the document, the PFI also plans to "create a split between RSS and SCs/STs/OBCs" by projecting the organisation as an outfit interested only in the welfare of "upper caste Hindus".

It stated that those against their interest are to be "eliminated".

"These PE cadres would also act as a safeguard against the influence of security forces by our opponents," it said.

Actionable points outlined in the document included 'establishment of grievances', mass mobilisation, inclusiveness, outreach and engagement (mobilisation), a PFI in every house, recruitment and training of members, and the collection of information against Sangh/Parivar leaders.

According to the papers, "in the scenario of a full-fledged showdown with the state, apart from relying on our trained PE cadres, we would need help from friendly Islamic countries. In the last few years, PFI has developed a friendly relationship with Turkey, a flagbearer of Islam. Efforts are on to cultivate reliable friendship in some other Islamic countries."



### The arrests

Following the 13 July raid, two accused were arrested from the Phulwari Sharif area of Patna for indulging in anti-India activities. A third accused was arrested on Thursday.

The arrested duo was identified as Mohd Jallauddin, a retired police officer of Jharkhand, and Athar Parvez, a former member of the banned organisation Students' Islamic Movement of India and a current member of the PFI and Social Democratic Party of India (SDPI).

### Anti-India activities

After the raid and the arrest of the two accused, the Assistant Superintendent of Police (ASP), Phulwari Sharif, Manish Kumar, said an excerpt from the eight-page-long document talks about "subjugating coward majority community and bringing back the glory".

"Two indulging in anti-India activities were arrested. For the past two months, the accused had people from other states coming in. Those coming were changing their names while booking tickets and staying in hotels," the police official said. He said an FIR was lodged against a total of 26 people of which three people have been arrested.

Kumar said that Parvez's younger brother was jailed in 2001-2002 bomb blasts in the state after SIMI was banned. Parvez also raised funds in lakhs. He said locals were taught to use swords and knives under the guise of learning martial arts and the accused instigated others towards religious violence.

"On 6 and 7 July, in the name of martial arts, locals were taught to use swords and knives. They instigated others toward religious violence. We have CCTV footage as well as witness accounts. Parvez also raised funds in lakhs, ED is being involved for the same," said Kumar.

### PDI and SDPI, extremist organisations: HC

The Kerala High Court observed in May this year that PFI and its political wing SDPI are extremist organisations indulging in serious acts of violence. It, however, said that these organisations are not banned.

The bench of Justice K Haripal made the observation while dismissing the plea seeking a Central Bureau of Investigation (CBI) probe into the murder of RSS worker S Sanjith

"No doubt, SDPI and PFI are extremist organisations indulging in serious acts of violence. All the same, those are not banned organisations," the court had said.

## These 4 Factors Can Explain Why So Many People Are Rejecting Science

Source: <https://www.sciencealert.com/distrust-in-science-is-causing-harm-but-these-researchers-have-a-plan>



July 16 – Distrust of science is a massive problem. In our current environment, it's [directly leading to people's deaths](#). Much of the misinformation we face is [intentional](#) and [organized](#), and even worse, research has found [lies seem to spread faster online](#) and are often [stickier than the truth](#). So psychologist Aviva Philipp-Muller, now at Simon Fraser University, and colleagues dug into the scientific literature on persuasion and communication, to try and outline an up-to-date and cohesive overview on how to tackle this [wicked problem](#). One of the biggest myths about communicating science is that merely presenting people with knowledge will lead to them acting



accordingly with logic. This is known as the [information deficit model](#), and the mode of communication we're using here, but between the [global pandemic](#) and [climate crisis](#) we now have countless examples of how this often doesn't work.

"Vaccinations used to be a standard thing that everyone accepted," [says](#) Ohio State psychologist Richard Petty. "But there have been a few developments in recent years that have made it easier to persuade people against the scientific consensus on vaccinations and other issues."

While that may be hard for many of us to swallow, people do have plenty of legitimate reasons for their distrust.

For starters, industries are degrading trust in science by hijacking scientific credentials, using "sciency" sounding claims to bolster their clout for profits; [pharmaceutical companies](#) have most certainly given us plenty of reasons not to trust them. What's more, [science doesn't always get things right](#), and [large factions of the media](#) are stoking sentiments against "elitist" experts and bolstering anti-science views.

All this doubt, conflict, and [information overload](#) are [eroding people's trust in scientists](#), and those of us often responsible for conveying scientific information to the public, like the media and government officials, are [faring even worse on the trust scales](#).

This distrust of the source of information is one of the four main barriers to accepting science Philipp-Muller and colleagues identify in their review.

When information challenges a person's core beliefs, challenges the group they identify with, or doesn't match their learning style are the other main barriers the team highlighted.

"What all four of these bases have in common is they reveal what happens when scientific information conflicts with what people already think or their style of thought," [explains](#) Petty.

### 1. Distrust in the information source

As mentioned above, lack of trust in the information source comes up time and [time again](#) as one of the key reasons people don't accept scientific information.

Legitimate and robust scientific debate [can also confuse people](#) who are not familiar with the scientific process, further damaging trust when it spills into the public domain.

To combat these trust issues the researchers suggest [highlighting the communal nature of science](#) and emphasizing the wider, [prosocial goals of research](#). Honestly acknowledging other people's positions and any drawbacks in your own, rather than brushing them away, can also go a long way to better establishing trust, the team explains.

"Pro-science messages can acknowledge that there are valid concerns on the other side, but explain why the scientific position is preferable," [says](#) Philipp-Muller.

### 2. Tribal loyalty

[The way our thinking is wired](#) as an [obligatorily social species](#) makes us very vulnerable to sometimes blindly believing those we identify with as part of our own cultural group – no matter [how much education](#) we have had. This phenomenon is called [cultural cognition](#).

"Work on cultural cognition has highlighted how people contort scientific findings to fit with values that matter to their cultural identities," [write Philipp-Muller and colleagues](#).

Political polarization and social media have only enhanced this. For example, conservatives are more likely to believe scientists that appear on Fox News, and liberals are more likely to trust those on CNN.

"Social media platforms like Facebook provide customized news feeds that means conservatives and liberals can get highly varied information," [explains](#) Philipp-Muller.

To combat this we need to find common ground, create information that's framed for specific target audiences, and collaborate with communities holding anti-science views, including people [traditionally marginalized by science](#).

### 3. Information goes against personal beliefs

The internal conflicts created by information that challenges our social or personal beliefs such as morals and religion, lead to logical fallacies and [cognitive biases](#) such as [cognitive dissonance](#).

"Scientific information can be difficult to swallow, and many individuals would sooner reject the evidence than accept information that suggests they might have been wrong," [the team wrote in their paper](#). "This inclination is wholly understandable, and scientists should be poised to empathize."

So key strategies to counter this include showing an understanding of the other person's viewpoint.

"People get their defenses up if they think they are being attacked or that you're so different from them that you can't be credible," [says](#) Petty. "Find some places where you agree and work from there."



## ICI C<sup>2</sup>BRNE DIARY – July 2022

Counterintuitively, increasing someone's general scientific literacy [can actually backfire](#), because it provides the skill to better bolster their pre-existing beliefs. Increasing scientific reasoning and [media literacy skills](#), [prebunking](#), or [inoculating](#) people against misinformation are advised instead, as is framing information in line with what matters to your audience and using relatable [personal experiences](#).

### 4. Information is not being presented in the right learning style

This problem is the most straightforward of the four bases – a simple mismatch in how information is being presented and the style best suited to the receiver. This includes things like preferring abstract compared to concrete information, or being [promotion or prevention focused](#).

Here, Philipp-Muller and team suggest making use of some of the same tactics that anti-science forces have been using. For example, like the technology and advertising industry, researchers should be using metadata to better target messaging based on people's profiles according to personal online habits.

While the current level of public acceptance of research can be disappointing, the good news is that trust in scientists has fallen it is [still relatively high](#) compared to other information authorities.

As much as we pride ourselves on being logical beings, in reality, we humans are animals with messy minds that are just as governed by our social alliances, emotions, and instincts as our logic. Those of us involved with science, whether as supporters or practitioners, must understand and account for this.

●► The review was published in [PNAS](#).

## 0 tempora, o mores!



**Tweet:** Jim Jatras is a retired former U.S. diplomat and GOP Senate foreign policy adviser.

**Right:** Transgender Rachel Leland Levine is an American pediatrician and a four-star admiral in the United States Public Health Service Commissioned Corps.

**Left:** Samuel Brinton is an American nuclear engineer and LGBTQ activist appointed to be the deputy assistant secretary of Spent Fuel and Waste Disposition in the Office of Nuclear Energy in January 2022.

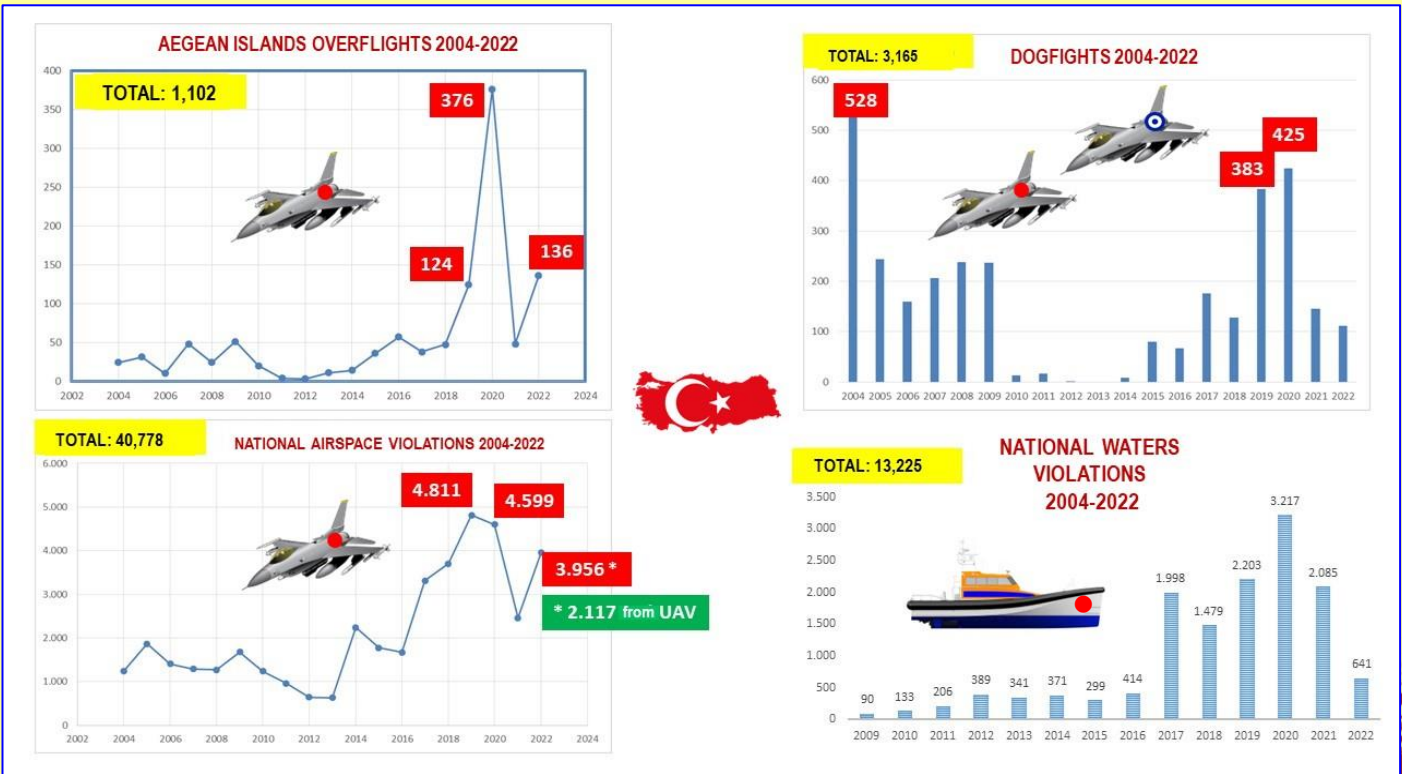


## Who gives a damn about peace?

A (US-proposed) scenario to hit the 17km (3.5 billion USD) **Crimea Bridge** with a Harpoon AGM-84L missile (-s)



## Greece: The misfortune of living in a bad neighborhood!





48  
*years*



## School defense – easier than it sounds

By the Editor of C<sup>2</sup>BRNE Diary

Some thoughts derived from my small experience exploring (some time ago) school defense in the USA.

### Outer defense

It is an invisible human shield surrounding the school block looking for people with strange or suspicious behavior. School personnel, volunteers, or ex-police/military individuals can do that – requires short training on how to identify suspects. Human screeners in plain clothing patrol around the outer perimeter of the school.

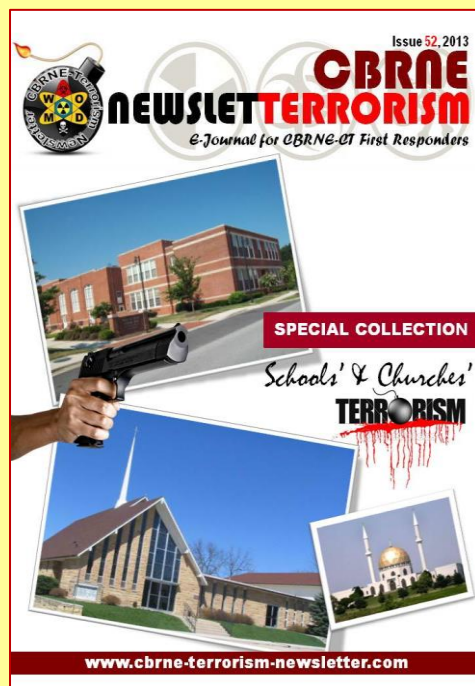
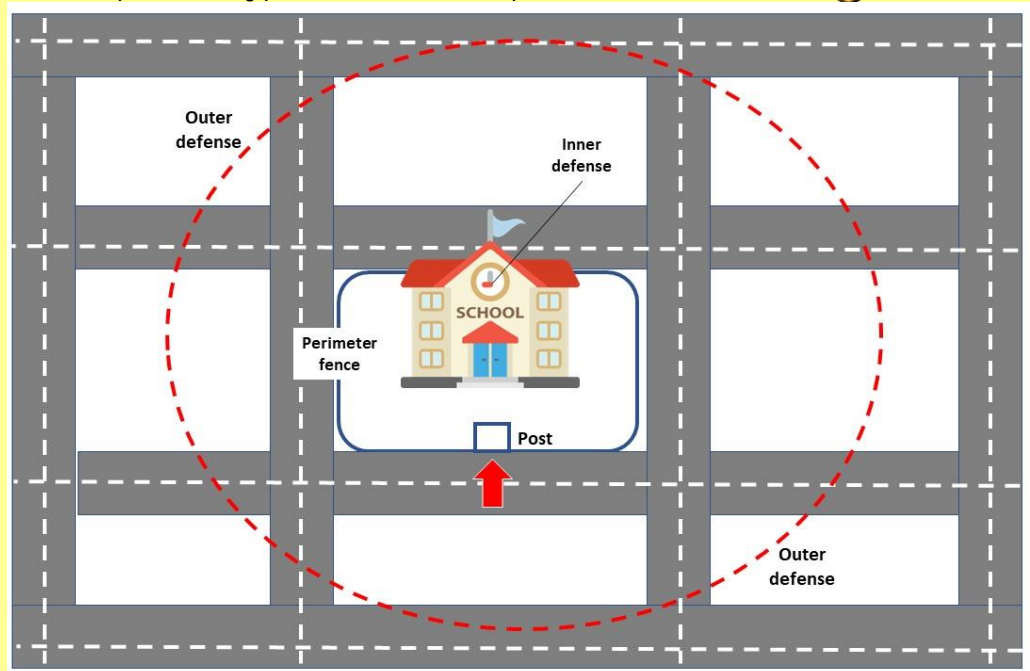


### Perimeter defense

Modern schools might avoid fences for various (mostly stupid) reasons. But without a good perimeter fence, everybody (from a shooter to a lion) can enter the school's premises. The perimeter has a main entrance post and students/teachers enter by showing their ID to the school security officer. The same applies to the second entrance dedicated to utilities/catering external personnel.

### School rooms/offices/gyms/restaurant/ toilets/library etc.

Fortification of doors to withstand an attack with an assault weapon. Fortification of ground windows to withstand vandalism. Doors are



locked the moment the alarm is activated. The door should have a digital door viewer or a digital doorbell enabling teachers to see who is outside.

### Corridor barrier

Fortified doors in the corridors and other strategic places that when closed will forbid access to other parts or floors of the school.

### First aid kit in the classroom

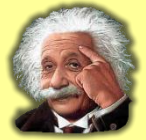
Equipped with modern first aid materials (i.e., QuikClot/Celix; hemostatic tourniquets/Asherman chest seals) will help survive a gunshot until paramedics arrive on site. Basic BLS training is required (could be a teacher or students or the entire class). Solar panels can provide independence from the power grid in case of a deliberate blackout – could be on the roof or purpose-only in every class.

### Guns at school

It depends on the school/State policy. ■

●► [December 2013 issue](#) (scroll down, left column) | one pdf file + 2 ppts





## Woke concepts creeping into science? Gender activists push to stop anthropologists from marking human remains as 'male' or 'female'

Source: <https://www.opindia.com/2022/07/woke-concepts-gender-activists-stop-anthropologists-from-marking-human-remains-as-male-or-female/>

July 19 – The woke culture is starting to affect science. Anthropology can be defined as the study of humanity using applications of biology, cultural studies, archaeology, linguistics, and other social sciences. Using different methods, anthropologists provide a deeper analysis of the human remains and sketch a possible history of humans.

When archaeologists find any human remains, their first aim is to determine several traits, including age, race and gender. It helps in creating a proper map of history. However, the woke culture that is gripping the education system at an unprecedented pace is now questioning the gender assigning techniques used by archaeologists.

Several experts, including archaeologists, anthropologists, and even criminal forensic detectives, use several markers such as the size and shape of the bones to determine if the human remains were of a male or a female. The aspect of biological gender is crucial to the study of the remains because it provides essential details of the anatomy and socio-cultural aspects of the subject under study. However, gender activists are now reportedly [arguing](#) that it is not possible to determine by the bones how an ancient person “identified themselves”.

Last week, Canadian Master’s degree candidate Emma Palladino [wrote](#) a Twitter thread on the matter and sparked controversy. She is pursuing an advanced degree in archaeology. That means it is possible that in the near future, she will be working on archaeological projects, and her “findings” may find their way into the history books forever. Notably, she locked her profile after her thread started gaining traction on social media. OpIndia found her thread on Archive.org, and here is what she has suggested.

In a 10-Tweet long [thread](#), she called the methodology used by the archaeologists to determine the sex of the human remains “stupid”. She claimed that the archaeologists are “acutely aware of how culturally and spatially relative the concepts of sex, gender, and identity are. While a bioarchaeologist might identify a set of remains as “probably female”, it is understood that the gender of an individual is never necessarily the same as their sex, and that gender is a whole spectrum we’ve barely begun to unpack.”

Essentially, the woke concepts of ‘gender identity’ are being brought into scientific studies that rely on actual scientific facts, that humans are either male or female. Biological sex is determined by one’s chromosomes and is reflected accordingly in physical appearance. Females have XX chromosomes and males have XY chromosomes. No matter what gender a certain individual identifies with, the genes never change.

For [example](#), in Geoffrey Chaucer’s The Canterbury Tales from 1386, the singular “they” was used to describe someone’s features. Also, in Shakespeare’s Hamlet from 1599 “they” was used for describing singular persons.

She further argued, “Labelling remains “male” or “female” is rarely the end goal of any excavation, anyway. The “bioarchaeology of the individual” is what we aim for, factoring in absolutely everything we discover about a person into a nuanced and open-ended biography of their life.” Continuing her argument, she talked about gender-affirmation surgery.

She said, “For those who’ve medically transitioned or have had gender-affirming surgery, there’s also that to consider. It’s still unknown how long-term use of things like HRT or estrogen might be visible in the bones, but you’d be surprised just how much our bones retain of our lives. (But for those who haven’t, as I said earlier, the bioarch of the individual is about surmising nuanced life stories and not about assigning rigid + arbitrary genders to skeletons).” Interestingly, as per records, the first [gender-affirmation surgery](#) was done in 1917. It is just over 100 years old, and interestingly, the woke propagandists want to use such surgeries as the base for interfering in the determination of a skeleton based on birth sex.

### How ‘gender activists’ are working hand-in-hand to propagate their agenda

Palladino is not the only one who is propagating to change the way forensic experts identify human remains. A group named Trans Doe Task Force [comprises](#) gender activists who are exploring ways “in which current standards in forensic human identification do a disservice to people who do not clearly fit the gender binary.”

In its mission statement, the group says, “We propose a gender-expansive approach to human identification by combing missing and unidentified databases looking for contextual clues such as decedents wearing clothing culturally coded to a gender other than their assigned sex. We maintain our own database of missing and unidentified people who we have determined may be Transgender or gender-variant, as most current database systems do not permit comparison of missing to unidentified across different binary sex categories.”

Furthermore, Associate Professor Jennifer Raff of the University of Kansas published a paper in February 2022 titled “Origin: A Genetic History of the Americas”, in which she argued that the division



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between physically or genetically ‘male’ or ‘female’ individuals was not possible. She suggested it was impossible to determine the gender of a 9,000-year-old Peruvian hunter as no one knows how “that person identified themselves”. She further argued that the dual-gender system was imposed by Christian colonizers.

There are several “experts” in the field that want to change the way sex is determined in archaeology, anthropology and forensic sciences, so human history gets in sync with their agenda. However, while doing so, they are creating a barrier for the scientists to do their work properly and efficiently. Just imagine a scenario where a forensic analyst examining an unknown person’s body won’t be allowed to say whether the victim of a crime was male or female, or an anthropologist working on old skeletons won’t be allowed to say whether the bones belonged to a woman or a man.

### The Ukraine war’s gifts to North Korea

Source: <https://asiatimes.com/2022/07/the-ukraine-wars-gifts-to-north-korea/>

July 21 – Militaries around the world are keenly following events in Ukraine, where a Western-supported defender is facing a massed, multi-dimensional Russian assault.

Strategies and tactics, weapons and technologies, are being put to the harshest test in a brutal contest of blood, gold, iron and will. Lessons are being drawn by politicians and diplomats, scientists and engineers, generals and corporals.

Half a world away, quivering pundits have fretted that if Russian President Vladimir Putin prevails in Ukraine, Xi Jinping might be encouraged to launch a Chinese invasion of Taiwan.

Less attention has been paid to the lessons North Korea’s Kim Jong Un might be drawing from the conflict, in the event he ever seeks to – or feels compelled to – ignite Korean War II.

For decades, that possibility looked remote – even ridiculous. Now, however, it is not so easily dismissed.



North Korean tanks on parade. While the world has focused on North Korea’s weapons of mass destruction, it is now rebuilding more tactical capabilities. Photo: AFP

#### Korean War, redux

For decades, South Korea’s survival looked firmly underwritten by its strength and North Korea’s weakness. How could North Korea, which failed to capture South Korea in 1950 when barely a handful



of US troops were deployed on the peninsula at the war's outset, hope to prevail against an alliance in full-on defensive mode, including 28,000 American GIs "ready to fight tonight?"

This analysis was buttressed by the precipitous plunge of North Korea's economy in the early 1990s. That left it unable to invest heavily in conventional forces. Instead, Pyongyang spent its dwindling national treasure forging a long-range nuclear deterrent to keep America at bay.

Pundits further comforted themselves with the analysis that the Kim regime would not risk its own survival with a major provocation. True, violence has simmered over the last two decades, ranging from deadly naval incidents to the shelling of an offshore island to DMZ clashes. But there seemed throughout little threat of a big new war.

Then came 2021. That year, following the failure of his high-profile dalliance with US President Donald Trump, North Korean leader Kim Jong Un publicly announced a massive new weapons-build.

Many of these weapons – drones, short- and mid-range rocket artillery and ballistic missiles, tactical nuclear warheads – are designed for use, not non-use. And they are ranged for close, not intercontinental operations.

Russian President Vladimir Putin's invasion of Ukraine has further spooked some, who fear that if Moscow's adventure in Eastern Europe is successful, it could encourage similar moves in East Asia.

### Strategic lessons, testing resolve

Strategically and diplomatically, North Korea stands to benefit – arguably, it already has – from the strife in distant Europe.

The most obvious lesson for Kim is Putin's dual-headed strategy of simultaneously war-fighting while deterring others from joining the fray. His method has been to ring-fence his conventional invasion by threatening nuclear use against any who dare to intervene. And so far, it has worked.

"North Korea is seeing how just some saber-rattling on the nuclear front has dominated the discourse on how to respond to Russian aggression," said Markus Garlauskas, a senior fellow with the Scowcroft Center for Strategy and Security and a former US National Intelligence Officer for North Korea.

"The North Koreans have also probably learned that you can keep a conflict limited," he continued during a panel discussion at last week's Asian Leadership Conference (ALC) in Seoul. "They can focus significant aggression and not have it develop into a [wider] conflict."

Ukraine was neither a member of NATO nor a US treaty ally. South Korea enjoys a mutual defense treaty with the US and has US troops based on its soil. Even so, a matter that is much debated among pundits – though not (at least, not publicly) by politicians – is the stickiness of US commitment in the face of a potential kinetic crisis.

Some worry that Washington would weigh its treaty obligation to Seoul against the risk of losing one or more American cities to North Korean nuclear strikes, and back down. Hence, Pyongyang will likely be watching Ukraine as a test of US will.

"If Ukraine falls or compromises, then China or North Korea can use that case as a narrative...that Taiwan or South Korea cannot rely on US resolve," Cho Sung-min, a professor of the College of Security Studies at the Daniel K. Inouye Asia-Pacific Center for Security Studies, and also a speaker at the ALC, said.

### Diplomatic win, material possibilities

With the Ukraine war broadening the global cleavage in geopolitics – one that pits the "Global North" (the Anglosphere, the West, and US-allied Japan and Korea) against an emergent China-Russia partnership – North Korea has already benefitted diplomatically.

"The Chinese and Russians have basically knee-capped the UN Security Council in terms of North Korea," said Victor Cha, another ALC speaker.

He was referring to Beijing and Moscow's May 26 veto of a US-drafted resolution to sanction North Korea for its extensive program of missile tests – 31 so far this year. That veto shattered the prior unanimity among the UN Security Council's permanent members regarding North Korea's weapons of mass destruction.

Pyongyang did not take long to repay Moscow. On July 13, it became the third country on earth – after Russia and Syria – to recognize the pro-Russian, breakaway Ukrainian republics of Donetsk and Luhansk.

"Recognizing the breakaway republics speaks of the willingness of North Korea to be part of the bifurcated system emerging in Northeast Asia," Cha, the senior vice president for Asia at Washington-based think tank CSIS, continued.

Future benefits for North Korea may be material as well as diplomatic. North Korea likely sees "a lot of opportunities in Russia, be they coming in the form of energy, or future cooperation in missile technologies," Cha said.

North Korea's missile programs, from rocket artillery to ballistic, are heavily based on Russian originals, designs and components.



Moscow remains committed to its Far East despite the challenges it is encountering in Ukraine.

There are multiple indications that the Kremlin, fighting an expeditionary war exclusively with professional soldiers, is facing manpower overstretch. It has already deployed depot battalions – usually used for training, reinforcement and rear-area duties – to active service at the front. It is currently raising volunteer battalions nationwide.

However, with Russia's two-headed eagle facing both west and east, it maintains significant assets in the Russian Far East. Since the Ukraine war started, it has conducted joint air and naval drills with Chinese forces in the East China Sea.

"Russia maintains a military presence in East Asia and it is not distracted from East Asia," said Cho. "That sends a strong signal to Kim Jong Un that he has a friend if needed."

So far, so clear. With its key partners strengthening their united front against the US-led West, North Korea is likely to be drawn closer to their bosom, with related benefits.

But Pyongyang's tactical learnings from the combat arena are likely to be more nuanced – and more troubling.

### Flawed invasion

North Korea has taken not just much of its kit, but also much of its doctrine, from the USSR and Russia. Moscow's offensive doctrine prioritizes combined-arms, heavily armored, deep-penetration maneuver war.

"Classic Soviet doctrine wise – and according to North Korea doctrine – yes, that is exactly how they would conduct a conventional attack," Chun In-bum, a retired South Korean general told Asia Times.

Indeed, Russian officers planned Pyongyang's 1950 invasion of South Korea using these very tactics. But Russia's vaunted armored assault has borne bitter fruit in Ukraine.

In Phase 1 of their "special military operation," Russian columns were contained and ambushed on Ukraine's road net: They could not maneuver off-road due to the spring thaw, which turned soil to mud.

Russian troops also found themselves forced to fight in urban areas – a key force multiplier for defenders – in the suburbs of Kiev, Kharkiv, Chernihiv and elsewhere.

Pyongyang generals will have observed that "a major, broad-front offensive in the face of determined resistance is very difficult to make progress," said Garlauskas.

And for Kim's war planners, any southward attack is complicated by problems the Russians did not face.

Firstly, unlike the vastness of Ukraine, the Korean peninsula lacks strategic width, which necessarily channels any north-south attack.

Secondly, lacking large-scale airborne or seaborne assets, North Korea's main ground force would have to punch through the massively fortified DMZ. That would be murderous, to say the least. However, there is an asymmetric solution: invalidate the DMZ by infiltrating under it using tunnels. "In South Korea, there are tunnel experts who think they could extend 10 kilometers south of the border, some say 200 kilometers, and some say they have reached [southern port city] Busan!" Chun said. "But everyone agrees there are tunnels." Four have been discovered. Their estimated capacities are formidable: They could funnel 30,000 troops, carrying personal kit and light crew-served weapons, per hour. Even so, once through or under the DMZ, any attack would follow predictable axes. The terrain of the Korean peninsula is mountainous in the east, meaning the key lines of communication are in the west. So, too, is the capital, just 30 miles south of the DMZ. The key invasion routes into Seoul are the Munsan and Uijongbu corridors. Both are north-south expressways dominated by the cities that bear their names.

And as was the case in early-phase Ukraine, in Korea asphalt will be at a premium: Off-road maneuver is seasonally obviated by waterlogged rice fields. And the roads passing through and beside cities would have to be taken so that second-echelon forces could advance. The problem for North Korea is that the towns and cities north of Seoul – dominated by high rises, and home to millions – form a defensive carapace. Their capture would consume time that Washington could utilize to marshal its counterattack forces.

For these various reasons, North Korea would almost certainly do things differently, experts and analysts say.

"They are going to be focusing on use of fire and other capabilities to achieve their goals," said Garlauskas.

Chun agreed. "Because North Korea would have the initiative, they would probably focus on [eliminating] our command and control, our airbases and our ports, as well as our missiles," he said.

That would mean special operations missions, cyber assaults and a massive storm of firepower during which North Korea's fearsome artillery arm – tube and rocket – would be given full play.

But big questions hover over how effective North Korea would be at high-tech, network-centric operations.

●► *In Part II of this story, Asia Times will examine the kind of tactical learnings North Korea may be drawing from Ukraine in terms of the use of firepower, targeting and command and control.*



## Turkish Rockets Massacre Tourists in Iraq - An Explanation

By Seth J. Frantzman and Tzvi Joffre

Source: <https://www.meforum.org/63399/turkish-rockets-massacre-tourists-in-iraq>

July 20 – At least nine civilians were killed and dozens of others were wounded after rockets were fired reportedly by the [Turkish military](#) towards a number of tourist sites in the Duhok Governorate of the Kurdistan Region of Iraq on Wednesday.



Videos reportedly from the scene showed people running and screaming as explosions could be heard in the background. Additional footage showed injured people laying in the back of trucks, as well as large crowds outside local hospitals.

### Turkish killing of tourists a major escalation

In the summer heat it is common for many Iraqis to vacation in the stable and peaceful Kurdish region. The region has beautiful mountains and streams. Prior to the war against ISIS in 2014, the Kurdistan region was considered a huge center of tourism. When the war ended in 2017 and after some disputes with Baghdad, it again became a major center of tourism. Ankara's attacks

destabilize the area and cause panic. Ankara's attacks not only target Kurds, but also minority Christians and Yazidis; and now it appears to have also killed tourists.

The killing of the tourists marks a [major escalation](#). This is because often when Ankara attacked Kurdish villages, claiming to fight "terrorists" there was impunity because of discrimination against Kurds in the region. US officials were wary to condemn Ankara because it is considered a "NATO ally." Turkey has recently tried to make it difficult for Sweden and Finland, two democracies, to join NATO. Turkey is considered one of the world's largest jailor of journalists. The ruling far-right party in Ankara has become increasingly authoritarian and has roots in the Muslim Brotherhood.

Turkey's president met this week with Iran's president and also Russia's Vladimir Putin. It could be that the bombardment of the civilians is an escalation linked to the fact that Ankara believes it can get away with these kinds of attacks. Turkey knows that the Assad regime, backed by Russia and Iran, has massacred civilians in similar bombardments, and that Russia has done the same in Ukraine. This could be a symbol of how Ankara views the "new world order" that Iran has been talking about, a world without human rights safeguards. The tourists may be the collateral damage and victims of the new Iran-Turkey-Russia partnership that was cemented this week.

In the wake of the attack Turkey has threatened US forces in Syria. Turkey's Anadolu news said "The US needs to withdraw its forces from regions of Syria east of the Euphrates River." In addition Turkey's president said that "America has to leave east of the Euphrates now. This is an outcome that came out of the Astana process." Turkey says it expects the US to leave and accused the US of "feeding" terrorist groups. Ankara has accused the US of supporting terrorists for years. Ankara also demands the US sell it more F-16s. Ankara invaded Syria's Afrin and ethnically cleansed it of Kurds and Yazidis in 2018 and in 2019 ordered the US to withdraw from part of eastern Syria. The Trump administration agreed to part of Turkey's requests. The Biden administration has asked Turkey not to launch another invasion. Iraqi sources will watch carefully how the US responds to the attack in northern Iraq, and Syrians will see if the US will stand by the SDF group it supports in eastern Syria.

Turkey has long been a harsh critic of Israel and accused Israel of harming civilians in previous conflicts with Hamas in Gaza. Ankara's own actions in Iraq show that while it condemns Israel, it often acts with impunity when fighting amongst civilians.

### Scene of the attack

Some of the injured were children and all of the casualties were Arab tourists, according to the Kurdish news site Rudaw. The mayor of Zakho, Muhsin Bashir, told Rudaw that a village in the district was



bombed by Turkey twice, adding that Turkey was claiming that members of the Kurdistan Workers' Party (PKK) "were roaming the village, which led Turkey to bombard it."

### **Iraqi officials condemn Turkish strikes**

Iraqi Prime Minister Mustafa Al-Kazemi sent the country's foreign minister and security delegation to the site of the bombardment in order to investigate the incident and visit the wounded.

Kazemi condemned the strikes on Wednesday afternoon, saying "Turkish forces again committed a clear and flagrant violation of Iraqi sovereignty and the lives and security of Iraqi citizens."

The Iraqi prime minister warned that Iraq reserves the "full right" to respond to the Turkish strikes, adding that "it will take all necessary measures to protect its people, and hold the aggressor party to bear all the consequences of the ongoing escalation."

"While Iraq appreciates and adheres to the principles of good neighborliness and categorically rejects the use of its lands by any party to attack its neighbors, it rejects, on the other hand, the use of security justifications to threaten the lives of Iraqi citizens and attack the territory of Iraq, which is considered a repudiation of the principles of good neighborliness, international agreements, relations and joint cooperation," added Kazemi.

Iraqi Shi'ite political leader Muqtada al-Sadr proposed a number of steps for the Iraqi government to take against Turkey in response to the attack, including reducing diplomatic relations with Turkey, closing airports and land crossings between the two countries, filing a complaint with the United Nations and cancelling the existing security agreement with Turkey.

### **Iraqi government summons Turkish ambassador, withdraws Charge d 'Affairs**

During a meeting of the country's National Security Council on Wednesday evening, the council directed the Iraqi Foreign Ministry to summon the Turkish ambassador to Iraq, withdraw the Iraqi Charge d 'Affairs from Ankara and halt the procedures for sending a new ambassador to Turkey.

The council directed the Joint Operations Command to submit a report on the situation along the Iraqi-Turkish border and to "take all necessary steps for self-defense." The council additionally demanded that Turkey submit an official apology and withdraw its military forces from all Iraqi territory.

The Iraqi prime minister ordered the preparation of a comprehensive file of the "ongoing Turkish violations" to be submitted to the United Nations Security Council.

### **Iraqi citizens protest against Turkey**

Hundreds of Iraqis protested in multiple locations across the country after the attack, stomping on and burning Turkish flags and conducting demonstrations in front of the Turkish Embassy in Baghdad.

Protesters skirmished with security forces in front of a Turkish visa office in Karbala, according to Iraqi reports.

### **Turkey denies it was behind the bombardment**

The Turkish Foreign Ministry denied that it was behind the attack and claimed that it had "originated from a terrorist organization" in an apparent reference to the PKK.

"Turkey is ready to take every step to reveal the truth. We invite Iraqi government officials not to make statements under the influence of the rhetoric and propaganda of the treacherous terrorist organization and to cooperate in revealing the real perpetrators of this disastrous incident," added the Foreign Ministry. "Turkey carries out its fight against terrorism in accordance with international law, with the utmost sensitivity to the protection of civilians, civilian infrastructure, historical and cultural assets and nature."

The Foreign Ministry expressed its condolences to the Iraqi people and wished a speedy recovery to the wounded.

**Seth Frantzman** is a Ginsburg-Milstein Writing Fellow at the Middle East Forum and senior Middle East correspondent at *The Jerusalem Post*.

## **US forces must leave areas of Syria east of Euphrates River: Turkish president**

Source: <https://www.aa.com.tr/en/turkiye/us-forces-must-leave-areas-of-syria-east-of-euphrates-river-turkish-president/2641610>

July 20 – The US needs to withdraw its forces from regions of Syria east of the Euphrates River, as part of the Astana peace process for Syria, the Turkish president said Wednesday.







"America has to leave east of the Euphrates now. This is an outcome that came out of the Astana process," said Recep Tayyip Erdogan, one day after an Astana process summit with the Russian and Iranian presidents, stressing that his Astana partners agree with this judgement.

**"Türkiye expects this as well because it is America that feeds the terrorist groups there,"** Erdogan told reporters en route back to Türkiye, referring to the terror group YPG/PKK, which the US has partnered with on the pretext of fighting Daesh/ISIS terrorists.

Reiterating the possibility of another Turkish anti-terrorist operation across its southern border into northern Syria, following other successful operations in recent years, Erdogan said a new operation will be on the table as long as Ankara's longstanding concerns have not been met.

**"You see that the American (military) staff there train members of the terrorist organization (YPG/PKK),"** he continued.

"During this training, they are waving the flag of the regime there. Why?"

He added: "Their job is to commit a terrorist act against the Turkish soldiers there. Here, too, they think if they are deceiving the Turkish army by waving the regime's flag there. We won't be fooled."

YPG/PKK terrorists periodically attempt to attack Turkish troops in opposition-held northern Syria, soldiers stationed there to keep peace along the border and protect locals from terrorist domination.

Türkiye has long criticized the US working with the YPG/PKK supposedly against Daesh/ISIS, saying that using one terrorist group to fight another makes no sense.

The PKK is listed as a terrorist organization by Türkiye, the European Union, and the US, and is responsible for the deaths of 40,000 people, including women, children, and infants. The YPG is the terrorist PKK's Syrian branch.

**EDITOR'S COMMENT:** Once upon a time there was a mighty country called United States of America...





# T - NEWS

## West Yorkshire right wing terror cell who had chemical factory and 3d-printed gun jailed

Source: <https://www.itv.com/news/calendar/2022-06-23/right-wing-terrorists-who-had-chemical-factory-and-3d-printed-gun-jailed>



June 23 – Four members of a [West Yorkshire](#)-based right wing terror cell who advocated racist violence and the manufacture and possession of weapons have been jailed.

Daniel Wright, Liam Hall, Stacey Salmon and Samuel Whibley were [found guilty of a combined total of eighteen offences following a trial at Sheffield Crown Court](#).

During the eleven-week trial, the jury heard how the defendants came together in a private online chat group to share extreme right-wing views and propaganda, influence and indoctrinate others and endorse the use of violence.

They were caught after being exposed by an undercover police officer.

Following their arrest in May 2021 by Counter Terrorism Policing North East, a partially constructed 3D printed firearm was recovered from the home of Hall and Salmon in [Keighley](#), West Yorkshire.



Police uncovered a partially created 3D printed gun.  
Credit: Counter Terrorism Police North East

Examination by a specialist confirmed that, despite being incomplete, the weapon could have proved lethal if fully assembled.

Other weapons were also recovered from the homes of the defendants, in addition to chemicals, practical guides for making explosives and extreme right-wing texts and videos.

Daniel Wright, 30, of Whinfield Avenue, Keighley, was found guilty of seven offences including manufacturing a firearm. He was jailed for 12 years.

Liam Hall, 31, of Hill Top Walk, Keighley, was found guilty of manufacturing a firearm and possessing a firearm and was jailed for six years.

Stacey Salmon, 30, also of Hill Top Walk, was found guilty of possessing a firearm and was sentenced to three years.

Chemicals and guides to making explosives were found. Credit: Counter Terrorism Police North East

Samuel Whibley, 29, of Derwen Deg, Menai Bridge, Anglesey, was found guilty of eight terrorism offences including encouraging terrorism and disseminating a terrorist publication encouraging terrorism. He was jailed for 10 years.

Temporary Det Chief Supt Peter Craig said:

"We work tirelessly to identify individuals who have an extremist mindset and threaten the safety and unity of our diverse communities.

"Anyone found to be engaging in terrorist activity, or violent extremism in any form, can expect to be identified and put before the courts."



## Firearms: Weapons of Choice for Domestic Extremists

Source: <https://www.homelandsecuritynewswire.com/dr20220624-firearms-weapons-of-choice-for-domestic-extremists>

June 24 – Every year, extremists overwhelmingly use guns to carry out their deadly attacks. In any given year, more people are killed by extremists who use firearms than those who choose any other weapon. In fact, over the past decade, shootings accounted for 75 percent of the deaths at the hands of extremists.

That trend continues in 2022. In May, a [racially or ethnically motivated violent extremist \(RMVE\) armed with an assault rifle](#) and wearing body armor killed 10 people and wounded three more inside a Buffalo, New York, supermarket. In March, an alleged member of the [Aryan Brotherhood shot](#) a Pinal County Arizona, sheriff's deputy responding to a trespassing call. In February, a far-right extremist in Oregon used a [handgun to fire](#) on a group of racial justice demonstrators, killing one person and wounding five others. In January, an Islamist extremist used a [semi-automatic handgun](#) to hold four people hostage for 10-hours at a Texas synagogue, and an anti-government extremist [using a stolen semi-automatic handgun](#) with an extended magazine ambushed and killed two New York City police officers.

### Analysis of Firearm Use by Extremists

The ADL Center on Extremism documented 187 incidents from 2012-2021 in which extremists used firearms to commit murder or violently engage with law enforcement. During these incidents, extremists killed 325 people and wounded 252.

To determine the most commonly used and deadliest firearm types, the assaults were grouped by incidents in which the extremist(s) used a handgun, a military-style assault weapon, a shotgun, a rifle or multiple weapons. In 32 of the incidents the type of weapon(s) used remains unknown. To determine the number of casualties by weapon type, we also calculated the number of people killed and wounded in each incident. The following COE analysis presents the data from the most lethal weapon type to the least.

Averaging 5.4 fatalities per incident, the deadliest incidents are those in which extremist(s) used multiple weapons — various combinations of handguns, military-style assault weapons, shotguns and rifles. In these 22 incidents, 119 people were killed and 122 were wounded (accounting for 42 percent of all casualties).

### Ideology Drives Extremist Violence

Notably, fourteen of the 22 multi-weapon incidents involved extremists engaged in ideologically driven attacks against their perceived enemies. This includes, for example, the December 2019 antisemitic [attack on the Jersey City Kosher Market](#) that left four people dead and three wounded. In the aftermath, police found five firearms belonging to the attackers, including an AR-15 style weapon, a shotgun, and three handguns. It also includes the October 2018 [shooting spree at the Tree of Life synagogue](#) in Pittsburgh, in which the suspect used an assault rifle and three handguns to kill 11 people and wound six others. In yet another example, anti-abortion extremist [Robert Dear](#) killed three people at a Colorado Springs Planned Parenthood Clinic in November 2015, armed with eight firearms, including four Soviet-style SKS semi-automatic rifles, two handguns, another rifle and a shotgun.

There were 19 incidents in which the extremist used a single military-style assault weapon. With 62 victims killed (an average of 3.26 fatalities per incident) and 60 more wounded, these attacks were also very deadly (21 percent of all casualties). The high average of fatalities per incident in this data set is driven largely by two significant mass shootings, the August 2019 [mass shooting targeting the Latino community at a Walmart in El Paso](#), Texas, that left 23 dead, and the February 2018 [school shooting in Parkland, Florida](#), which left 17 dead.

### Handguns Remain Popular

In more than half of the cases (at least 96 of the 187 incidents or 51 percent), extremists used a single handgun. Accounting for 101 fatalities, an average of 1.04 murders per incident, these incidents were far less lethal than those in which the extremist(s) used multiple weapons or a single military-style assault weapon. Despite the lower average, there have been incidents in which extremists used handguns to attack soft targets resulting in high death tolls. In 2012, six people were killed and three wounded when a racist skinhead armed with a semi-automatic handgun attacked the [Sikh Temple in Oak Creek](#), Wisconsin. And in 2015, RMVE Dylann Roof used a handgun to murder nine congregants at the [Emanuel African Methodist Episcopal Church](#) in Charleston, South Carolina. To a much lesser degree, extremists also used shotguns (15 incidents) and rifles (3 incidents). Most of these incidents occurred while extremists were engaged in non-ideological criminal activity, were avoiding arrest, or reacted violently to the service of search or arrest warrants at their home.

In this case study, at least 10 extremists wore some sort of body armor, seven of whom were conducting planned attacks against their perceived enemies. For example, in 2014, anti-government



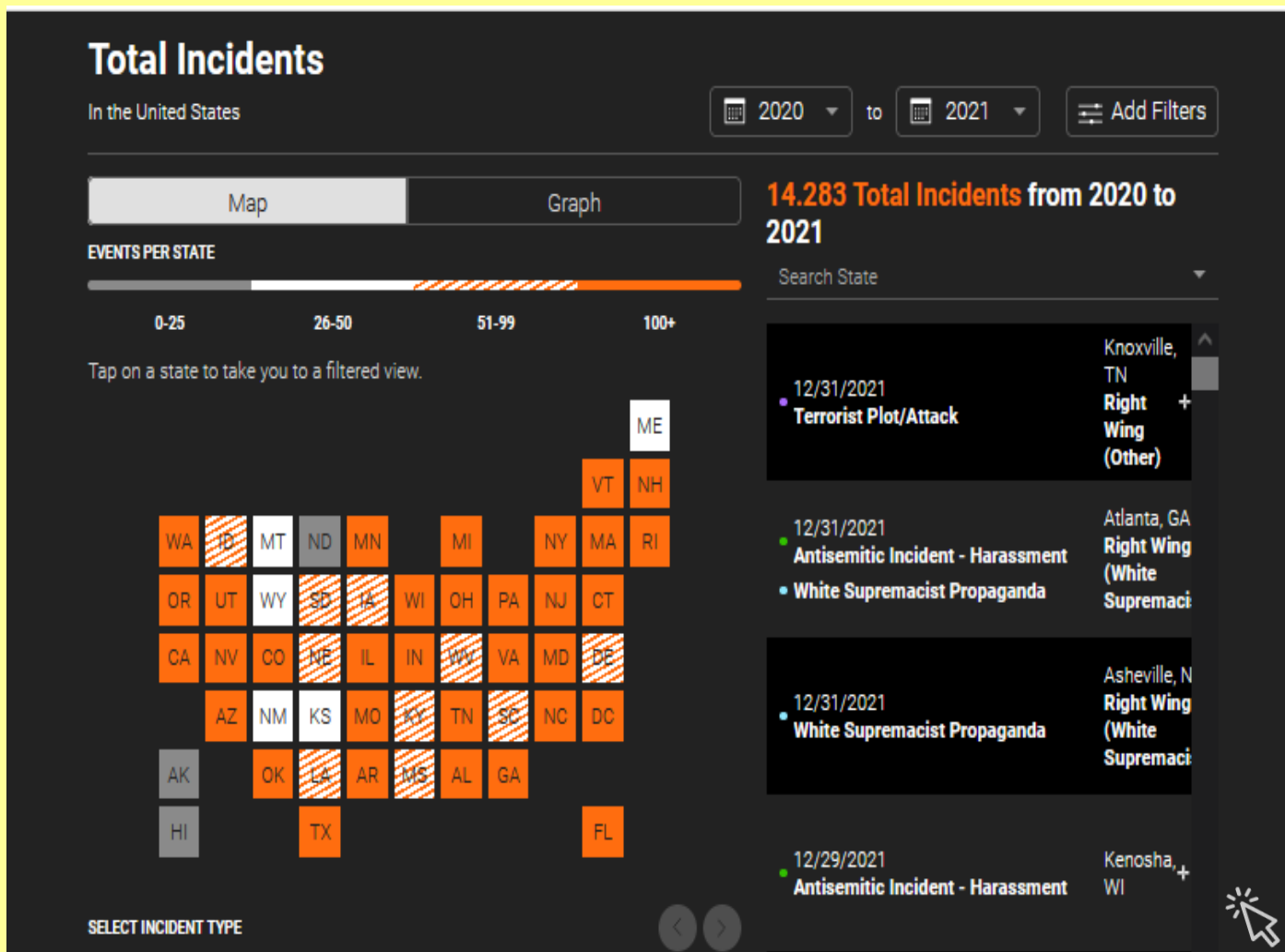
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extremist [Jerad Miller](#), who along with his wife ambushed and killed two police officers in Las Vegas, Nevada, wore a protective vest during a subsequent shootout with police in a Walmart. And, in 2017, eco-terrorist [James Marker](#) wore a ballistic vest as he fired a high-powered rifle at a natural gas pipeline construction site in Florida.

### Additional Terrorist Plots and Attacks Involving Firearms

In addition to the 187 incidents in which extremists used firearms to commit murder or violently engage with law enforcement, they also engaged in other plots and attacks that include the use of firearms. From 2012-2021, there were at least 52 cases in which police disrupted terrorist plots, including nine cases in which the extremist's plans included a mass shooting. In 38 of those cases, the extremists possessed firearms at the time of their arrest, and 26 of them faced charges that included weapons violations.

Though no one was killed, and they did not exchange gunfire with law enforcement, five extremists were able to advance their terrorist plots beyond the planning phase and attack their perceived enemies. In May 2020, Islamist extremist [Adam Aalim Alshahli](#), armed with a handgun and military-style assault weapon, was killed after he opened fire on the guards at the entrance to Naval Air Station-Corpus Christi. Also armed with assault rifles, left wing extremist [Willem Van Spronsen](#) attacked a privately-owned ICE detention center in 2019, and [Armando Hernandez Jr.](#), an adherent of the [misogynistic incel subculture](#), targeted couples during a 2020 shooting spree at an Arizona shopping mall. In 2015, [Allen Scarsella](#) shot five "Black Lives Matter" demonstrators in Minneapolis and in 2012 left-wing extremist [Floyd Corkins](#) opened fire at the offices of the Family Research Council. Both men used semi-automatic handguns.



► For more information on these incidents and others, [ADL's H.E.A.T. Map](#) provides a visual representation and details related to extremist murders, terrorist plots & attacks and extremist/police shootouts.



## Norway shaken by attack that kills 2 during Pride festival

Source: [https://www.washingtonpost.com/world/norwegian-police-say-2-killed-in-mass-shooting-in-oslo/2022/06/24/175d416a-f434-11ec-ac16-8fbf7194cd78\\_story.html](https://www.washingtonpost.com/world/norwegian-police-say-2-killed-in-mass-shooting-in-oslo/2022/06/24/175d416a-f434-11ec-ac16-8fbf7194cd78_story.html)

June 25 — A gunman opened fire in Oslo's nightlife district early Saturday, killing two people and leaving more than 20 wounded in what the Norwegian security service called an **"Islamist terror act"** during the capital's annual LGBTQ Pride festival.

Investigators said the suspect, identified as a **42-year-old Norwegian citizen originally from Iran**, was arrested after opening fire at three locations in downtown Oslo.

**Police said two men, one in his 50s and the other his 60s, died in the shootings. Ten people were treated for serious injuries**, but none of them was believed to be in life-threatening condition. Eleven others had minor injuries.

**The Norwegian Police Security Service raised its terror alert level from "moderate" to "extraordinary" — the highest level — after the attack, which sent panicked revelers fleeing into the streets or trying to hide from the gunman.**

The service's acting chief, Roger Berg, called the attack an "extreme Islamist terror act" and said the suspect had a "long history of violence and threats," as well as mental health issues.

He said the agency, known by its Norwegian acronym PST, first became aware of the suspect in 2015 and later grew concerned he had become radicalized and was part of an unspecified Islamist network.

Norwegian media named the suspect as Zaniar Matapour, an Oslo resident who arrived in Norway with his family from a **Kurdish part of Iran in the 1990s**.

The suspect's defense lawyer, John Christian Elden, said his client "hasn't denied" carrying out the attack, but he cautioned against speculation on the motive.

"He has not given any reason. It is too early to conclude whether this is hate crime or terrorism," Elden said in an email to The Associated Press.

Upon the advice of police, organizers canceled a Pride parade that was set for Saturday as the highlight of a weeklong festival. Scores of people marched through the capital anyway, waving rainbow flags.

Police attorney Christian Hatlo said it was too early to say whether the gunman specifically targeted members of the LGBTQ community.

"We have to look closer at that, we don't know yet," he said.

Police said civilians assisted them in detaining the man in custody, who was being held on suspicion of murder, attempted murder and terrorism, based on the number of people targeted at multiple locations.

Investigators seized two weapons after the attack: a handgun and an automatic weapon. Hatlo described both as "not modern" but did not give details.

Not far from Oslo's cathedral, crime scene tape cordoned off the bars where the shootings took place, including the London Pub, which is popular with the city's LGBTQ community.

Crowds gathered outside and dropped off cards and flowers at impromptu memorials.

Norwegian Prime Minister Jonas Gahr Stoere called the shooting a "cruel and deeply shocking attack on innocent people."

He said that while the motive was unclear, the shooting had caused fear and grief in the LGBTQ community.

"We all stand by you," Gahr Stoere wrote on Facebook.

Police said the suspect had a criminal record that included a narcotics offense and a weapons offense for carrying a knife.

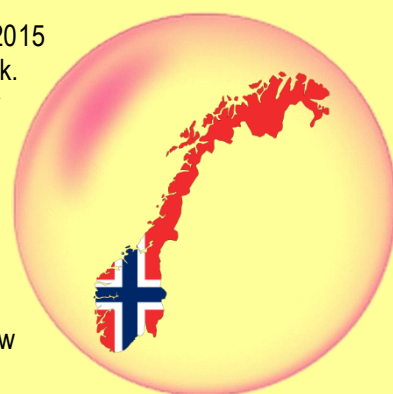
**PST said it spoke to him in May this year "because he had shown a certain interest in statements that were interpreted as insults to Islam."**

"In these conversations, it was assessed that he had no intention of violence, but PST is aware that he has had challenges related to mental health," the agency said in a statement.

Organizers of Oslo Pride canceled the parade and other scheduled events, and encouraged "people all over Norway to show solidarity" in their homes, neighborhoods and on social media instead.

"We'll be back later, proud, visible, but right now it's not the time for that," Inge Alexander Gjestvang, leader of FRI, a Norwegian organization for sexual and gender diversity, told TV2.

Like its Scandinavian neighbors, Norway is considered progressive on LGBTQ rights. There is widespread support for same-sex marriage, which was legalized in 2009. In 2016, Norway became one of the world's first countries to allow transgender people to legally change their gender without a doctor's agreement or intervention.



Norway has a relatively low crime rate but has experienced a series of so-called lone wolf attacks in recent decades, including one of the worst mass shootings in Europe. In 2011, a right-wing extremist killed 69 people on the island of Utoya after setting off a bomb in Oslo that left eight dead.

In 2019, another right-wing extremist killed his stepsister and then opened fire in a mosque but was overpowered before anyone there was injured.

Last year, a Norwegian man armed with knives and a bow and arrow killed five people in a town in southern Norway. The attacker, who was diagnosed with schizophrenia, was sentenced Friday to compulsory psychiatric care.

**EDITOR'S COMMENT:** (1) The unexpected always happens even in countries living in their own bubble! (2) It is sad, that the word "pride" has become synonymous with the acronym "LGBTQ". (3) If an incident like this happens when the alert level is "moderate" then levels should be reconsidered and individuals like the arrested terrorist should be expelled well before attacking the society. Again too much democracy is bad for public health and stability. **UPDATE June 27:** Norwegian Secret Service had terrorist Zaniar Matapour under surveillance since 2015 because he belonged to an Islamist extremist network. Later on, they cancel surveillance! Congrats!

## Perspectives on Terrorism

Volume XVI, Issue 3 | June 2022

Source: <https://www.universiteitleiden.nl/perspectives-on-terrorism>



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Leiden

The current issue features four **Articles**. The first, by *Eylem Kanol*, is based on a large database of European foreign fighters and explores how and where they were radicalised. The second article by three Indonesian scholars – *Iwa Maulana, Dewi Indriana, and Gatot Goei* – explains how their country tries to cope with high-risk extremists in its prison system. The third article, by *Robert F. Kelly and Dean C. Alexander*, compares an American non-political mass shooting with a political one in terms of pre-attack variables (e.g., leakage) that can play a role in future prevention. Finally, *Adib Abdulmajid* examines incitement in a comparative perspective by exploring how one Shi'ite and one Sunni extremist group instrumentalize religion for their recruitment drives.

The **Resources** section features our regular CT-Bookshelf, with ten short reviews by our book reviews editor, *Joshua Sinai*. This is followed by two longer reviews of recent books by *Alisa Stack*. Our information resources editor, *Judith Tinnes*, offers an extensive bibliography on Islamophobia while *David Teiner* provides a bibliography on the conflict in Yemen. *Berto Jongman* contributes another of his wide-ranging surveys of recent online resources on terrorism and related subjects.

In **Announcements**, *Olivia Kearney* presents her regular "Conference Calendar", which includes the annual World Summit on Counter-Terrorism conference in September.

Finally, the **About Perspectives on Terrorism** section lists the people behind the journal and their tasks. The texts of the current issue of *Perspectives on Terrorism* have been selected and prepared by *James Forrest* and *Alex Schmid*, the journal's principal editors. Editorial Assistant *Jodi Moore* handled proof-reading, while the technical online launch of the June 2022 issue of our journal has been in the hands of our Associate Editor for IT, *Audrey J. Vrolijk* (ISGA, The Hague).

●► [Counter-Terrorism Bookshelf: 10 Books on Terrorism & Counter-Terrorism-Related Subjects](#)

Reviewed by [Joshua Sinai](#) (Book Reviews Editor of 'Perspectives on Terrorism').

●► [Recent Online Resources for the Analysis of Terrorism and Related Subjects](#)

Compiled and selected by Berto Jongman

**Berto Jongman** is Associate Editor of 'Perspectives on Terrorism'. He is a former senior Military Intelligence Analyst and currently serves as an International Consultant on CBRN issues. A sociologist by training, he previously worked for Swedish and Dutch civilian research institutes. Drs. Jongman was the recipient of the Golden Candle Award for his World Conflict & Human Rights Maps, published by PIOOM. He is editor of the volume 'Contemporary Genocides' (1996) and has also contributed to various editions of 'Political Terrorism', the award-winning handbook of terrorism research edited by Alex P. Schmid.



## The Future is Now: The Use of 3D-Printed Guns by Extremists and Terrorists

By Rajan Basra

Source: <https://gnet-research.org/2022/06/23/the-future-is-now-the-use-of-3d-printed-guns-by-extremists-and-terrorists/>



June 23 – Over the past three years, the [threat of extremists and terrorists](#) making 3D-printed guns has changed from a [hypothetical](#) to a realised scenario. Since 2019, there have been at least nine examples of extremists, terrorists, or paramilitaries making, or attempting to make, 3D-printed guns in Europe and Australia. This unprecedented surge in cases gives a glimpse of a future where such occurrences may become routine. While we have already seen [their proliferation among criminals](#), we are now witnessing extremists worldwide searching for, downloading, sharing, and manufacturing 3D-printed gun designs.

Analysis of these recent cases reveals four insights. First, 3D-printed guns have gained traction among the far-right—accounting for all but one case—with examples appearing in five countries. The only exception is a dissident republican paramilitary group in Northern Ireland. Jihadists, meanwhile, are noticeably absent. Second, many of these cases also involve attempts to make explosives, meaning that 3D-printed guns have supplemented—and not replaced—existing threats. Third, 3D printing is not a shortcut to acquiring a gun, as the process still involves considerable time and effort. It remains to be seen whether their arrival has shortened the attack planning process. Fourth, at least one extremist had joined the leading 3D printing gun forum, using it to obtain guidance on his firearms and explosives, seemingly unbeknown to its moderators.

### Nine Examples of Extremists Attempting to Make 3D-Printed Guns Since 2019

The nine cases vary in severity, from individuals possessing the CAD designs (which depending on the jurisdiction, can be illegal) to manufacturing and attempting to use them. All occur in countries where there are relatively strict gun laws: Australia, Germany, the Netherlands, Sweden, and the UK. The FGC ('Fuck Gun Control', available in either 9mm or .22 calibre) is the most prominent, featuring in at least five cases. The FGC-9 was first released in March 2020.

The nine cases are:

1. October 2019, Halle, Germany: Stephan Balliet, a 27-year-old white nationalist, [killed two people](#) using improvised homemade weapons. He posted his designs and manifesto online, stating his intention was to prove their "viability". His main gun had only a small, cosmetic 3D printed component (the trigger cover). Other firearms, such as a hybrid 3D-printed Luty submachine gun, had more.
2. August 2020, Paulton, UK: [Dean Morrice](#), a 33-year-old white nationalist, was arrested for attempting to make explosives and a 3D-printed gun. He had also shared Balliet's manifesto online. He was [convicted in June 2021](#).
3. September 2020, Santa Cruz de Tenerife, Spain: a 55-year-old, known only by his initials 'J.M.', was arrested for having a 3D printing gun workshop. [Police found](#) 19 3D-printed pistol frames, multiple melee weapons, and explosive precursors. He also had [over 30](#) far-right





documents and manuals on urban guerrilla warfare, alongside a holster with a Nazi symbol. It is unclear if he planned to sell or distribute the weapons to other like-minded extremists.

4. December 2020, Essex, UK: [Matthew Cronjager](#), a 17-year-old white nationalist, was arrested after trying to secure conventional firearms and 3D-printed guns (an FGC-9 and a Cheetah-9 Hybrid SMG) from an undercover police officer. He planned to kill a non-white friend, and was [convicted in September 2021](#).
5. May 2021, Keighley, UK: Three members of [a far-right cell](#) were arrested for [attempting to make a PG22](#), a rudimentary 3D-printed gun, as well as explosives. Daniel Wright, Liam Hall, and Stacey Salmon were [convicted in March 2022](#). Another man, Samuel Whibley, was convicted for sharing terrorist material, including gun designs, with them.
6. September 2021, Orange, NSW, Australia: A [26-year-old white nationalist](#)—who cannot be named here due to a non-publication order—was arrested after attempting to make an FGC-9. Although the maximum sentence was 14 years, he was given an [“intensive community corrections order with supervision for two years.”](#)
7. November 2021, Falköping, Sweden: 25-year-old [Jim Holmgren](#) was arrested for possessing explosive precursor material and 3D printed gun components. He was a former Nordic Resistance Movement (NRM) member. Police found far-right documents and a purported manifesto.
8. February 2022, Schouwen-Duiveland, Netherlands: A [33-year-old man](#) was arrested for making an FGC-9. He had also bought ammunition. Four Nazi flags were [found in his house](#), as well as a Flemish Movement flag.
9. April 2022, Belfast, Northern Ireland: Four members of Óglaigh na hÉireann (ÓNH), a dissident republican paramilitary group, attended an Easter Sunday commemoration. One member [read a statement](#) while [two others brandished FGC-22s](#) (a .22 calibre version of the FGC-9). It was the first time a paramilitary group was seen with 3D-printed guns in Northern Ireland.



This list excludes the [15-year-old girl in the UK who was arrested in October 2020](#) for possessing 3D-printed gun designs and documents on explosives. Authorities later dropped the charges after determining she was [a victim of trafficking](#) and sexual exploitation. Also excluded is the case of [24-year-old Artem Vasilyev](#) in Adelaide, Australia. At his home, police found an FGC-9 and guides on making explosives. Even though he [was charged in September 2021 with terrorism offences](#), it is unclear from public reporting or police statements whether he holds violent extremist ideas.

### The Prevalence of the Far-Right

Eight of the nine cases involve individuals linked to white nationalist or far-right ideologies. Their prevalence has some tentative explanations. Far-right forums and chat groups regularly share digital libraries of ideological and instructional material on improvised weapons and explosives. These libraries may make it more likely for users to come across 3D-printed gun designs. Another factor is the emphasis far-right ideologies place on stockpiling weapons and supplies for a hypothetical ‘race war’. Such preparation can increase the chances of someone coming across—or actively searching for—3D-printed gun designs. Firearms also have a strong cultural draw, as they regularly feature in the iconography and imagery of the far-right.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

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Another possible explanation is precedence. One far-right terrorist attack has already involved 3D printed components: Stephan Balliet's attack in Halle, Germany. On Yom Kippur in 2019, he tried to enter a synagogue and kill the worshippers inside using homemade, improvised weapons. Yet Balliet could not get past a locked door, his weapons repeatedly malfunctioned, and his



explosives were ineffective. Though he did kill two people, the attack was regarded as a failure among the far-right—not least by Balliet himself. Nonetheless, his manifesto and livestream have resurfaced on the computers of later plotters (such as Dean Morrice and Jim Holmgren). His example possibly inspired them, or served as a lesson of what not to do.



### Jihadists are Noticeably Absent

In contrast, there is no known example of a jihadist attempting to acquire or make 3D-printed guns in Europe. While cases may simply not have made their way to the public domain, the absence begs the question: where are the jihadists? There is no definitive answer here. One possibility is that jihadists are much more reactive to propaganda, which thus far has encouraged other attack methods such as stabbings, TATP explosives, and vehicle rammings. A wave of such attacks in Europe has only reinforced those methods, meaning that future attackers may emulate these tried and tested methods rather than experiment with 3D printing. Gun designs also do not appear to be shared in jihadist spaces as much as they are in online far-right ecosystems. Those explanations notwithstanding, why jihadists have not yet attempted to use 3D-printed firearms remains a mystery.

### The Continued Fascination with Explosives

Even in these nine examples, 3D-printed guns are not always the sole focus. Explosives remain highly desired and feature in five cases; all obtained their guidance from online manuals. The underlying issue here is therefore the prevalence of instructional material online. They may be taking inspiration from infamous terrorist attacks, such as the 1995 Oklahoma City bombing, the 2011 Norway attacks, or those of the Unabomber Ted Kaczynski. Holmgren, for example, asked questions in one online forum on how to make various explosive materials and had precursor chemicals at home. Dean Morrice, meanwhile, had stockpiled enough precursors to produce [680kg of thermite](#). The Keighley cell also had [“an active interest in the manufacture of explosives,”](#) with precursors and instructions [found in their homes](#). The same is true for ‘J.M.’; alongside [his arsenal](#) of 3D-printed guns, he was reportedly [testing explosives in the mountains of Tenerife](#). The advent of 3D-printed guns has therefore not displaced traditional threats, but supplemented them.

### 3D Printing a Gun is Not a Shortcut

These cases also show that 3D-printing does not currently present the ‘path of least resistance’ for a would-be attacker looking to obtain a weapon. Printing and assembling a gun still involves considerable time and energy. There are several necessary steps: acquiring the correct printer, software, and polymers; sourcing the most suitable designs; printing and assembling the components (some parts, such as firing pins or recoil springs, cannot be 3D printed and so would need to be sourced elsewhere); buying or making ammunition; and finally testing the gun for accuracy and reliability. The need to avoid detection by the authorities only compounds these practical challenges. No one operates at maximum efficiency, and each step in the process can frustrate or dissuade those less committed.

However, we do not know the number of extremists who considered—and ultimately abandoned—the idea of using 3D-printed guns or components. The Buffalo shooter is perhaps the only known case in point, although there are likely other examples. On two occasions, Payton Gendron wrote in his online diary how it might be possible to 3D print a component to allow a semi-automatic gun to fire automatically. Ultimately, he did not proceed with this idea (his first thought was to use pliers or a hydraulic press instead). Gendron could accomplish his goals with legally obtainable firearms, after all.

### The 3D-Printed Gun Movement

The movement behind 3D-printed guns is diverse in its aims and motivations. Not everyone is involved for ideological reasons, though there is a broad libertarian undercurrent of opposing State intervention into citizens’ lives. While the general aim is to ensure anyone can make a firearm, the main forums and communities do not actively encourage violence against the State (or other groups). Beyond the universal right to bear arms, they do not endorse extremist ideologies or groups. In a [Popular Front documentary](#), JStark, the founder of the leading network behind new 3D printed gun designs, [shared his thoughts on extremists](#):

*“We kind of don’t like extremists because they usually start a fierce conversation or debate ... We like to discuss actually designing firearms, and actually advancing the cause [of the right to bear arms] ... But in general, we do not like racists, we do not like xenophobes. We just like people who are for the cause of the right to bear arms and for freedom of speech”.*

Ideological or [political discussions are discouraged in the group’s chatrooms](#) and are moderated and censored when they occur. However, this does not mean that the network cannot be exploited by extremists who remain incognito. When asked about the risk of extremists infiltrating the community, [JStark replied](#):

*“So basically, we let everybody in but if they act up we kick them [out] ... If they never talk about politics, if they never show indication of xenophobia or of being zealots, how the fuck are we supposed to know that we have to kick them out? But if they do show that they are extremists, racists, Islamic terrorists, then we would kick them out immediately”.*



### Extremists Using the Principal 3D-Printed Gun Network

At least one violent extremist has already exploited this lax security. Jim Holmgren, a 25-year-old white nationalist, was [arrested on 4 November 2021](#) at his farm in Falköping, Sweden. Police found 50 tonnes of precursor explosives on the farm, where he lived alone, though a portion of those belonged to his neighbour. There were also [far-right paraphernalia and documents](#), including a purported manifesto [paying tribute](#) to Anders Breivik. According to his indictment (not in the public domain), Holmgren bought a 3D printer in January 2021 and tried making three semi-automatic 3D-printed firearms. His house was littered with parts for the ZBC-21 (a bullpup carbine, also known as the Urutau, in beta testing), FGC-9, and FGC-22. He also experimented with several other designs, such as the PG22, Covid-22, SpaceJunk V2, and Songbird.

He had sourced the files from the foremost 3D-printed gun community, where he was an active poster in its various RocketChat rooms. Holmgren asked questions about making 3D-printed guns and conventional explosives, and was also involved in chatrooms exclusively for beta testing. He used three different usernames. None appear to have been used contemporaneously, suggesting that he either lost access to accounts and created new ones or wanted to switch accounts to avoid surveillance. (His final username had 129 logged visits between June and November 2021). As none of his posts revealed his ideological leanings or ultimate intentions, the administrators and moderators were seemingly oblivious to his attack planning. Those intent on making designs accessible to the public may merely see this as a necessary 'cost' of spreading the message.

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works. Jihadists saw this occur with vehicle rammings, which were first encouraged in Al Qaeda's Inspire magazine in 2010. [Several attacks](#) followed. The highest profile was the July 2016 attack in Nice, where Mohammed Lahouaiej Bouhlel used a 19-tonne truck to run over scores of people at the



Holmgren was charged with "gross public destruction" (*grov allmänfarlig ödeläggelse*) rather than terrorism, as he had no fixed plan or target. Though he was acquitted of this [in June 2022](#), he was convicted of a weapons charge and violating laws on explosive and flammable goods. He is currently awaiting sentencing.

#### Tactical Innovation in Terrorism

Tactical [innovation](#) in terrorist attack planning can rely on a 'breakthrough moment'. That can be via the release of propaganda or a high-profile attack, which signals to other extremists that this new method



seafront promenade, killing 86. Copycat attacks in [Berlin](#), [London](#), [Stockholm](#), and [Barcelona](#) used a similar modus operandi. Another breakthrough occurred with far-right terrorists using livestreams to broadcast their attacks. Copycats followed the example of Brenton Tarrant, who live-streamed himself killing 51 people at two mosques in Christchurch, New Zealand, in March 2019. The effect was enormous, and subsequent far-right attacks in [Poway](#), [Bærum](#), [Halle](#), and [Buffalo](#) all involved perpetrators who also attempted to livestream their shootings.

### Maintaining Perspective Amid the Alarm

3D-printed guns have not yet had this breakthrough moment. However, the recurrence of plots since Halle shows that such a breakthrough may not be necessary. Despite this flurry of cases, it is essential to maintain perspective. Improvised, homemade firearms—and documents instructing people how to make them—have long predated the rise of 3D printing. The vast majority of the hobbyists and enthusiasts of 3D-printed guns likely have no intention to use them for terrorism. Even then, the greatest threat does not appear within this community but rather from *existing* extremists coming across—or deliberately searching for—their designs.

### Prospects

That said, it remains to be seen whether the pace of cases will slow down. The technical knowledge needed to make a gun is decreasing, and 3D printers are relatively inexpensive. Tried and tested designs are freely posted online, with step-by-step instructions on printing, assembling, and testing the guns. Regulation also does not appear able to restrict the component parts and materials. Beyond any technical aspects, 3D-printed guns are moving into the mainstream. They are found across social media and can potentially become, if they are not already, cultural mainstays and highly-desired items in extremist—and criminal—subcultures. The situation today is far from what it was when they first emerged a decade ago, when they were bulky, unreliable, and only a niche interest. There is no going back to an era before 3D-printed firearms. The technology is only improving, and it is here to stay. Extremists, terrorists, and paramilitaries are realizing that too.

## The Virtual Pack & Its Lone Wolf Wind-up Toy

### Plumbing its Unconscious “Subbasement”

By Nancy Hartevelt Kobrin, Ph.D.

The esteemed psychologist Dr. Irwin J. Mansdorf and Brig. Gen. (res) Yossi Kuperwasser former IDF Chief of Intelligence recently published an excellent essay entitled “Understanding the Psychology of Terrorist Behavior: How the virtual “pack” stirs the lone wolves to action” which can be found here <https://icpa.org/article/understanding-the-psychology-of-terrorist-behavior-how-the-virtual-pack-stirs-lone-wolves-to-action/>. They offer a model for understanding “terror waves” by using the metaphor of a house:

*Imagine a house with a solid basement or foundation and several floors and levels above it. Terror activity among Palestinian Arabs has a basic “basement” or foundational baseline of constant threat, and different levels are exhibited at other times. At the base is a solid and steady presence among at least part of the population that not only supports terror activity, but actually engages in “baseline” behavior that includes confrontation from a distance and use of generally primitive yet potentially lethal weapons. This activity includes stone-throwing or the use of Molotov cocktails thrown at Jewish Israeli vehicles and buses in Judea and Samaria or the use of incendiary balloons flown into Israeli territory from Gaza.*

*The next level involves opportunistic use of “cold” but lethal weapons in direct, frontal attacks. This would include knifings and car-ramping targeting Jewish Israelis, especially in Judea and Samaria and in east Jerusalem. The transition to “hot” weapons and attacks inside the pre-1967 Israel is next, with shooting attacks being the most common method. While the transition to “hot” weapons includes the suicide/homicide bomber or the use of rockets or IEDs, these operations, while certainly an example of a different level of terror, are most often not a classical “lone wolf” situation because of logistic and planning issues and accomplices needed to transport them to the attacks.*

### Plumbing the Unconscious Subbasement

While the metaphor is apt, I offer an enhanced view of “the solid basement” in light of early childhood development and unconscious behavior. The neuroscientist Van Reymenant has noted that 94% of



thinking is unconscious.<sup>1</sup> The prologue to violence is early childhood. One learns how to bond with others during the critical years of maternal attachment. This bonding experience becomes the template for all other social bonds. The mother is also the first cultural interpreter for the baby especially with regard to language. Hence it seems not only reasonable to factor in early childhood development and social bonding but also critical to understanding the lone wolf's unconscious nonverbal behavior.

### Cyberspace, the virtual as maternal

Turning to my *Jihadi Dictionary*<sup>2</sup> I highlight the role of cyberspace i.e. the virtual world of the “virtual pack.” Think of the lone wolf as a jihadi wind-up toy “set loose” to commit murder.<sup>3</sup>

### How can cyberspace be maternal?

*The connection to the computer is a maternal one, bordering on an addiction. “Logging on” is really “plugging in” to the maternal. Think of Harlow’s monkeys and their attachment to metal grates as surrogate mothers. The computer is such a mother, and its oceanic feeling of space expands the omnipotence and grandiosity of the jihadi. This is quite autistic, as a computer is a hard object. The electronic connection is as if the jihadi is being enlivened by the maternal connection, thus paving over maternal deprivation. The jihadis’ unconscious expands its omnipotence and grandiosity through consuming the entire Internet. Their goal is to deplete the mother of all her “goodies” and contents. This unconscious attack on the mother expresses the jihadis’ greed, interpolated and projected onto their innocent victims, those targeted for recruitment. Because the jihadis are involved in crime, theirs is a misuse of the computer as an object, which constitutes a perversion.* The Jihadi Dictionary, p. 68

The authors have cleverly named this fused group as the virtual wolf pack. The pack is representative of Palestinian culture where boundaries are never learned. Members are fused together because they are not composed of “individuals” on account of the unconscious social prohibition against separating from the “heroic” mother. This is a psychological defense against the devalued female who is readily murdered in an “honor” killing, a violent social bonding.

*The jihadi group is highly fused together so emotions are “shared” intensely and spread quickly. Since they lack emotional intelligence, jihadis do not have control over their emotions and display them fiercely at funerals and during their attacks with the shout of “Allahu Akhbar.” The jihadi predilection for vengeance facilitates emotional contagion as they vent the rage outwardly by attacking the designated enemy, who is always perceived unconsciously as the devalued female. The emotional contagion of the jihadi is dependent upon projection, evacuating their own feelings, such as terror, into the other. In other words, jihadis terrorize to try to rid themselves of their own terrors.* The Jihadi Dictionary, p. 85.

### Detachment

The importance of disclosing the link between the pack and its wolf is initially hard to see. This is due to the concept of detachment. It's quite sneaky precisely because their “wind-up toy” depends on detachment. The virtual world appears to be detached from the real world as if the “lone” wolf has nothing to do with the pack. It is this detachment which cleverly masks what is really going on. The lone wolf embodies psychological detachment as well. Thus, this relationship between the two flies under the radar making it hard to detect how the virtual pack actually assists and abets the lone wolf in terrorist crime.

*Detachment differs from withdrawal in that a detached person completely disconnects from emotions and feelings. The jihadis are so detached that they can only seek out a connection or bonding by becoming violent with their designated victims. Their “connections” within the family remain superficial. They can only achieve pseudo- intimacy. Their*

<sup>1</sup> See my “The Utility of a Psychoanalytic Mentality concerning Artificial Intelligence and the Jihadis: The Need to Integrate Maternal Attachment and the Shame of the Jihadis into those Algorithms” [https://www.nancykobrin.org/files/ugd/6480a3\\_e27b532b98614fedb54af89419e8fdbbc.pdf](https://www.nancykobrin.org/files/ugd/6480a3_e27b532b98614fedb54af89419e8fdbbc.pdf)

<sup>2</sup> The Jihadi Dictionary will appear in French translation in 2023 to be published by David Reinharc Éditions, Paris.

<sup>3</sup> See my “The Somali Wind-up Toy”

[https://www.academia.edu/37534053/The\\_Somali\\_Wind\\_up\\_Toy\\_Prologue\\_to\\_Al\\_Shabaab\\_and\\_ISIS\\_Suicide\\_Bombings](https://www.academia.edu/37534053/The_Somali_Wind_up_Toy_Prologue_to_Al_Shabaab_and_ISIS_Suicide_Bombings)



detachment signals the depths of their primitive states, which impede connecting healthily with people. This is also why the Internet and cyberspace are so appealing to jihadis, allowing them to connect in a pseudo way through machine substitutes, much like autistics. To be in a real relationship is scary to them, and yet they deeply envy those that are in relationships; hence, they attack and destroy manifestations of intimacy. An example of how they violently bond could be seen during the Paris Black Friday massacre in 2015. They “bonded” through the attack with those who were enjoying themselves at a rock concert or simply sipping a glass of wine at a café. The Jihadi Dictionary, p. 78.

The detachment further indicates the underlying problem of having been treated as an object in the maternal attachment. This is because the male baby is misused as an object of honor for the mother. She is so devalued that she only gains honor when she has her first son. In turn he is treated as a pathological narcissistic object, a prop for her shamed sense of self. Her offspring learn to repeat this trauma by treating others as objects without empathy, unaware of the concept of basic emotional needs. The wind-up toy image speaks to a profound objectification in the culture. Because of shaming practices and other intervening issues such as genetics, a cognitive deficit occurs that does not allow for the development of empathy for the Other outside of the fused group.

The lone wolf is also reminiscent of the suicide bomber. They both attack alone but as the authors point out, there is a more elaborate concrete chain in the suicide bomber’s development – the recruiter, handler, manufacturing of the weapon etc. Yet like the suicide bomber, the lone wolf is manipulated by his own people and dispensable under the guise of martyrdom. Shaming is the essence of Palestinian culture and scapegoating its psychological mechanism of control through purging. Since there is an unconscious social taboo from separating from the mother, they never achieve the capacity to see the forest from the trees. This leads to massive blaming as well as failing to take responsibility for their emotions and actions; they remained locked into victimhood. Theirs is a reverse world – where good is bad and bad is good.

### Breaking the link between the virtual pack and the lone wolf

By coining the term “virtual pack” the authors have disclosed how the dynamic works at a conscious level.

Unconsciously, the lone wolf “hooks into” the virtual pack’s rage and incitement as if it were a charismatic leader. By doing so the lone wolf “packages” his rage through the shared ideologies which provides the mechanism for projection. He becomes a carrier of the group’s rage i.e. the tip of the spear. The lone wolf wind-up toy is ready to go, to be deployed.

It is worthwhile to factor in the idea that rage is an

emotion coming from the body – it is very much about body politics’ sadomasochism. They harbor a rage which exceeds murder itself as they can’t get their basic needs met. It is rare to hear in the west a son saying of his mother that “you are my everything” and yet this is common parlance in Arab culture. This causes a smothering emasculating fusion. We can see in the unconscious imagery that mother + son morph into the virtual pack + lone wolf. This violent union is part and parcel of “the open university of jihad.”

While it is true that there is a broad spectrum of opinions in the Palestinian community which ranges from acceptance, encouragement of violence to rejection, again this has to do with the nuanced experience in the maternal attachment. *Fundamentally lone wolves bond violently to us.* Like the Emperor’s New Clothes this violent bonding behavior shows us that the problem precedes ideologies and is intimately connected to unmet needs and emotional deprivation. Well-adjusted children do not become lone wolves nor do they engage in incitement to violence via social media. In this case social media is really anti-social. Yet this is not to say that ideologies are not important. They are crucial to the packaging and the expression of acting out the violence – moving it from fantasy to a bloody reality. The virtual pack winds up the lone wolf toy.

### Is the lone wolf an individual?

Perhaps I am splitting hairs here with regard to nomenclature but on account of the group fusion, it is important to raise the question. Might not it be wiser to speak of the jihadi not as an “individual” because he has not individuated but rather as a person?

The inability to be autonomous plagues shame honor societies. The nonverbal communication and his unconscious struggle are ironically the attempt to separate from the mother. He struggles to be free unconsciously but cannot break free even via the attack because he returns to her via a rebirth fantasy. In psychological parlance this connects to the function of projection and annihilation. In object relations theory it is paranoia. Alas, paranoia’s psychological terrain and even the use of the term itself seem to



have been culturally “cancelled.” It is regrettable since this field has a lot to offer as it holds the key to unconscious behavior, the key to opening the door to the subbasement to terrorism’s home.

### Conclusion

What might be done about the lone wolf wind-up toy?

**First** early childhood development must be discussed and taught in depth as well as integrated into the field of political violence. Giving lip service is not enough.

**Second** while the empowerment of women is very important, in and of itself it will not be enough because the female has formed an unconscious identification early on with the aggressor. She, too, has been unconsciously “wound up” for violence.

**Third** developing artificial intelligence to monitor cyberspace using object relations theory could help speed up the profiling and identification of potential lone wolves and its virtual pack.



► An earlier version of this essay first appeared as a blog post at [www.nancykobrin.org](http://www.nancykobrin.org)

**Nancy Hartevelt Kobrin, Ph.D.** is a psychoanalyst, Arabist and internationally renowned counter terrorist expert who has worked extensively with military, law enforcement and mental health professionals.

## Sole surviving attacker in 2015 Paris terrorism rampage is convicted

Source: <https://www.washingtonpost.com/world/2022/06/29/sole-surviving-attacker-2015-paris-terrorism-rampage-convicted/>

June 29 – The lone surviving member of a group that carried out a 2015 rampage across Paris was found guilty Wednesday of all charges, including murder and terrorism, and sentenced to life in prison, bringing the biggest criminal trial in modern French history to an end.

The court found that **Salah Abdeslam** played a key role among the men who deployed explosives and assault rifles as they targeted the Bataclan concert venue, a national stadium, and several restaurants and cafes on the night of [Nov. 13, 2015](#), killing 130 people and injuring hundreds. The Islamic State later claimed responsibility for the bloodshed, France’s [worst terrorist attacks](#) since World War II.

While public attention during the 10-month trial focused on Abdeslam, a Belgian-born French citizen, 19 other suspected perpetrators and accomplices also were charged. Five are presumed dead, and one is imprisoned in Turkey.

Nineteen of the 20 defendants were found guilty of all charges on Wednesday, with punishments ranging from suspended sentences to life in prison.

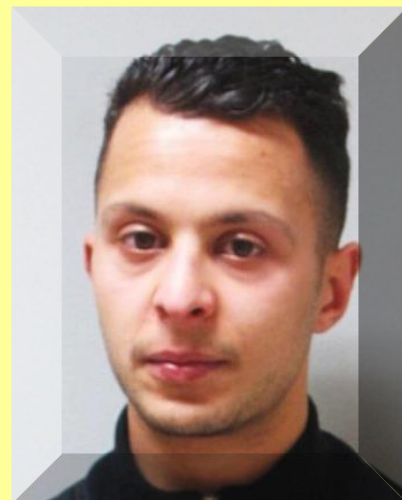
The court sentenced the 32-year-old Abdeslam to the harshest form of a **life-in-prison** sentence under French law, an extremely rare punishment that will make parole almost impossible. It was not immediately clear whether he would appeal.

Lawyers representing the victims welcomed the severity of the court’s ruling. “Salah Abdeslam’s sentence is symbolic and extremely rare, because it sanctions extremely serious events,” lawyer Gérard Chemla told reporters.

Prosecutors contended that Abdeslam only abandoned his plans to kill bystanders after his explosive vest malfunctioned. In court, he disputed the accusation, saying he’d joined the commando plot in its final stages of planning after his brother recruited him but backtracked from using his explosive vest because he saw himself reflected in the people sitting at a cafe. He recalled “a moment of doubt” before he would have blown himself up.

Abdeslam was previously found guilty of attempted murder and sentenced to 20 years in prison by a [Belgian court](#), in a separate trial that focused on his shootout with police as they sought to apprehend the fugitive in the months after the Paris attacks.

The French trial was unprecedented in scale and highly symbolic. Victims were invited to take part as civil parties, and the more than 2,500 plaintiffs were represented by hundreds of lawyers. Authorities built a customized courtroom to allow hundreds of survivors and victims’ relatives to follow the proceedings in person or through video link from overflow rooms. Psychologists were available on-site and via a hotline.







Outside the courthouse on the Île de la Cité in the center of Paris, hundreds of police officers set up barricades and cordoned off large stretches of the island whenever the defendants were in attendance. Over the 10 months, the court heard from experts, officials including former president François Hollande, survivors and witnesses. While the proceedings were videotaped, access to the footage was restricted — with no plans for it to be shown on television.

Sharon Weill, a law professor at the American University of Paris who focuses on terrorism trials, said the proceedings aimed to establish criminal responsibility but also give victims a space “to speak about their suffering.”

Still, much remains unknown. Investigators struggled to shed light on key details of the planning and execution of the attacks, and some defendants refused to respond to detailed questions.

But Weill said the constant courtroom presence of victims or their relatives, who at times directly engaged with the suspects, generated “strong exchanges.”

Abdeslam had refused to answer questions in the Belgian trial, and he appeared to take a combative stance when the Paris trial got underway in September. **Asked about his profession, he said he had abandoned all other work “to become a fighter of the Islamic State.”**

During testimony, he showed little remorse. “I support the Islamic State. I am in favor of them. I love them,” Abdeslam said months into the proceedings, blaming “the aggression of France and the West” for the Paris rampage.

Victims and their representatives described his remarks as “additional stab wounds” and as “hate speech.”

Yet this spring, Abdeslam appeared to have changed

his tone, several times offering “apologies” and “condolences” to the victims in tearful comments in court.

## A Climate of Terror? Approaches to the Study of Climate Change and Terrorism

By Marcus A. Boyd and Samuel D. Henkin and Madeline Romm

Source: <https://www.start.umd.edu/research-projects/climate-terror-approaches-study-climate-change-and-terrorism>

Climate change is one of the most significant global issues of our time. In a recent United Nations Security Council Meeting, UN Secretary-General António Guterres stressed that “no one is safe from the destructive effects of climate disruption.” As our awareness and understanding of climate change increase, the links between climate change and security have become an essential area of inquiry. There is increasing acknowledgment within the research and policy communities and among the security and private sectors that climate change acts as a “threat multiplier.” As such, the complexity of the links between climate change and security, the so-called climate-security nexus, has drawn specific attention to the need to better understand how climate change and terrorism interact. The overall goal of this research agenda is to delve into three possible climate change and terrorism interaction areas: 1) Climate change as an



indirect contributor to terrorism; 2) Climate change as an ideological driver of terrorism; and, 3) Climate change as a means for terrorist exploitation to control or coerce populations.

### [View Executive Summary](#)

**Primary Findings:** Climate change and terrorism appear to interact in three ways: (1) as an indirect contributor, (2) as an ideological driver, and (3) as a means with which to control populations.

**Methodology:** The research team is conducting a series of three Rapid Reviews to synthesize the state of knowledge across multiple research questions related to the three interactions areas.

## AQ Manual Suggests Targets for Lone Wolf Attacks

By Mr. Shai Arbel

*NCT Magazine 11/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/aq-manual-suggests-targets-for-lone-wolf-attacks>

In August 2021, a newly formed Al Qaeda-aligned media unit, Al-Fursan (Lit. “The Knights”), redistributed an Arabic-language manual, penned by an author self-identified as Abu Mahmoud al-Mujahid, and directed at potential lone-wolf attackers, particularly Muslims residing in the US, Europe and Russia. A comprehensive book covering a wide variety of fields, it aims to educate potential attackers. The manual provides suggestions for a variety of high-quality targets for attacks by different TTPs, with detailed instructions for some. Most notably, it describes two methods for the production of the botulinum toxin, and its use in CBRN attacks in several suggested attack scenarios. This dangerous content is particularly potent in light of the current propaganda effort by Al-Qaeda elements to reach new audiences of sympathizers.

The manual begins by surveying prominent lone-wolf attacks perpetrated in the past several decades, mostly, but not entirely, by Muslim operatives in Western countries. It moves on to describe the characteristics of a lone wolf attacker, who will preferably reside in the country he aspires to target and will have a clean security record and lists favorable categories of countries to attack. It then describes the different stages of a lone wolf attack, starting from the choice of target, the planning and training, up until the operation itself and methods to avoid capture following it. It also elaborates on different ways to avoid reconnaissance and tracking and maintaining secrecy. Several chapters of the manual were dedicated to methods to prepare and carry out attacks by different means, some taken from AQ’s Inspire magazine.

A dedicated chapter reviews the topic of chemical and biological agents. The author first described these as historically effective weapons, listing substances he perceived as most noteworthy due to their high toxicity and availability – ricin, sarin, cyanide and anthrax, while providing some specifications for each, such as the effective method of exposure. He then suggests two methods for the preparation of a “made in the kitchen,” homemade toxic substance, described as a highly toxic material that can potentially kill dozens, affecting the human body within 20 to 60 seconds of exposure, with death occurring after one hour. Though not naming the substance, it can be deduced the author refers to botulinum toxin.

The author recommends dipping a brush in the prepared toxin and smearing it on a number of suggested targets: vehicle door handles, bureau doorknobs, elevators control panels, ATM keypads, train grab handles, means of transport, and water supplies; regarding the latter, the author notes that the toxin should be mixed in Vaseline or oil, as he previously stated.

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●► You can read the full article at the source’s URL.



**Shai Arbel** is the CEO of Terrogeance Global, a leading private intelligence company. Until 2021, Terrogeance was part of the Verint Systems group, a global leader for Actionable Intelligence Technologies, in which Mr. Arbel served as Vice President for Threat Intelligence. Mr. Arbel is a leading expert in WEBINT, OSINT and Threat Intelligence, with over 20 years' experience in the field of intelligence and counterterrorism. In his previous roles, Mr. Arbel was CEO and a member of the Board of Directors of Terrogeance Ltd. And CEO and a co-founder of SenseCy Cyber Intelligence Ltd. Before joining Terrogeance, Mr. Arbel was a team leader in the IDF Intelligence Corps (Unit 8200) and also worked for the Israeli Security Agency (ISA). Mr. Arbel holds a B.Sc. Degree in Economics and Management for executives (Cum Laude) from the Ruppin Academic Center.

## Copenhagen mall shooting: Suspect had mental health issues

Source: <https://www.aljazeera.com/news/2022/7/4/copenhagen-shooting-suspect-had-mental-health-issues-poli>

July 04 – The suspect in [a weekend shooting](#) at a Copenhagen mall in which three people were killed was known to mental health services, according to Denmark's police.

"Our suspect is also known among psychiatric services, beyond that I do not wish to comment," Copenhagen police chief Soren Thomassen told a news conference on Monday.



Later on Monday, a police statement said the suspect was remanded in a closed psychiatric ward. It came after a court ruled that he should be kept in custody for at least 24 days, which can then be extended.

Thomassen earlier said that the victims appeared to have been randomly targeted and there was nothing to indicate it was an act of terror.

"Our assessment is that the victims were random, that it isn't motivated by gender or something else," Thomassen said.

The police chief could not yet comment on a motive, but said there seemed to have been preparations before the attack and that the 22-year-old suspect was not aided by anyone else.



**Psychiatric  
patient?**



Noah Esbensen – killed 3; wounded 4

**The cure!**

**NO  
MERCY**

## ICI C<sup>2</sup>BRNE DIARY – July 2022

“As things stand, it seems he was acting alone,” he said. The three killed have been identified as a Danish teenage girl and boy, both aged 17, and a 47-year-old Russian citizen residing in Denmark.

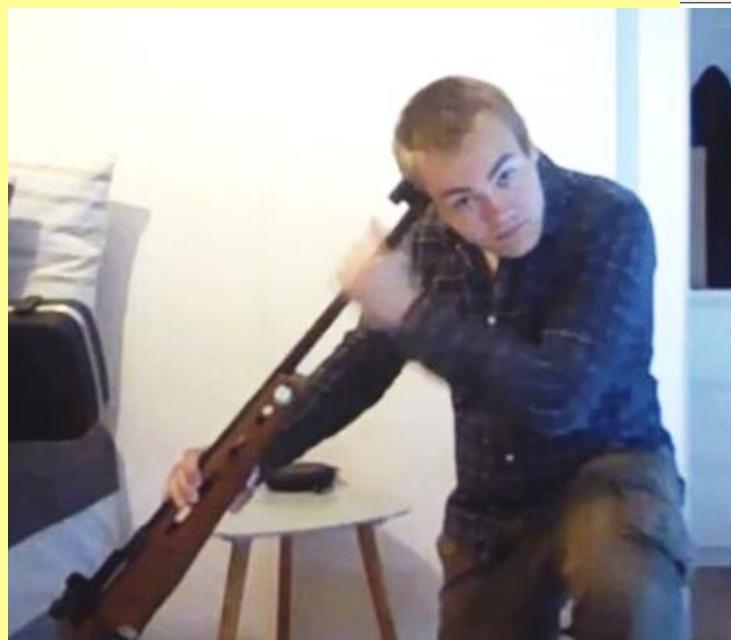
Another four were injured in the shooting: two Danish women, aged 19 and 40, and two Swedish citizens, a 50-year-old man and a 16-year-old woman.

Police confirmed that the suspect was present at the mall at the time of the shooting and is **known to the police “but only peripherally”**.

They added that they believe videos of the suspect circulating since Sunday evening on social media to be authentic.

In some of the images, the young man can be seen posing with weapons, mimicking suicide gestures and talking about psychiatric medication “that does not work”.

The YouTube and Instagram accounts believed to belong to the suspect were closed overnight, according to the AFP



news agency. The shooting occurred on Sunday afternoon at the busy Fields shopping mall, located between the city centre and Copenhagen airport.

### ‘Sufficiently psychopathic’

According to police, the attacker was armed with a rifle, a pistol and a knife, and while the guns were not believed to be illegal, the suspect did not have a licence for them. Witnesses quoted by the Danish media described how the suspect had tried to trick people by saying his weapon was fake to get them to approach. “He was sufficiently psychopathic to go and hunt people, but he wasn’t running,” one witness told public broadcaster DR. Other witnesses told Danish media they had seen more than 100 people rush towards the mall’s exit as the first shots were fired. Prime Minister Mette Frederiksen denounced the “cruel attack” in a statement on Sunday evening. “Our beautiful and usually so safe capital was changed in a split second,” she said.

**EDITOR’S COMMENT:** Mentally ill as all terrorists? What are you going to do about it? Hospitalize him for a few decades spending the taxpayers' money? It is also a good opportunity for police to stop being so polite in cases like this ...

## Transnational crime threats faced by Africa focus of INTERPOL

Source: <https://border-security-report.com/transnational-crime-threats-faced-by-africa-focus-of-interpol/>

July 01 – From human and drug trafficking to terrorism and cybercrime, the range of security challenges faced by Africa is the focus of the INTERPOL African Regional Conference.

Bringing together some 120 senior police officials from 29 countries, the meeting will also hear how cooperation between INTERPOL and regional bodies, including the African Union, CAPCCO, EAPCCO and WAPCCO, is delivering strong results.” Officially opening the meeting, Benin’s Minister of Interior and Public Security Alassane Seidou said, “Africa faces many security challenges that hinder its



development. INTERPOL is accompanying Benin with responses adapted to investigate all forms of crime and is strengthening capacity through training.

“Hosting this conference demonstrates Benin’s commitment to fighting transnational organized crime, including terrorism, through enhanced regional and international cooperation.”



### Supporting policing in Africa

INTERPOL President Ahmed Naser Al-Raisi said the conference underlined the pivotal importance of the alliance between the Organization, and the policing and political institutions of Africa.

“I wish to stress the commitment of the Executive Committee to advancing – and celebrating – INTERPOL’s successes in combating crime in the region, and in enhancing the capacity of Africa’s policing infrastructure.”

Soumaïla Allabi Yaya, Inspector General of Benin Police said, “This conference will provide methods and strategies to enable our law enforcement officers to benefit from shared experiences and best practices in the prevention and fight against organised crime, terrorism and cybercrime.”

INTERPOL Secretary General Jürgen Stock said Africa, like every region, is facing threats which grew, evolved and hardened through the pandemic, particularly cybercrime.

Secretary General Stock pointed to the launch of INTERPOL’s African Joint Operation against Cybercrime, funded by the United Kingdom, which drives regional intelligence-led coordinated actions against cybercriminals and supports joint operations.

“As digitalization is rapidly advancing across the African region, building capacity to address cybercrime has become urgent,” said Secretary General Stock.

“It is essential that vulnerable communities are protected both online and in the real world.

“This includes the men and women of all ages who are rescued during our numerous operations to combat human trafficking in Africa, and the children who are targeted by sexual abusers,” added the Secretary General.

### Regional successes

With the results of INTERPOL-coordinated operations across Africa to be announced at the regional conference, delegates will also be briefed on other regional successes.

These include the first INTERPOL-AFRIPOL front-line operation targeting organized crime networks behind pharmaceutical crime, which identified hundreds of suspects and resulted in seizures of more than 12 million illicit health products.

An INTERPOL-coordinated global human trafficking and migrant smuggling operation involving 47 countries saw a number of successes in Africa, including:

- The arrest in Tanzania of a Ugandan bus driver carrying a box of 169 forged passports from Kampala to Dar Es Salaam.
- Authorities in Sudan rescued 253 victims of human trafficking, arresting 32 suspects.
- Officers in Ghana intercepted two Nigerian suspects accused of running a human trafficking ring between Ghana, Togo, Benin and Nigeria.

**EDITOR’S COMMENT:** A fine example of a drop in the ocean.



## Horror on the Fourth: Suspect in custody after 6 killed, dozens wounded at Highland Park Fourth of July parade

Source: <https://chicago.suntimes.com/2022/7/4/23194354/highland-park-fourth-july-parade-gunfire>

July 05 – More than eight hours after firing a “high-powered rifle” from a rooftop onto a crowd attending Highland Park’s Fourth of July parade, killing six people and wounding dozens in one of the worst mass shootings in Illinois history, a gunman suspected of causing the carnage was pulled over peacefully on U.S. 41 in Lake Forest.

At 6:45 p.m. Monday, the Highland Park police said a “person of interest” — identified as Robert E. “Bobby” Crimo III, 22 — had been “taken into custody without incident” on U.S. 41 at Westleigh Road in Lake Forest.

The arrest came after he was spotted by a North Chicago police officer and following a short chase. Crimo was taken to the Highland Park police station, police Chief Lou Jogmen said.



Christopher Covelli of the Lake County sheriff's office and the Lake County major crimes task force said authorities were using the terms “suspect” and “person of interest” interchangeably.

As of 9 p.m., no charges had been filed, and the police gave no indication of what the motive for the shootings might have been.

As news of the arrest spread, people began driving by the Highland Park police station and expressing their thanks to officers, yelling “thank you” and “good job.”

“Awake the Rapper” Robert E. “Bobby” Crimo III, 22 (Highland Park PD)

Stacy Shaulman, a lifelong Highland Park resident, was among a few dozen people

who gathered outside the police station to await Crimo’s arrival.

“It’s been a horrific day,” Shaulman said. “I’m glad they got him. And, unfortunately, he’s a Highland Park kid, and people knew his family. His family has been around a long time.”

The shooter used “a high-powered rifle” that has been recovered, said Covelli, who said the **gunman fired from a rooftop**. “He was very discreet and very difficult to see.”

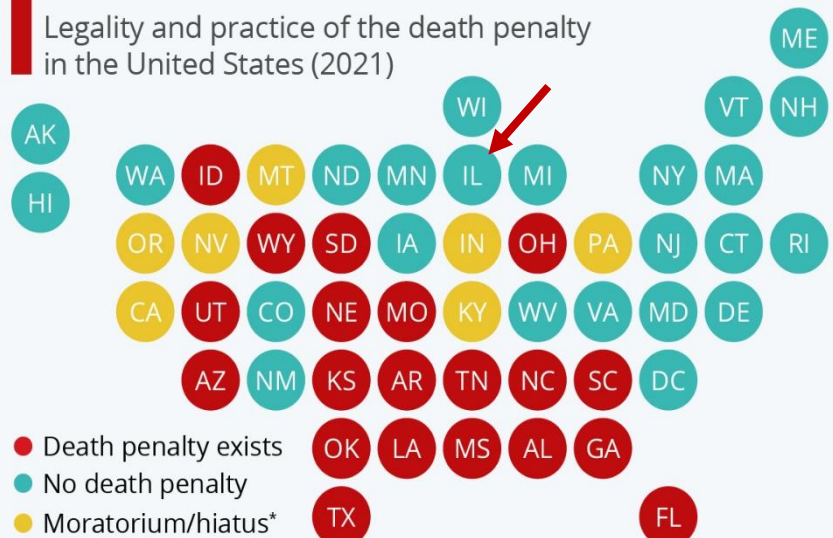
He called the crime “very random, very intentional.”

It appeared that the gunman had used an “unsecured” ladder to climb to the rooftop, Covelli said.

Authorities said the ownership history of the rifle was being examined by the federal Bureau of Alcohol, Tobacco, Firearms and Explosives.

### Which States Have the Death Penalty?

Legality and practice of the death penalty in the United States (2021)



\* includes governor-imposed moratoriums and court-ordered halts. Additional halts might exist for lack of lethal drugs.

Source: Death Penalty Information Center



statista



## ICI C<sup>2</sup>BRNE DIARY – July 2022

### Victims range in age from 8 to 85

Lake County Coroner Jennifer Banek said five people were dead at the scene, all adults, and another died at a hospital. It wasn't clear how old the sixth victim was. All of the victims have been identified, she said.

Among them was [Nicolas Toledo, a grandfather visiting family in Highland Park](#). Also killed was Jacki Sundheim, according to North Shore Congregation Israel, where she worked as a teacher.

Dozens of the injured were taken to Highland Park Hospital, Lake Forest Hospital and Evanston Hospital. The "vast majority" were treated for gunshot wounds, though some "sustained injuries as a result of the ensuing chaos at the parade," according to NorthShore University Health Systems, which owns the Highland Park and Evanston hospitals.

At Highland Park Hospital, Dr. Brigham Temple said 25 of the 26 people treated there were gunshot victims and that 19 of them had been treated and sent home.

Temple said they ranged in age from 8 years old to 85. About "four or five" of them are children, he said. One child was transported from there to the University of Chicago Comer Children's Hospital, and another was transferred to Evanston Hospital.

The injuries varied. "Some of them were minor," Temple said. "Some of them were much more severe."

"It breaks your heart to see innocents wounded," said Dr. Mark Talamonti, a surgeon who was among those treating the injured.

### Shots fired 'in rapid succession'

At the parade scene, one witness said he counted more than 20 shots.

Miles Zaremski, a Highland Park Chicago Sun-Times: "I



resident, told the heard 20 to 25

shots, which were in rapid succession. So it couldn't have been just a handgun or a shotgun." Zaremski said he saw "people in that area that got shot," including "a woman covered not survive."

with blood .... She did

Monday's Fourth of July parade was the first in Highland

As panicked paradegoers fled the parade route on Central Street in downtown Highland Park, they left behind chairs, baby strollers and blankets as they sought cover, not knowing just what happened.

Adrienne Drell, a former Sun-Times reporter, said she was sitting on a curb along Central Avenue watching the parade when she saw members of the Highland Park High School marching band start to run.

"Go to Sunset," Drell said she heard the students shout, directing people to nearby Sunset Foods.

A man picked her up off the curb and urged her to get out, Drell said.

"There's panic in the whole town," she said. "Everyone is just stunned beyond belief."

She ran across to a nearby parking lot with other people who had been watching the parade.

"It was a quiet, peaceful, lovely morning, people were enjoying the parade," Drell said. "Within seconds, to have that peacefulness suddenly ripped apart, it's scary. You can't go anywhere, you can't find peace. I think we are falling apart."

Eric Trotter, 37, who lives blocks from the shooting, echoed that sentiment.

"I felt shocked," Trotter said. "How could this happen in a peaceful community like Highland Park."

### Chaos, and a frantic search for family members

As police cars sped by on Central Avenue, sirens blaring, Alexander Sandoval, 39, sat on a bench and cried. He'd gotten up before 7 a.m. to set up lawn chairs and a blanket in front of the main stage of the parade. He lives within walking distance from there, so he went home to have breakfast with his son, partner and stepdaughter before going back for the parade.

Hours later, he said he and his family ran after hearing the gunfire, afraid for their lives.

"We saw the Navy's marchers and float pass by, and, when I first heard the gunshots, I thought it was them saluting the flag and shooting blanks," Sandoval said. "But then I saw people starting to run, and the shots kept going. We started running."





## ICI C<sup>2</sup>BRNE DIARY – July 2022

He said that, in the chaos, he and his partner Amairani Garcia ran in different directions, he with his 5-year-old son, Alex, she with her 6-year-old daughter, Melani. “I grabbed my son and tried to break into one of the local buildings, but I couldn’t,” Sandoval said. “The shooting stopped. I guess he was reloading. So I kept running and ran into an alley and put my son in a garbage dumpster so he could be safe.” Then, he said he ran in search of the rest of his family and saw bodies in pools of blood on the ground. “I saw a little boy who was shot being carried away,” Sandoval said. “It was just terror.” He found his partner and stepdaughter, safe, inside a McDonald’s nearby. “This doesn’t happen here,” he said. “It shouldn’t happen anywhere.”

Don Johnson, 76, who lives about two blocks from the shooting scene, thought at first the gunfire was a car backfiring. He said he ran with several other people to a nearby BP gas station and described the scene as “surreal.” “It’s just a terrible thing,” he said. “I never would’ve thought this would’ve happened in downtown Highland Park.” Johnson said his daughter lives in Chicago with her son and that he’s been urging them to move to Highland Park, telling her recently, “It’s safe.” Now, he said, it’s clear that “it can happen anywhere.” David Goldenberg, the Midwest regional director of the Anti-Defamation League, was among those at the parade. He’d gone early to set up chairs for his family along the parade route. He said he ended up moving their chairs to be closer to friends.



If not for that, Goldenberg said, “We would have been awfully close” to the shooting.

“It was chaotic,” he said. “Those sorts of things that you hear about — those split-second moments accounting for everyone in your family as people are yelling, ‘There’s a shooter! There’s a gun!’” He said he knows of an adult who was killed, though he declined to discuss details. Meg Coles drove from Atlanta with her 11- and 13-year-old sons to visit her sister-in-law for the Fourth of July, a family tradition. “I just tried to explain to them that this is rare and probably won’t happen again,” said Coles, whose family was sitting about two blocks away along the parade route when the shooting happened. But they weren’t buying it, she said: “I think it’s going to take them a while.”

Sisters Christina Sendick, 20, and Angela Sendick, 22, showed up late for the parade, as people ran, some

screaming, others bleeding. They grew up near Waukesha, Wisconsin, where someone drove a sport-utility vehicle into a Christmas parade crowd last November, killing six people and injuring 62 others. “It’s just crazy no one can figure out how to put a stop to all this,” Angela Sendick said.

### Pritzker: Mass shootings an American tradition

Speaking in Highland Park Monday evening, Gov. J.B. Pritzker said: “If you are angry today, I’m here to tell you to be angry.

“I’m furious that yet more innocent lives were taken by gun violence. I’m furious that their loved ones are forever broken by what took place today. I’m furious that children and their families have been traumatized. I’m furious that this is happening in communities all across Illinois and America. While we celebrate the Fourth of July just once a year, mass shootings have become our weekly — yes, weekly — American tradition.” In a written statement, President Joe Biden said: “Jill and I are shocked by the senseless gun violence that has yet again brought grief to an American community on this Independence Day.”

News of the shooting spree in Highland Park [prompted other suburbs to cancel](#) their Fourth of July celebrations.

Former Obama White House adviser David Alexrod [tweeted](#) that someone he knew was at the parade, writing: “A friend took his kids to July 4th Parade in Highland Park today. His son has special needs. When shots rang out, they ran for their lives, the dad pushing his grown son’s wheelchair —which at one point tumbled over. On America’s day, what has become a sickeningly American story.”

After Crimo’s arrest, across the street from a mobile command center that the police had set up, Jerry Felsenthal, who’s lived in Highland Park for 32 years, said he worries that, with so many guns on the streets, there will be more mass shootings.

“It’s going to happen again,” Felsenthal said. “It’s inevitable.”

**EDITOR’S COMMENT:** Another case of a mentally ill terrorist? Better conduct his trial in a state where the death penalty is valid. Ah! And do something about assault guns and ammo! No? Then stop complaining and shed tears because this is not the last time! Also, I do not like the term “gunman” — “terrorist” is more accurate and correct, and in parades, we cover ALL high buildings! (elementary) — remember the 2017 Las Vegas massacre?





**No mercy  
to arsonists!**



**Athens mega-fire | July 2022**



## Illinois State Police – Firearm Owners Identification (FOID)

To legally possess firearms or ammunition, Illinois residents must have a Firearm Owners Identification (FOID) card, which is issued by the Illinois State Police to any qualified applicant.



### Eligibility Rules for a Firearm Owner's Identification card

- I have not been convicted of any Felony under the laws of this or any other jurisdiction.
- I have not been adjudicated as a mental defective.
- I have not been a patient in a mental institution or any part of a medical facility for the treatment of mental illness within the past 5 years.
- I am not intellectually disabled or developmentally disabled.
- I have not within the past year (preceding the date of this application) used or been addicted to any controlled substance or narcotics in violation of state or federal law.
- I am not subject of an existing Order of Protection or a No Contact/No Stalking Order.
- I have not within the past 5 years been convicted of battery, assault, aggravated assault, violation of an order of protection, or a substantially similar offense in which a firearm was used or possessed.
- I have not been convicted of domestic battery (felony or misdemeanor), aggravated domestic battery or a substantially similar offense.
- I have not been adjudicated by a court as a mental defective or ordered by a court, board or authorized entity to in-patient or out-patient mental health treatment.
- I am not an alien who is unlawfully present in the United States.
- I have not within the past year failed a drug test for a drug for which I did not have a prescription.
- I have not been admitted to the United States under a non-immigrant visa of the Immigration and Nationality Act.
- I have never renounced my citizenship as a citizen of the United States.
- I have never been discharged from the Armed Forces under dishonorable conditions.
- I am not a fugitive from justice.



### Requirements Prior to Applying for a Firearm Owner's Identification card

- A Valid Driver's License or State Identification card.
- A head and shoulder electronic photograph taken within the last 30 days.
- \$10.00 payable with a credit card or electronic check.

**EDITOR'S COMMENT:** Practically you need to state that you are a nice guy and have 10 USD. Then you can buy whatever you want (even if you are red-flagged) and use it as you like. FOID is a joke – a bad one!



## Clownfall – A doomed prime minister and a stricken country

Source: <https://www.economist.com/leaders/2022/07/07/clownfall>

July 07 – Boris Johnson's government has collapsed at last. For months Britain's prime minister wriggled out of one scandal after another. Now, irretrievably rejected by his own mps, he has accepted that his premiership is over. He has asked to stay until the autumn, but he should go immediately.

Mr Johnson was brought down by his own dishonesty, so some may conclude that a simple change of leadership will be enough to get Britain back on course. If only. Although [Mr Johnson's fingerprints](#) are all over today's mess, the problems run deeper than one man. Unless the ruling



**EDITOR'S COMMENT:** I was always wondering why the mass media (printed and electronic) can address politicians with insulting words or phrases but a citizen cannot do the same? Is this the kind of democracy it has become?

## 7/7 (2005) attack: Horrific hour in which four suicide bombers killed 52 people in London

Source: <https://www.dailystar.co.uk/news/latest-news/77-attack-horrific-hour-four-27376984>



July 07 – On this day (July 7) in 2005, London was rocked by the deadliest suicide attack in history on UK soil which left 52 people dead and more than 700 people injured.

Between 8:47am and 9:49am, four terrorists detonated suicide bombs across the capital aiming to kill as many innocent people as they could.



7/7 bombers, Hasib Hussain, Shehzad Tanweer, Jermaine Lindsay and Mohammad Sidique Khan (left to right) (Image: PA)



## ICI C<sup>2</sup>BRNE DIARY – July 2022

The four bombers deliberately targeted London's transport system in an effort to maximise the devastation of their payloads. Three bombs were detonated at Tube stations during the peak of rush hour, and less than an hour later as the city reeled from the chaos - another was deployed on a double-decker bus in the heart of the city.



Now 17 years on, the Daily Star looks back on exactly what happened on that harrowing summer's day.

The monsters responsible for the atrocity were bombers Mohammed Sidique Khan, 30, Shehzad Tanweer, 22, Hasib Hussain, 18, and Jermaine Lindsay, 19.

Based out of Leeds, the men were radicalised from a young age and plotted their attack meticulously, even going as far as to purchase ice from supermarkets to cool their bombs en-route to the capital.

Sponsored

Early in the morning on July 7, Khan, Tanweer and Hussain left Leeds in a rented car and drove down to Luton where they met Lindsay.

They then boarded the early train to London, arriving at Kings Cross station at 8:23am.

Once the men had arrived, they separated, with three of them boarding separate trains on different Underground lines.

Khan took a westbound Circle Line train heading towards Paddington, whereas Tanweer took an eastbound Circle Line service towards Liverpool Street.

Lindsay, meanwhile, boarded a southbound Piccadilly Line service.

At 8:49 am, the three men's bombs went off while they were on the Tubes, catching countless innocents in the crossfire.

Khan's bomb was deployed at Edgware Road station while he sat close to the double doors, killing six Londoners.

Tanweer's device was detonated while his train was in the tunnel between Liverpool Street and Aldgate.

The bomb went off with such power it killed seven people with one bystander being blinded by Tanweers shinbone in the blast.

The most deadly of the Tube blasts occurred on the packed Piccadilly Line at Russell Square where Lindsay's bomb killed 26 people. One survivor Paul Glennerster lost a limb in the pandemonium, which he picked up and took with him. Other survivors ran to the help of others, treating wounds with items of



clothing and sanitary towels. Less than an hour later, while the city was still reeling from the attacks, the cowardly bombers played their final hands. Hussain had boarded a double-decker bus after leaving Kings Cross and at 9:47am detonated his payload from the top deck in Tavistock Square. The explosion ripped through the bus killing 13 people located next to and below him. The explosion happened beside the headquarters of the British Medical Association, where a conference was being held. In the aftermath, dozens of doctors ran from the building and began to administer care to those who were injured.

## Is There a Link Between Mental Health and Mass Shootings?

Source: <https://www.homelandsecuritynewswire.com/dr20220708-is-there-a-link-between-mental-health-and-mass-shootings>

July 08 – There have already been more than [300 mass shootings](#) in the United States this year—the latest at a 4th of July parade in the Highland Park suburb of Chicago that left seven people dead and dozens injured. As the nation reckons with these increasingly common public massacres, many blame mental illness as the fundamental cause.

**The reality is that people with mental illness account for a very small proportion of perpetrators of mass shootings in the U.S.,"** says [Ragy Girgis, MD](#), associate professor of clinical psychiatry in the Columbia University Department of Psychiatry and the New York State Psychiatric Institute. In 2021, Dr. Girgis, an expert in severe mental illness, and colleagues from Columbia's Center of Prevention and Evaluation authored the first report on mass shootings using the Columbia Mass Murder Database (CMMD), which examined the relationship between serious mental illness and mass shootings. [Columbia Psychiatry News](#) spoke with Dr. Girgis about the role of mental illness in mass shootings, the motivations behind mass murder, why the perpetrators of mass violence use guns, and more.

**Columbia Psychiatry News: Are people with mental health disorders more likely to commit mass shootings or mass murder?**

*Ragy Girgis:* The public tends to link serious mental illnesses, like schizophrenia or psychotic disorders, with violence and mass shootings. But serious mental illness—specifically psychosis—is not a key factor in most mass shootings or other types of mass murder. Approximately 5% of mass shootings are related to severe mental illness. And although a much larger number of mass shootings (about 25%) are associated with non-psychotic psychiatric or neurological illnesses, including depression, and an estimated 23% with substance use, in most cases these conditions are incidental.

Additionally, as we demonstrated in our [paper](#), the contribution of mental illness to mass shootings has decreased over time. The data suggest that while it is critical that we continue to identify those individuals with mental illness and substance use disorders at high risk for violence and prevent the perpetration of violence, other risk factors, such as a history of legal problems, challenges coping with severe and acute life stressors, and the epidemic of the combination of nihilism, emptiness, anger, and a desire for notoriety among young men, seem a more useful focus for prevention and policy than an emphasis on serious mental illness, which leads to public fear and stigmatization.

**CPN: Why does the public erroneously link mental illness with mass shootings and with violence in general?**

*Girgis:* A lot of people who aren't experts in mental illness tend to equate bad behavior, and often immorality, with mental illness. These are a false equivalence. I think it's incumbent on us, especially when we're talking about something as horrible as mass shootings, to make sure other people understand that all bad behavior, and certainly not evil and pure psychopathy, is not the same as mental illness.

**CPN: What is the Columbia Mass Murder Database?**

*Girgis:* The Columbia database, compiled by researchers at the [New York State Psychiatric Institute\(link is external and opens in a new window\)](#) and the [Columbia University Irving Medical Center\(link is external and opens in a new window\)](#), is the largest catalog of mass shootings and mass murder in the world. We have approximately 1,800 entries, including any mass shooting or murder reported between 1900 and 2019 worldwide that resulted in at least three deaths (not including the perpetrator).

The major findings from our database are that the vast majority of mass shootings and mass murder are committed by people without mental illness, and certainly not psychotic illness, and when a person with severe mental illness commits a mass murder, they're much less likely to use firearms than other methods, such as arson or knives.

**CPN: How is CMMD different from other databases tracking this topic?**

*Girgis:* The CMMD is different because we examined mass murder before the modern period until the present to assess changes over time, included mass murder committed by means other than firearms so, we could examine what is specific about mass shootings, and collected information on mass shootings and mass murder committed worldwide. We were comprehensive by collating names and events reported in all types of



databases, including popular databases, but we made sure that our data were robust by only keeping names and events, and information on these events, included in reputable news sources, as well as court and police records.

**CPN: Why do people use guns when they commit mass murder?**

*Girgis:* There's solid evidence that nearly half of all mass shootings are associated with suicide by perpetrator, or what they call "suicide by cop." Guns are the most successful method of killing oneself. So, one main reason people choose guns is they want to die. In about 30% of mass shootings, perpetrators kill themselves with their own gun; about 10% are suicide by cop. However, while guns are the most effective method of suicide, they're not as effective at killing a large number of other people. Mass murder committed with means other than firearms, such as bombing, arson, vehicles, even stabbings, is about two and a half times more deadly than mass murder committed with firearms.

Another reason people use firearms to carry out mass shootings (aside from availability) is our cultural romanticization of violence. As a result, the movie, television, music, and video game industries will have to play a role in any efforts to decrease gun assaults.

**CPN: What tends to be the motivations behind mass shootings?**

*Girgis:* First, understand that mental illness as the primary cause of any mass murder, especially mass shooting, is uncommon. Half of all mass shootings are associated with no red flags—no diagnosed mental illness, no substance use, no history of criminality, nothing. They're generally committed by middle-aged men who are responding to a severe and acute stressor, so they're not planned, which makes them very difficult to prevent. So, we must look much further upstream.

This is why it is important to consider ways to manage gun availability, for example. The yearly prevalence of the incidence of mass murder was stable at about 7 per billion people, or seven mass shootings for every billion people, between 1900 and about 1970. Then between about 1970 and 2019, the incidence increased by four times, so now mass shootings occur about 28 times per billion people around the world. One might say that this is because of the availability of guns in general, and automatic weapons, in particular, especially in the U.S. where these weapons became more available to the general population during this time period. Mass murder committed with means other than firearms also grew, but at a slightly slower rate. The other thing that one must consider is that most mass shootings are committed with non-automatic weapons, making them the weapons of choice, and supporting the notion that gun availability is a primary contributor to method of mass murder.

**CPN: You have said that the media's publishing personal details about the perpetrators encourages violent behavior and is harmful. Please explain.**

*Girgis:* If we're talking about the mass shooters that we hear the most about, such as school shooters and other individuals who commit such public crimes, we have examined a number of these cases and are seeing a pattern. As opposed to most mass shooters, these perpetrators tend to be younger males who are often nihilistic, empty, angry, feel rejected by society, blame society for their rejection, and harbor a strong desire for notoriety. They want to make their mark on the world that will elevate them to the status they believe they are entitled to and deserve. Sensationalized headlines, photographs, and breaking personal information about the shooters, victims, and acts themselves provide the notoriety perpetrators of mass shootings crave and can spark others to carry out similar acts. Refraining from publishing any personal information about mass shooters may be one of the easiest, quickest, and most effective interventions for decreasing mass shootings, especially school and other public shootings, which comprise about 10% of all mass shootings.

**CPN: Is there a difference in violence committed by women vs. violence committed by men?**

*Girgis:* Mental illness makes more of a difference when we're talking about violence committed by women, who are responsible for about 5% to 8% of mass murder. This is because the mechanism by which mental illness and substances of abuse, when they are causative, contribute to violence is by impairing impulse control. Research has shown that the lack of impulse control caused by mental illness and substances has a greater effect on women than on men, likely because men, especially younger men, tend to already be quite impulsive. It is also important to note that when women perpetrate mass murder, they are much less likely to use firearms than other methods, consistent with our thesis that mental illness is minimally responsible for mass shootings.

●► Read also: [Are the Suicide Attackers Rational or Irrational Beings?](#) (by Raagini Shekher Sharma | RIEAS)

## Homemade guns are seized in a raid on Abe shooting suspect's home, police say

Source: <https://www.nbcnews.com/news/world/homemade-guns-are-seized-raid-abe-shooting-suspects-home-police-say-rcna37260>

July 08 — Police on Friday raided the home of the man suspected of using an improvised firearm to [assassinate former Japanese Prime Minister Shinzo Abe](#) and said they seized multiple weapons that also appeared to be homemade.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

The discovery followed the arrest of the suspect — identified by officials as Tetsuya Yamagami, 41 — in the western Japanese city of Nara, where Abe had been delivering a campaign speech outdoors ahead of parliamentary elections this weekend.

Local media captured video and photos of the bulky weapon that police said was used to kill Abe. They confirmed that the firearm consists of two metal barrels attached to a wooden board and is more than a foot long.

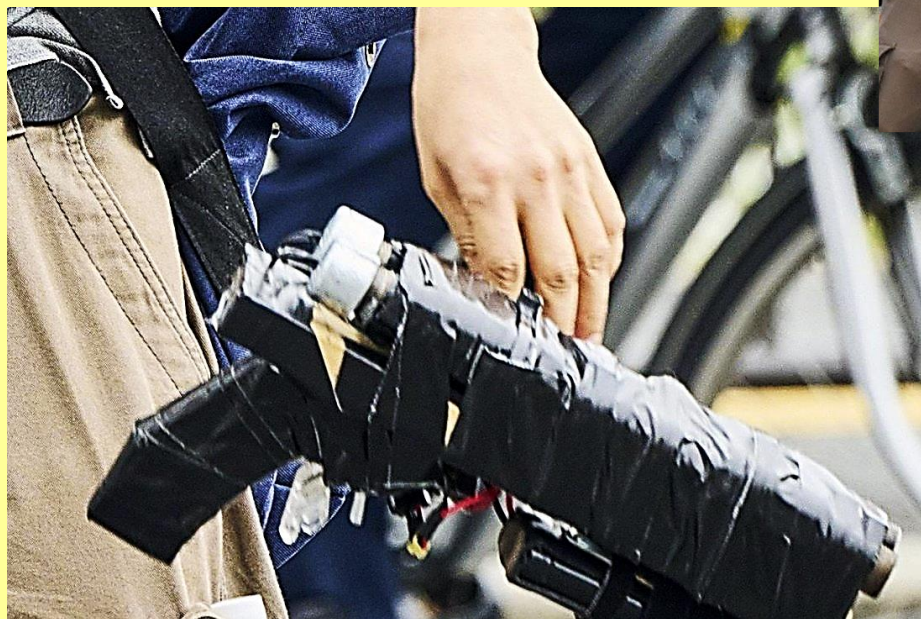
"We are conducting forensics, but clearly it looks homemade," a Nara police chief said at a news conference.

Police said several weapons were also found at Yamagami's residence and were similar to the firearm believed to be used to shoot Abe. They added that it was unclear whether the suspect had the proper licenses for the weapons.

The shooting death of Abe, [Japan's longest-serving leader](#) before [resigning in 2020 because of health issues](#), has stunned a nation where [gun violence is extremely rare](#).



An improvised weapon was discarded close to the scene of Friday's assassination. via NHK



Japan, a nation of about 125.8 million people, has one of the strictest gun laws in the world. There were just 10 shootings in 2021, with one person killed and four people injured, according to the country's [National Police Agency](#). The majority of shootings each year are linked to Japanese organized crime, the agency added.

Witnesses at Friday's scene described a "loud bang and then smoke" set off by the first shot, [Reuters reported](#). In dramatic videos, Abe could be seen raising his fist just before the shots rang out. He collapsed to the ground with blood staining his white shirt and bystanders rushing to his aid.

"The first shot, no one knew what was going on, but after the second shot, what looked like special police tackled" the suspect, one witness said.

Abe was transported to Nara Medical University Hospital after suffering cardio and pulmonary arrest. Doctors said he had two gunshot wounds and no vital signs when he arrived less than an hour after the shooting. He was pronounced dead at 4:03 a.m. ET.

Yamagami was arrested at the scene and is under investigation for the attack, police said. He confessed to the attack, they said, adding that he told them he harbored a grudge against a group he believed was connected to Abe.





Improvised firearms, also known as zip guns, are not complicated to construct and require parts that can be easily bought and ingredients to make homemade gun powder, said John DeCarlo, a professor of criminal justice at the University of New Haven and former chief of police in Branford, Connecticut.

"You can build a go-kart in lieu of a car pretty easily using bastardized parts," DeCarlo said. "It's the same with guns."

Instructions to make zip guns are accessible online, he added. But such weapons are not prevalent in countries like the United States, where tens of thousands of people are afflicted by gun violence every year, because commercially manufactured guns are easier to buy. "You don't often see them here," DeCarlo said.

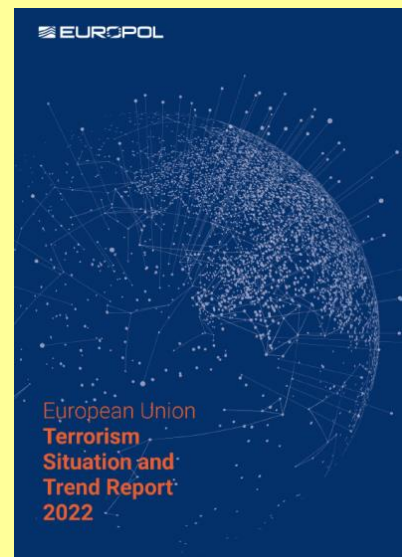
## Europol report: latest situational analysis on terrorism in the EU

Source: <https://www.europol.europa.eu/media-press/newsroom/news/europol-report-latest-situational-analysis-terrorism-in-eu>

July 13 – Published by Europol today, the [European Union Terrorism Situation and Trend Report 2022 \(TE-SAT\)](#) provides the most comprehensive and up-to-date intelligence picture on [terrorism](#) in the European Union.

Europol's flagship TE-SAT 2022 report is based on quantitative data provided to Europol by EU Member States on terrorist attacks, arrests and court decisions issued for terrorist offences. Europol's partners also provided valuable qualitative information and assessments that enrich the findings of the report.

Europol's Executive Director, Catherine De Bolle, said: "The findings of the TE-SAT 2022 confirm that terrorism still poses a real and present danger to the EU. While our joint work to disrupt and prevent attacks seems to be having a positive effect, lone actors associated with jihadist and right-wing violent extremism are still a concern for EU Member States and Europol. In a time of geopolitical shifts, the EU needs to continue more than ever its counter-terrorist measures. Europol will continue to work closely with its partners to meet the challenges ahead."



### Key findings

- 15 completed, foiled and failed terrorist attacks were recorded in the EU in 2021. The four completed attacks included three jihadist terrorist attacks and one left-wing terrorist attack.
- EU law enforcement authorities arrested 388 suspects for terrorism-related offences in 2021. Of these, more than two thirds (260) were carried out following investigations into jihadist terrorism offences in Austria, France and Spain.
- Court proceedings concluded in 2021 resulted in 423 convictions for terrorist offences.
- Lone actors remain the primary perpetrators of terrorist and violent extremist attacks in Europe. However, attack plots involving several actors were also disrupted in 2021. Individuals carrying out attacks alone have been associated mainly with jihadist terrorism and right-wing terrorism and violent extremism.
- In 2021, weaponry was used in the completed terrorist attacks that is relatively easy to source and does not require extensive skills for assemblage or use. Weapons used in attacks in the EU in 2021 included bladed weapons, vehicles (in ramming attacks) and improvised incendiary devices.
- Terrorist propaganda disseminated online in 2021 has continued to reflect themes related to COVID-19. The increased amount of time spent online due to COVID-19 restrictions, amongst other reasons, constitutes a risk factor in vulnerable individuals' potential pathway to extremism.
- Violent anti-COVID-19 and anti-government extremism, which is not affiliated with traditional violent extremist and terrorist activities, emerged in some Member States and non-EU countries. Such forms of violent extremism materialised in open threats, hateful messages spread online and, in some cases, the use of violence.
- Geopolitical developments in key regions outside of the EU influence terrorist narratives and propaganda spread in Member States. The current terrorist threat for Member States appears not to have been directly affected by the Taliban's takeover of power in Afghanistan. However, it increased global attention on religiously motivated insurgencies and, thereby, provided jihadists affiliated with both al-Qaeda and the self-proclaimed Islamic State (IS) terrorist group opportunities to promote their own narratives.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

The TE-SAT elaborates in-depth on the following types of terrorism: jihadist terrorism, right-wing terrorism, left-wing and anarchist terrorism, ethno-nationalist and separatist terrorism and other types of terrorism.

●► To learn more, [download the report](#).

### p.16-17 (CBRN)

Member States did not report terrorist attacks using chemical, biological, radiological or nuclear (CBRN) materials. However, media highlighted an arrest in France. After publicly announcing at a school the alleged manufacturing of pipe bombs loaded with **radioactive** material, a suspect with far-right ideologies was detained, and CBRN and EOD teams were called in. The investigation of the case highlighted the risks associated with the availability of such materials, since the suspect acquired them on an online commercial platform.

Only a few CBRN references were observed in online propaganda in 2021 and they largely involved the circulation of posters from previous years on online forums and websites, which had indirect CBRN content, such as pictures of terrorists wearing gas masks. Although the COVID-19 pandemic has placed bioterrorism under a spotlight, in the second year of the pandemic online propaganda and discussions in closed online forums on the possibility of weaponizing a virus decreased.

## Exclusive video from inside Uvalde school shows officers' delayed response to the mass shooting

Source: <https://eu.usatoday.com/story/news/nation/2022/07/12/uvalde-school-shooting-surveillance-video/10032624002/>

The [gunman walks into Robb Elementary School unimpeded](#), moments after spraying bullets from his semi-automatic rifle outside the school and after desperate calls to 911 from inside and outside the school.

He slows down to peek around a corner in a hallway and flips back his hair before proceeding toward classrooms 111 and 112.

Seconds later, a boy with neatly combed hair and glasses exits a bathroom to head back to his class. As he turns the corner, he notices the gunman standing by the classroom door and unloading a barrage.



**UNACCEPTABLE**

The boy turns and runs back into the bathroom.

The gunman enters one of the classrooms. Children scream. The gunfire continues, stops, then starts again. Stops, then starts again. And again. And again.

It is almost three minutes before three police officers arrive in the hallway and rush toward the classrooms, crouching down. Then, a burst of gunfire. One officer grabs the back of his head. They quickly retreat to the end of the hallway, below a school surveillance camera.

A [77-minute video recording](#)

[captured from this vantage point](#), along with body camera footage from one of the responding officers, shows in excruciating detail what happened when dozens of local, state and federal officers entered the school, heavily armed, clad in body armor, helmets and some with protective shields.

The video was [obtained exclusively by The Austin American-Statesman](#), part of the USA TODAY Network, and TV station KVUE. USA TODAY published an edited version of the video to show how the law enforcement response unfolded.

In the video, officers walk back and forth in the hallway, some leaving the camera frame, then reappearing, others training their weapons toward the classroom, talking, making cellphone calls,



## ICI C<sup>2</sup>BRNE DIARY – July 2022

sending texts or looking at floor plans. None enters or attempts to enter the classrooms. Even after hearing at least four shots from the classrooms 45 minutes after police arrived, they waited.

They asked for keys to one of the classrooms. (It was unlocked, investigators said later.) They brought tear gas and gas masks. They carried a sledgehammer. And still, they waited.

Officers rushed into the classroom and killed the gunman an hour and 14 minutes after police arrived on the scene. Nineteen fourth graders and their two teachers died in the massacre May 24, days before the end of the school year.

The video tells in real time the brutal story of how heavily armed officers failed to immediately launch a cohesive and aggressive response to stop the shooter and save more children if possible. It reinforces the trauma of those parents, friends and bystanders who were outside the school and [pleaded with police to do something](#), and for those survivors who quietly called 911 from inside the classroom to beg for help. Texas Department of Public Safety Director Steve McCraw said the person he identified as the incident commander, school district Police [Chief Pete Arredondo](#), treated the situation as a barricaded subject, which calls for a slower, methodical response, not an active-shooter situation, when police are charged with doing anything possible to stop a gunman, including putting their own lives on the line. [That was a mistake](#), McCraw said. Officers should have confronted the gunman as soon as they arrived, carrying enough firepower to breach the classroom and stop the shooting, McCraw said. McCraw singled out Arredondo for blame in restraining officers from going in earlier. The video shows multiple responding agencies on the scene, including officers from the Uvalde Police Department, the Uvalde County Sheriff's Department, the Texas Department of Public Safety, the Texas Rangers, the U.S. Border Patrol and the U.S. Marshals Service. The video file obtained by the Statesman, part of the investigative file, includes security footage from a nearby funeral home showing the gunman arrive at the school by wrecking a pickup into a ditch, as well as audio of 911 calls and officers speaking in the hallway.

### More gunshots and more delays

At 12:21 p.m., 45 minutes after police arrived on the scene, four shots are heard, and at least a dozen officers move toward the classroom.

An officer says, "They're making entry."

Yet they do not.

At 12:30, an officer wearing a helmet and ballistic vest squirts hand sanitizer from a wall-mounted dispenser and rubs his hands together. Armed officers walk back and forth and discuss the classroom doors and windows. The hunt for the keys continues. One officer brings a sledgehammer. The audio from the surveillance camera at times is garbled, but it is loud in the crowded hallway.

At 12:41, a man wearing blue rubber gloves and a black shirt, khaki pants and a black baseball cap, with a stethoscope around his neck, arrives and speaks to officers. Other paramedics arrive with supplies. Two officers in camouflage fist-bump each other.

At 12:50, a cadre of officers crouches outside the classroom. After a burst of gunfire, the video ends. Authorities said a Border Patrol officer killed the gunman. Investigators await the results of an analysis from an Austin-based medical expert on how many victims died after police arrived. The video has been the subject of [an intense political debate](#): Gov. Greg Abbott and Uvalde Mayor Don McLaughlin urged its public release, and Uvalde County District Attorney Christina Mitchell Busbee opposed releasing it.

State Rep. Dustin Burrows, a Republican and the chairman of the House committee investigating the shooting, said Tuesday that the committee plans to show the hallway video to members of the Uvalde community Sunday, as well as discuss the panel's preliminary report. He plans to release both to the public. The video that the House committee will make available will not include footage of the gunman walking into the school and the view from the hallway of the gunman initially firing his way into the classrooms.

The video the Statesman obtained includes that footage. [Those seeking its release](#) said it would bring clarity to the families of victims and others in Uvalde traumatized by the shooting, especially after state leaders, including Abbott, presented shifting accounts of the police response. Abbott said he was misled but did not say by whom. Local, state and federal officials have denied requests to release documents that could shed light on the police response, including 911 call transcripts, body camera footage, communications between law enforcement officers and arrest records from that day. They have appealed to the office of Texas Attorney General Ken Paxton, who will make final decisions on the records disputes. Anger boiled over [Sunday night at a march and rally in Uvalde](#) for greater gun restrictions, where some residents said they no longer trust the local authorities and demanded answers.

**EDITOR'S COMMENT:** It happened in 2015 during the Bataclan attack (Paris). It happened again in the Uvalde school shooting.

The problem is not that the police cannot neutralize the terrorist. The problem is the lack of leadership in the field. The officer in charge must be able to weigh the pros and cons and take decisions in a second because in cases like this, time is life. Waiting for green lights and other bureaucratic nonsense costed lives in both cases. We need leaders; not mighty policemen! And leaders we do not have!



## Accelerationist Guide Calls for Metcalf-Style Attacks on ‘Sitting Duck’ Electricity Infrastructure

By Bridget Johnson

Source: <https://www.hstoday.us/subject-matter-areas/counterterrorism/accelerationist-guide-calls-for-metcalf-style-attacks-on-sitting-duck-electricity-infrastructure/>



July 15 – An accelerationist handbook being shared among extremist Telegram channels calls for shooters to bypass softer targets in favor of causing chaotic blackouts by emulating on a broader scale an unsolved sniper attack on a California transmission substation.

The cover of the 14-page PDF features a depiction of a masked and hooded gunman wielding a semiautomatic handgun with a suppressor affixed and wearing panoramic night-vision goggles. In the branches of a swastika behind the gunman are depictions of acts of violence including three people being hanged, a group of buildings ablaze, and a police car on fire next to a figure holding an incendiary weapon.

The document begins by asserting it is not a text aimed at radicalizing new adherents, as the author(s) assume that readers are already committed to “doing what you can to strike a blow to this system.”

While lauding with racist language “noble acts of violence” perpetrated by white supremacists, it brands the mass shooting in May at a supermarket in a Black area of Buffalo, N.Y., as “treating symptoms of the cancer, not the cause,” and argues that attackers should choose targets “that do the most damage to the system and spark revolution and chaos.”

“So long as the power turns on, the status quo, the downward decline of our race, and the increase in nonwhites in our lands will carry on unhindered,” the guide states, vowing to steer adherents to “more fruitful acts that will REALLY harm the system and brings us closer to the collapse that is needed for our race to once again thrive on this planet.”

The document refers to the power grid as “the main thing that keeps the anti-White system going” and calls power distribution substations “sitting ducks, worthy prey” that are “largely unprotected and often in remote locations,” setting the stage for a spree of attacks.

The 2013 incident in which multiple gunmen opened fire on the Pacific Gas and Electric Company’s Metcalf Transmission Substation south of San Jose, Calif., causing more than \$15 million in damage to 17 transformers, is commonly referenced on social media by domestic extremists — especially accelerationists and ecofascists — as an example of how to inflict damage on electricity infrastructure



with the goal of hastening governmental and societal collapse. There have been no arrests in the attack, and there was not significant impact on customers' power.

The new accelerationist guide theorizes that the power grid could be "crippled" over a large area if three similar substations were struck simultaneously or within days of each other with "armor piercing rounds," arguing that with an extended blackout "all hell will break lose [sic]" and white supremacists would be poised to take control. Referencing the practice of extremists bestowing "sainthood" upon mass shooters who meet certain criteria, the document declares that an extremist who successfully attacks the power grid would be revered "above Sainthood when the lights don't turn back on and we are plunged into urban warfare."

The guide also mentions "telecommunications/Internet, oil transportation/pipelines, water lines, and similar things" as being prime targets because "they allow for all that we hate and despise" by supporting a diverse population.

As the document declares that Metcalf-style sniper attacks would be "unquestionably more effective" than a grocery store mass shooting, the pages' background shows news images of fires at various electricity substations.

The guide continues by counseling extremists in conducting assassinations against figures other than "low hanging fruit," using the Manson Family murders as their example of an attack suitable in "barbarity and gruesomeness" and advising attackers to "let hatred be personified by your actions." The document also encourages "urban guerrilla sniping" with 1966 UT Austin clock tower shooter Charles Whitman used as an example of a sniper who blended into his surroundings. In a subsequent section on "urban camouflage," the guide encourages extremists to "learn from the IRA's successful examples of insurgency, especially if you are meeting with a small group of comrades"; that page also includes a photo of the car used in the 2002 D.C. sniper attacks while advocating that shooters use similar tactics.

Attacks against cellular towers are also encouraged — with the accelerationist guide calling them "towers of hell" — along with satellite broadcasting systems.

The document concludes with a call for gas or firearms attacks against "Jewish think tanks" and places crosshairs over a photo of Senate Majority Leader Chuck Schumer (D-N.Y.) speaking at an Anti-Defamation League event.

In January, a Department of Homeland Security memo warned that domestic violent extremists including white supremacists and accelerationists continue to aspire to attack the power grid utilizing encrypted messaging platforms and simple tactics that could make a plot harder to detect in the planning stages.

The Office of Intelligence and Analysis document produced at the request of energy-sector stakeholders said that the dispersed nature of electricity infrastructure — with more than 6,400 power plants, 55,000 substations, and 450,000 miles of high-voltage transmission lines serviced by 3,000 companies — leads extremists to believe that they will have breathing room to commit an attack and escaped undetected, perceptions "likely reinforced" by the Metcalf attack.

Since at least 2020, domestic violent extremists have developed "credible, specific plans" to attack energy infrastructure, noting the downstream affects that taking out power would have on other critical infrastructure sectors. Even small-scale attacks, which are more likely without insider help or "significant technical knowledge," pose risks to operations or personnel, the memo noted.

One of the cases cited by DHS I&A was the [indictment](#) last year that alleges a quartet of neo-Nazi accelerationists — some with military experience — "discussed their plans to take out the power grid," including "a handwritten list of approximately one dozen intersections and places in Idaho and surrounding states" that "contained a transformer, substation, or other component of the power grid for the northwest United States, that if destroyed could cause damage exceeding \$100,000 to the power grid." Also noted was the 2020 case in which a trio of professed Boogaloo adherents allegedly [plotted](#) to attack a power substation in Las Vegas as part of a wider accelerationist plot to stoke violence and chaos in the city.

Online narratives have also been attempting to inspire physical attacks on energy infrastructure with a range of tactics adapted to the perpetrator's skillset, the memo stated. As HSToday previously [reported](#), a neo-Nazi National Socialist Order video posted on Telegram last year used simple animation to encourage followers to identify allies and enemies and finally act — and the first "act" depicted an individual chucking an incendiary device at a power substation that subsequently bursts into flames. The video encouraged followers to educate themselves with books such as *The Turner Diaries* before attacking. The Base, another neo-Nazi group, in New Jersey distributed a 2019 propaganda image showing two members saluting in front of power lines.

One social media account that was sharing accelerationist memes and references to the Boogaloo Bois posted an animated meme depicting a masked shooter in front of a power substation to the tune of "Electric Avenue." Another meme posted on YouTube in April 2020 and circulated in other online forums asked people to "repost if you would dismantle the electrical transmission grid with your male followers" and included a short video showing an unknown individual blowtorching the leg of a transmission tower.

A Joint Intelligence Bulletin released late last year from DHS, FBI and the National Counterterrorism Center to law enforcement said that on July 16, 2020, a small, four-rotor off-the-shelf drone was discovered on the top of a building next to a Pennsylvania power substation. Nylon ropes hanging from



the drone dangled a two-foot curved piece of copper wire, and analysis of the device indicated that this was likely intended to short circuit the substation in “the first known instance of a modified UAS likely being used in the United States to specifically target energy infrastructure.”

Online posts that emphasize how power stations are a vulnerable and enticing target for violent extremists also commonly cite founder of the [eco-fascist Pine Tree Party](#) Mike Ma: “Electricity is a ghost, but one you can catch and kill... Do not become the sort of person who gets really good at blowing power stations up while never getting caught,” Ma wrote in his 2019 book *Harassment Architecture*.

**Bridget Johnson** is the Managing Editor for Homeland Security Today. A veteran journalist whose news articles and analyses have run in dozens of news outlets across the globe, Bridget first came to Washington to be online editor and a foreign policy writer at The Hill. Previously she was an editorial board member at the Rocky Mountain News and syndicated nation/world news columnist at the Los Angeles Daily News. Bridget is a terrorism analyst and security consultant with a specialty in online open-source extremist propaganda, incitement, recruitment, and training. She hosts and presents in Homeland Security Today law enforcement training webinars studying a range of counterterrorism topics including conspiracy theory extremism, complex coordinated attacks, critical infrastructure attacks, arson terrorism, drone and venue threats, anti-Semitism and white supremacists, anti-government extremism, and WMD threats. She is a Senior Risk Analyst for Gate 15 and a private investigator. Bridget is an NPR on-air contributor and has contributed to USA Today, The Wall Street Journal, New York Observer, National Review Online, Politico, New York Daily News, The Jerusalem Post, The Hill, Washington Times, RealClearWorld and more, and has myriad television and radio credits including Al-Jazeera, BBC and SiriusXM.

●► Read also: [The Threat Is the Network: The Multi-Node Structure of Neo-Fascist Accelerationism](#) (2021)

## The Role of Women in Terrorism in Africa – Analysis

By Saman Ayesha Kidwai and Sindhu Dinesh

Source: <https://www.eurasiareview.com/17072022-the-role-of-women-in-terrorism-in-africa-analysis/>



July 17 – Africa has been an epicenter of violent extremist activities, for the past few decades. As per the Global Terrorism Index 2022, 48 per cent of the global terrorism deaths took place in Sub-Saharan Africa. The Sahel region is ‘home to the world’s fastest growing and most-deadly terrorist groups’.<sup>1</sup> The poor socio-economic conditions, ideological trends, and weak governance have been causes for terrorist outfits laying inroads into African countries. Studies indicate that women play active roles in sustaining and facilitating extremist activities on the continent.<sup>2</sup> There has also been an increase in the cases of women being arrested in terror-related incidents.<sup>3</sup>

### Women vis-à-vis Terrorism in Africa

Women play multiple active and passive roles in carrying out terrorist activities. They are strategic as well as tactical actors for a terrorist organisation. Each parental organisation, such as the ISIS, their affiliates, or independent terrorist organisations, have relied on women to varying capacities to attain their goals. Women have assumed the roles of propagandists, recruiters, and participated in combat operations. ISIS, in Kano, Nigeria, has created all-women morality police units, *Hisbah*, to ensure other women toe the line on issues like dress codes, among others.<sup>4</sup>

While groups like the Al-Qaeda have restricted women to their societal roles of a wife and a mother, within the African context, groups such as Al-Shabaab in Somalia have exploited the society’s



regressive understanding of women to their advantage. Women have been actively used to recruit, gather intelligence, disseminate propaganda, and shame other men into joining the jihadist cause. They have also raised funds and smuggled goods across checkpoints, evading security checks.<sup>5</sup>

The absence of adequate women's participation in the police forces has also played into the terrorists' hands as they are well aware that male officers, due to gender and cultural sensitivities, will refrain from indulging in security checks on women. By February 2022, only 1,400 women had been recruited into the Somali Police Force, for instance, out of the total 14,000 individuals serving as police officers.<sup>6</sup> Furthermore, out of 300 members in *Darwish*, a special unit of the police force, only 30 women have been recruited into the ranks.<sup>7</sup>

The factors that propel women's involvement in organisations like the Al-Shabaab stem from avenging the death of their kins on account of state-sponsored violence or due to ideological commitment. Recruiters exploit the fact that everyone in Al-Shabaab-controlled territories are mandated to receive religious education.<sup>8</sup> Women have also married into the group for financial and physical security as the Somali state can provide neither.

Groups such as Boko Haram in Nigeria have used coercion to recruit young women into their ranks as suicide bombers. Using a similar strategy as Al-Shabaab's, they exploit the regressive gender narrative and rely on primarily dispensable foot soldiers, i.e., women and teenage girls, to cause instability and chaos. During the period 2011–17, Al-Shabaab had used 244 women as suicide bombers.<sup>9</sup> A predominant factor for women to be involved in violent extremism is economic grievance and poverty. Many women who have joined Al-Shabaab are primarily from poor areas such as Majengo, Garissa and Kwale in Kenya. These women are coerced into joining extremist organisations as fighters or informants, on the pretext of securing job opportunity.<sup>10</sup> The terrorist outfits purposefully create a situation where access to resources is denied, rendering the people with no choice but to join the outfit as a means to provide for livelihood.<sup>11</sup> Besides, the involvement of their family members and friends in such groups also adds to the pressure. Corruption and lack of political capacities to provide for the people frustrates the local population to join terrorist groups to punish the government and state forces. Of the several case studies in Africa to understand the role of women in terrorism, security trends in Western Africa and the Sahel provide compelling insights. The region surrounding northern Mali and bordering Niger and Burkina Faso is plagued with multiple violent extremist outfits, including Islamic State affiliate—Islamic State in the Greater Sahara (ISGS), AQIM, Jama'a Nusrat ul-Islam wa al-Muslimin (JNIM) and others.<sup>12</sup>

The Islamic State has been openly receptive to including women into the rungs of its organisation and it even has a separate female brigade, 'Al Khansaa Brigade'.<sup>13</sup> The JNIM, while publicly denying the use of women as suicide bombers, does include them as informants and for other domestic support.<sup>14</sup> The AQIM, on the other hand, has indulged in the practice of 'jihadi brides' and encouraged its members to marry the locals to gain local support.

One of the reasons which add to the complexity of the security situation in Mali is the nexus and linkages between local insurgent rebels and external organised terrorist outfits. One dimension of this linkage is that jihadist leaders marry women of the local communities, thus securing a sense of safety, support and belongingness to the people. A classic example is the case of AQIM leader, Mokhtar Belmokhtar, who married four women from Tuareg and Arab Berabiche communities to 'expand his [network](#) of influence'.<sup>15</sup>

### Mitigation and DDR Measures

The foremost step in addressing this pressing issue is the imperative of government authorities and regional organisations acknowledging this phenomenon. Unfortunately, governments are often guilty of dealing with the threat of violent extremism as 'mambo yavijana' (Kiswahili term denoting 'issues of male youth'), a phrase generally used for describing violent extremism. As a result, governments overlook the fact that women are visibly important actors in the domain of violent extremism. Therefore, there is a need for gender-sensitisation of counter-terrorism activities.

The success of states' mitigation strategies is contingent on developing and maintaining cohesive and efficient institutional structures which provide swift justice, holistic development, and security, across fault lines. However, this requires a long-term commitment to rebuilding the state capacities by domestic and regional actors—aided by external support, not interference.

The short-term adhesive that should be applied includes gender sensitising ongoing rehabilitation programmes and demobilisation, disarmament, and reintegration (DDR) measures. This is necessary to aid women who have left behind a life of terror voluntarily or due to the death of their husbands and to help them re-assimilate with the mainstream society that would be wary of accepting them. They need additional support in dealing with the mental anguish of surviving abuse, lack of adequate access to issues relating to women's health, or finding employment to sustain their families.

Without adequate support, such women could suffer in detention camps or go back to violent activities. This will legitimise the propaganda of terrorist groups about the states' indifference towards ordinary citizens while elites exploit primary resources, as in Syria's Al-Hol Camp.<sup>16</sup> The absence of security



measures and deplorable conditions make the detainees susceptible to recidivism or indoctrination by recruiters who have maintained a visible presence. In addition, the terrorists can use such issues to convince the camp residents that they would fare better living under ISIS' rule rather than under Kurdish control. The prospects of repatriation to their home countries where they would face persecution or be stripped from their families is another big concern. The role of regional organisations is also equally important. The UN Office on Drugs and Crime (UNODC) held an event on 19 May 2021, along the margins of the UN Commission on Crime Prevention and Criminal Justice, titled 'Addressing Gender in Preventing Violent Extremism and Terrorism in Africa: Integrating Women's Diverse Roles and Voices'.<sup>17</sup> UNODC's regional partners in Africa, like the Cairo International Centre for Conflict Resolution, Peacekeeping and Peacebuilding, African Union's (AU) Centre for the Study and Research on Terrorism and other organisations, participated in the discussions. It was emphasised that there needs to be a greater understanding on the roles women play in order to develop tailored strategies against violent extremism. The need for building institutional and community resilience, empowerment of women, increase in participation and representation of women in counter-terrorism and criminal justice agencies, among others, was stressed. As part of fulfilling Aspiration 4 of Agenda 2063, the Peace and Security Architecture (APSA) of the AU could take steps to recognise the role of women in terrorism.<sup>18</sup> With this as a launch pad, additional DDR measures could be taken. AU could empower governments with guidelines to implement the same. Any counter-terrorism measures that do not consider the subtle yet critical roles women play in extremist outfits would be ineffective.

### Conclusion

The involvement of women in terrorist activities in Africa is nuanced, multi-layered, and dynamic. Women have advertently or inadvertently proliferated into terrorist outfits and have played supporting and enabling roles in these organisations. Violent extremist groups like the AQIM, JNIM, and others deal with the involvement of women differently. While some encourage and actively enable their role, others publicly denounce women's inclusion even while relying on them. Furthermore, while some organisations only include women for tactical roles like cooks, recruiters, others have them for strategic roles like suicide bombers and informants. It is imperative for affected states to engage in capacity-building through a bottom-up approach, taking on board local religious and community representatives. The AU should play an essential role in recognising the role of women in terrorism and tackling the threat the phenomenon poses. Successful state and civil society initiatives against terrorism are also hinged on measures to ensure their ideological defeat. This is because, even if violent extremist actors are eliminated or their organisations are disbanded, their ideological influence continues to foment fear and instability.

*Views expressed are of the author and do not necessarily reflect the views of the Manohar Parrikar IDSA or of the Government of India.*

●► References are available at the source's URL.

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## Alleged terror group planned attacks on Sydney naval base, court and Mardi Gras, court told

Source: <https://www.smh.com.au/national/nsw/alleged-terror-group-planned-attacks-on-sydney-naval-base-court-and-mardi-gras-court-told-20220719-p5b2rw.html>

July 19 – A senior member of an alleged terror cell that pledged allegiance to Islamic State at an idyllic beach on Sydney's southern fringe also played host to gatherings where plans were made to target major landmarks and events for violent attacks, a court has been told. Hamdi Alqudsi, 47, is on trial accused of being the ringleader of an Islamic State-aligned group that initially arranged to send foreign fighters into Syria, but by late 2014, frustrated by the intervention of Australian authorities, allegedly began to plan attacks on home soil. Hamdi Alqudsi has pleaded not guilty to directing a terrorist organisation and denies any interest in terrorism or involvement in planning attacks on Australian targets.





The alleged targets of these planned attacks included the Navy's major fleet base at Woolloomooloo in Sydney's east (photo, right), the Sydney Mardi Gras, the Israeli embassy, a courthouse, and "random unbelievers" on the street – preferably "a tourist or backpacker", Crown prosecutor Trish McDonald, SC, said during her opening statement in the NSW Supreme Court on Tuesday. He also plotted to fly ISIS flag on Sydney Harbour Bridge!

Alqudsi has pleaded not guilty to directing a terrorist organisation and denies any interest in terrorism or involvement in planning attacks on Australian targets.

His barrister, Michael Finnane, QC, said Alqudsi had agreed he was the most senior member of the group, known as a "shura" or Islamic council, which held "regular meetings for purposes of sending people to Syria" to fight against the Assad regime.

However, he denied responsibility for the actions of others in the group, or that his senior role meant he "made all the decisions or compelled people to do what he wanted", Finnane said.

McDonald said the court would hear evidence that members of the group, which was under surveillance at the time, travelled to Wattamolla Beach in the Royal National Park south of Sydney in 2013, where they pledged allegiance to Islamic State. The pledge, or "bay'ah" was later accepted by Islamic State leaders in Syria, who offered ideas for attacks in Australia, McDonald said.

She said the court would hear that messages were relayed from Syria, including suggestions to target the Sydney Mardi Gras, picking "any random unbeliever" to kill, and videoing themselves hoisting the IS flag on the Sydney Harbour Bridge while making the pledge or "bay'ah".

The court would also hear that during gatherings hosted by Alqudsi, including a picnic by the Georges River which was also surveilled, the group made their own plans for possible attacks on Sydney targets. They allegedly included an attack on the Navy base at Woolloomooloo and Alqudsi's own idea to attack a courthouse, McDonald said.

The Crown's evidence will include items gathered during raids on the homes of the group members, as well as information gathered via phone intercepts, CCTV and devices tracking vehicles.

Finnane said that his client maintains the shura was "not a criminal organisation" and that he would never do anything against Australia.

**The trial continues.**



**EDITOR'S COMMENT:** The last small sentence of the article is the big problem!

## Al-Qaida Positioned to Surpass Islamic State Among Jihadis

By Jeff Seldin

Source: <https://www.voanews.com/a/al-qaida-positioned-to-surpass-islamic-state-among-jihadis-/6665672.html>

July 19 – Al-Qaida, boosted by leadership stability and the Taliban takeover of Afghanistan, appears to be positioning itself to once again be seen as the world's preeminent terror group and as the greatest long-term threat to the West.

Intelligence shared by United Nations member states and published in a new report Tuesday, finds al-Qaida is enjoying a degree of freedom under Taliban rule that has allowed its leadership to communicate more often and more easily with affiliates and followers, and sell itself as a more attractive option than its rival, the Islamic State terror group, also known as IS, ISIS or ISIL.

"The international context is favorable to al-Qaida, which intends to be recognized again as the leader of global jihad," according to the U.N. report.



"Al-Qaida propaganda is now better developed to compete with ISIL as the key actor in inspiring the international threat environment, and it may ultimately become a greater source of directed threat," the report added, noting that IS "has suffered a rapid succession of leadership losses since October 2019, with an as yet unknown impact on its operational health."

The report further concludes that al-Qaida leader Ayman al-Zawahiri, long rumored to be in ill health or dying, is "alive and communicating freely."

The intelligence shared by U.N. member states also concludes al-Qaida has cemented its leadership team in order of seniority, with Zawahiri being followed by Saif al-Adel, long seen as his likely successor, Yazid Mebrak with al-Qaida in the Arabian Peninsula (AQIP), and by Ahmed Diriye with al-Qaida's Somali affiliate al-Shabab.

At least one U.N. member state intelligence agency said al-Qaida now appears to favor its African affiliates over al-Qaida in the Arabian Peninsula (AQAP), a potentially monumental shift given AQAP's history of plotting attacks against the West, like the December 2019 shooting at the U.S. Naval Air Station in Pensacola, Florida.

The intelligence findings also suggests that al-Shabab, in particular, may be gaining financial leverage, with one U.N. member state reporting that the Somalia-based affiliate is using some of its \$50 million to \$100 million in yearly revenue to directly support al-Qaida's core leadership.

[#alQaida](#) affiliate [#alShabaab](#) commands an estimated 7,000-12,000 fighters, per [@UN](#) member state intelligence - in line with earlier estimates Report says alShabaab makes \$50-\$100 million per year & has a \$24 million annual budget for weapons/explosives — Jeff Seldin (@jseldin) [July 19, 2022](#)

### An 'underestimated' al-Qaida

"It is entirely clear that Zawahiri has been shamefully underestimated," Daveed Gartenstein-Ross, a counterterrorism analyst and the CEO of threat analysis firm Valens Global, told VOA. "Al-Qaida is a stronger organization today by far than when Zawahiri first took the reins."

Other analysts say the U.N. report calls into question the long-term effectiveness of U.S. and Western counterterrorism strategies.

"Even after 20 years, some of al-Qaida's most senior operatives remain at large and are ready to carry on the mantle of jihad," Katherine Zimmerman, a fellow at the American Enterprise Institute, told VOA.

"Al-Qaida's bench remains deep even after serious attrition," she texted. "The next generation has now been fighting for 20 years ... they are just as experienced (and perhaps with lessons-learned) as OBL [Osama bin Laden], Zawahiri, and Saif al Adel were on 9/11."

### A renewed threat?

But there are questions as to when and whether al-Qaida's core leadership will push for renewed attacks against the West.

"Attacking the U.S. is not the be-all and end-all for al-Qaida," Gartenstein-Ross said. "For the past decade or so, it has deprioritized 9/11 style attacks against the United States for a variety of reasons, including that al-Qaida enjoys many more opportunities within the region."

The U.N. report similarly cautions that while al-Qaida may be better positioned, it is likely to refrain from launching external attacks in order not to embarrass Afghanistan's Taliban rulers and because the al-Qaida core still lacks "an external operational capability."

U.N. member state intelligence agencies, in contrast, view the threat from Islamic State as immediate despite a series of operations by the U.S. and others that have whittled away at the group's senior leadership.

U.N. member states, according to the report, "observed no significant change of direction for the group or its operations in the core conflict zone."

IS, which still commands 6,000 to 10,000 fighters across Syria and Iraq, "remains a resilient and persistent threat owing to its decentralized structure and ability to organize complex attacks."

The report further finds that IS has developed a network of nine regional offices – in Syria, Iraq, Turkey, Afghanistan, Somalia, Africa's Lake Chad Basin, Libya, Yemen, and Egypt's Sinai Peninsula – "to sustain the group's global capability and reputation."

Intelligence from various member states indicates some of the offices are "a work in progress."

The Turkey-based office, known as al-Faruq, is mostly defunct following a series of key arrests by Turkish authorities. IS offices in Libya, Yemen and the Sinai are likewise described, for the moment, as "low-functioning or moribund."

But U.N. member state intelligence suggests IS' offices in Afghanistan, Somalia and the Lake Chad Basin are functioning well.



The al-Karrar office in Somalia, for example, appears to have become a key financial hub for IS despite the terror group's limited presence in the country, moving funds from Yemen to Afghanistan to help buy weapons and pay the salaries of IS fighters in multiple locations.

### Islamic State leadership

U.N. member states, though, have not resolved the question of who is leading IS following the death of its previous leader in February. The report says intelligence agencies have coalesced around three possibilities for the identity of the man known by the nom de guerre Abu al-Hassan al-Hashimi al-Qurashi.

Iraqi national Bashar Khattab Ghazal al-Sumaida'i is "cited as the most likely candidate," according to the report. The other likely candidates are Juma'a Awwad Ibrahim al-Badri, the brother or former IS leader Abu Bakr al-Baghdadi, and Abd al-Raouf al-Muhajir, who led the IS general directorate of provinces.

In May, Turkish officials claimed to have captured the new IS leader during a raid in Istanbul.

Intelligence shared by some U.N. member states for the report suggested that the official captured by Turkish authorities is likely al-Sumaida'i.

Neither U.S. nor Western counterterrorism officials have publicly confirmed the Turkish claims, but multiple officials speaking to VOA on the condition of anonymity in order to discuss intelligence have said the person in custody is a senior IS official.

**Jeff Seldin** serves as VOA's National Security Correspondent tracking developments in intelligence, counterterrorism, and cyber since March 2015, following a stint covering the Pentagon. His current focus has been on terror groups such as ISIS and al-Qaida, while also covering U.S. election security, as well as covering developments with Russia, China, North Korea and other global hotspots.

## Security fears stalk 2024 Paris Olympic organisers

Source: <https://www.france24.com/en/live-news/20220722-security-fears-stalk-2024-paris-olympic-organisers>

July 22 – Two years out from Paris hosting the Summer Olympics there is widespread concern over security, exacerbated by the dreadful spectacle of the chaotic scenes at the Champions League final at the Stade de France.

Police tear-gassing frustrated Liverpool fans, including children and the disabled, was not the fault of the supporters but, according to a damning fact-finding mission by two French senators, the fault of the organisers.

"These dysfunctions were at every level, not only during the implementation but also during advance preparations," said the co-chair of the enquiry Laurent Lafon.

The debacle set alarm bells ringing with next year's Rugby World Cup being hosted in France but most of all for those dealing with security issues around the Olympics.

"Hopefully this serves as a wake-up call for everybody," a security source told AFP.

The nervousness surrounding security at the Olympics led French Interior Minister Gerald Darmanin to set a clear roadmap for new Paris police chief Laurent Nunez, who has replaced Didier Lallement.

"You will be the prefect of police in charge of the Olympics and the entire police prefecture must be geared towards that," Darmanin said during Nunez's inauguration ceremony.

A government source told AFP the disastrous sequence of events at the Champions League final would "stick to them like a plaster up to the Olympic Games".

With 13 million visitors expected and 15,000 athletes competing, the level of anxiety over the massive security operation at the Olympics was already high.

For months the biggest security headache for the organising committee has been the Opening Ceremony on the Seine on July 26.

On paper, the ceremony promises to be stunning, with the teams on around 180 boats travelling down the Seine, through the heart of the City of Light.

On the banks, an estimated 600,000 spectators will take in the spectacle, half a million of them free of charge.

Spectacular indeed, not least for the global television audience, but a massive security headache.

"We are not ready at all," said the government source.

"If a drone drops grenades onto the crowds below we do not know how we will neutralise them."



PARIS 2024



**'Holes in the racquet'**

Fears over a drone attack is nothing new. There have been worries in the past that events such as marches might be targeted. "It is the magnitude of the crowds spread out over six kilometres of the banks of the Seine which is the problem," the source added. That is accentuated by a dispute between the organising committee and the police.

The former wants to see spectators lining the entirety of the route, whilst the latter want everyone attending issued with a ticket and placed in enclosures along the river.

"This is a clash of two contrasting philosophies," a source from Paris-2024 told AFP.

The biggest problem for the police in providing security for the ceremony is a lack of available officers.

According to a police source, it would require "nearly 7,000 officers" which in the height of summer is all but impossible.

The deficit in numbers cannot be filled by private security guards as they have fallen short of hiring the 24,000 it is believed are needed for the Games.

"We do not have the numbers," Bernard Thibault, a member of the organising committee told AFP in mid-April.

The shortage of private security staff is a throwback to London in 2012 and Tokyo last year when both host cities were forced to fall back on the military. In both cases, operations ran smoothly.

Paris 2024 is likely to follow the lead of London and Tokyo and rely on the military to boost security David GANNON AFP/File

"It is plain and simple," a highly-placed police source told AFP.

"The 24,000 agents required for the Games do not exist, and never will.

"The army will be called on to do the job."

The authorities have also prioritised preventing cyber-attacks -- the Olympics has been a high profile target for years.

According to a source close to the organisers, several hundred cyber-investigators from the French Interior Ministry will be keeping an eye on potential attacks.

An Olympic intelligence centre has also been set up, as promised in the 2018 Olympic Law, to combat any risk of an attack.

Despite these measures the highly-placed police source believes there needs to be a greater sense of urgency.

"Clearly for the moment there are still holes in the racquet. So we better get our skates on."

●► Under publication: **Paris 2024 Olympic Games Opening Ceremony – Innovant? Oui! Sécurisé (CBRNe/NBCe)? Non!**  
By Brig General (ret.) Ioannis Galatas, MD and Julien Marx





# AI - NEWS



**C<sup>2</sup>BRNE**  
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## Nanotechnology to Aid Chemical and Biological Defense

Editor: Terri A. Camesano

SPS Reference: G4627 | Part of the book series: NATO Science for Peace and Security Series A: Chemistry and Biology (NAPSA)

Source: <https://link.springer.com/book/10.1007/978-94-017-7218-1>

**Abstract:** This book presents research into chemical, biological, radiological and nuclear (CBRN) defense and environmental security, exploring practical implications of the research. Contributions from a diverse group of international civilian researchers present the latest work on nanotechnology problems in this area, looking at detection, protective technologies, decontamination and threats to environmental security due to bacteriophages and nanomaterials.

Highlights include the potential of Atomic Force Microscopy (AFM) to characterize the nanoscale properties of microbial pathogens, the development of bacteriophage-based therapeutics, prophylactic and diagnostic preparations and their uses in different fields, such as medicine, veterinary, agriculture, food and water safety, amongst others.

Readers may also consider an inexpensive bioassay suited for assessing chemical poisoning in the environment such as the presence of pesticides, sensors to detect ultra-trace quantities of the explosive Pentaerythritol tetranitrate (PETN) using nanotubes and electrochemical sensors to simultaneously detect and reduce the explosive trinitrotoluene (TNT) to 2,4,6-triaminotoluene (TAT) in solution.

This book shows how cooperative research among NATO countries and NATO partners can make a critical contribution to meeting the opportunities and challenges of nanotechnology problems relevant to chemical and biological defense needs. The papers presented here are representative of contributions made to the Advanced Research Workshop (ARW) on September 22-26, 2014 in Antalya, Turkey, to address the NATO SPS Key Priority of Defense against CBRN Agents and Environmental Security.

## Nanomaterial Fabric Destroys Nerve Agents

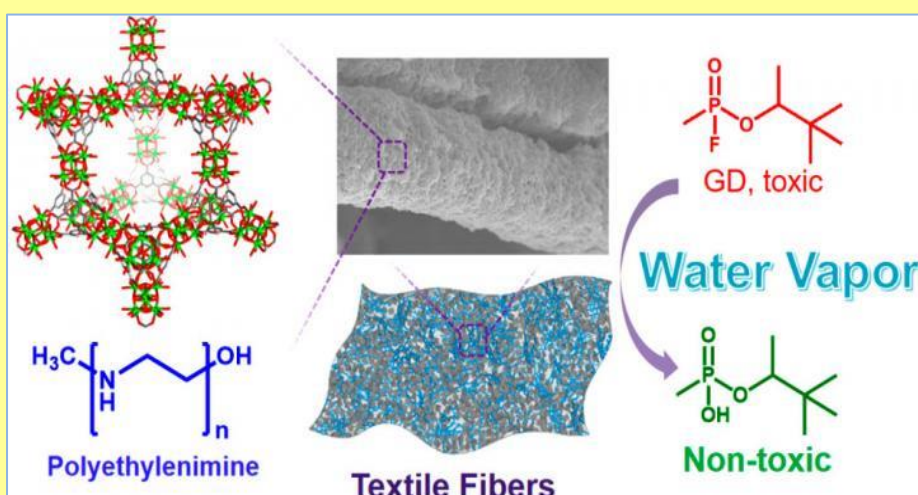
*Journal of the American Chemical Society*

Source: <https://cbrnecentral.com/nanomaterial-fabric-destroys-nerve-agents/22541/>

Jan 2020 – [Northwestern University](https://www.northwestern.edu) scientists have successfully combined a nanomaterial effective at destroying toxic nerve agents with textile fibers. This new composite material one day could be integrated into protective suits and face masks for use by people facing hazardous conditions, such as chemical warfare.

The material, a zirconium-based metal-organic framework (MOF), degrades in minutes some of the most toxic chemical agents known to mankind: VX and soman (GD), a more toxic relative of sarin.

“With the correct chemistry, we can render toxic gases nontoxic,” said Omar K. Farha, associate professor of chemistry in the Weinberg College of Arts and Sciences, who led the research. “The action takes place at the nanolevel.”



The new composite material integrates MOFs and non-volatile polymeric bases onto textile fibers. The researchers found the MOF-coated textiles efficiently detoxify nerve agents under battlefield-relevant

The study was published recently in the *Journal of the American Chemical Society*.

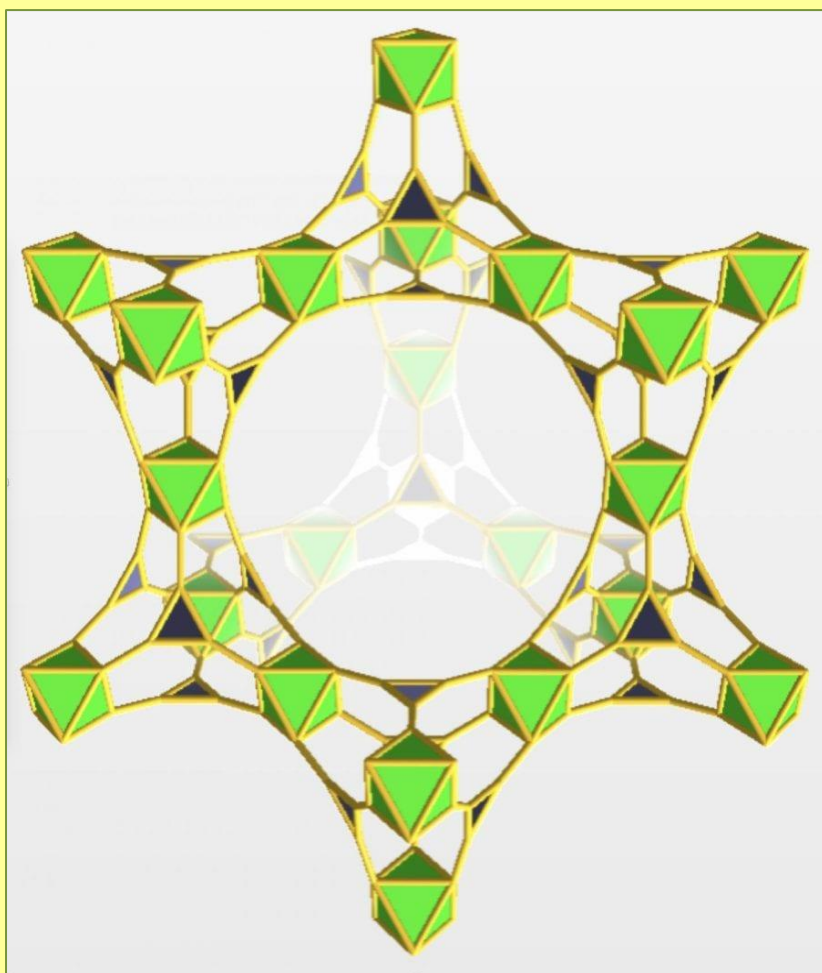
The authors write that their work represents, to the best of their knowledge, the first example of the use of MOF composites for the efficient catalytic hydrolysis of nerve agent simulants without using liquid water and toxic volatile bases — a major advantage.

Integration of metal-organic frameworks on protective layers for the destruction of nerve agents under relevant conditions. Credit: *Journal of the American Chemical Society*

The new



conditions using the gaseous water in the air. They also found the material stands up over a long period of time to degrading conditions, such as sweat, atmospheric carbon dioxide and pollutants.



These features bring the promising material closer to practical use in the field.

“MOFs can capture, store and destroy a lot of the nasty material, making them very attractive for defense-related applications,” said Farha, a member of the International Institute for Nanotechnology.

MOFs are well-ordered, lattice-like crystals. The nodes of the lattices are metals, and organic molecules connect the nodes. Within their very roomy pores, MOFs can effectively capture gases and vapors, such as nerve agents.

It is these roomy pores that also can pull enough water from the humidity in the air to drive the chemical reaction in which water is used to break down the bonds of the nerve agent.

Composites made from metal-organic frameworks can destroy nerve agents under relevant conditions. Credit: Journal of the American Chemical Society

The approach developed at Northwestern seeks to replace the technology currently in use: activated carbon and metal-oxide blends, which are slower to react to nerve agents. Because the MOFs are built from simple components, the new approach is scalable and economical.

The research is supported by the [Defense Threat Reduction Agency](#) and National Science Foundation.

●► Read the paper: [Integration of Metal-Organic Frameworks on Protective Layers for Destruction of Nerve Agents under Relevant Conditions](#). *Journal of the American Chemical Society*, 13 December 2019. DOI: 10.1021/jacs.9b11172

## Nano-MOF System as a Potential Nerve Agent Antidote Carrier

Source: <https://cbrnecentral.com/nano-mof-system-potential-nerve-agent-antidote-carrier/10868/>

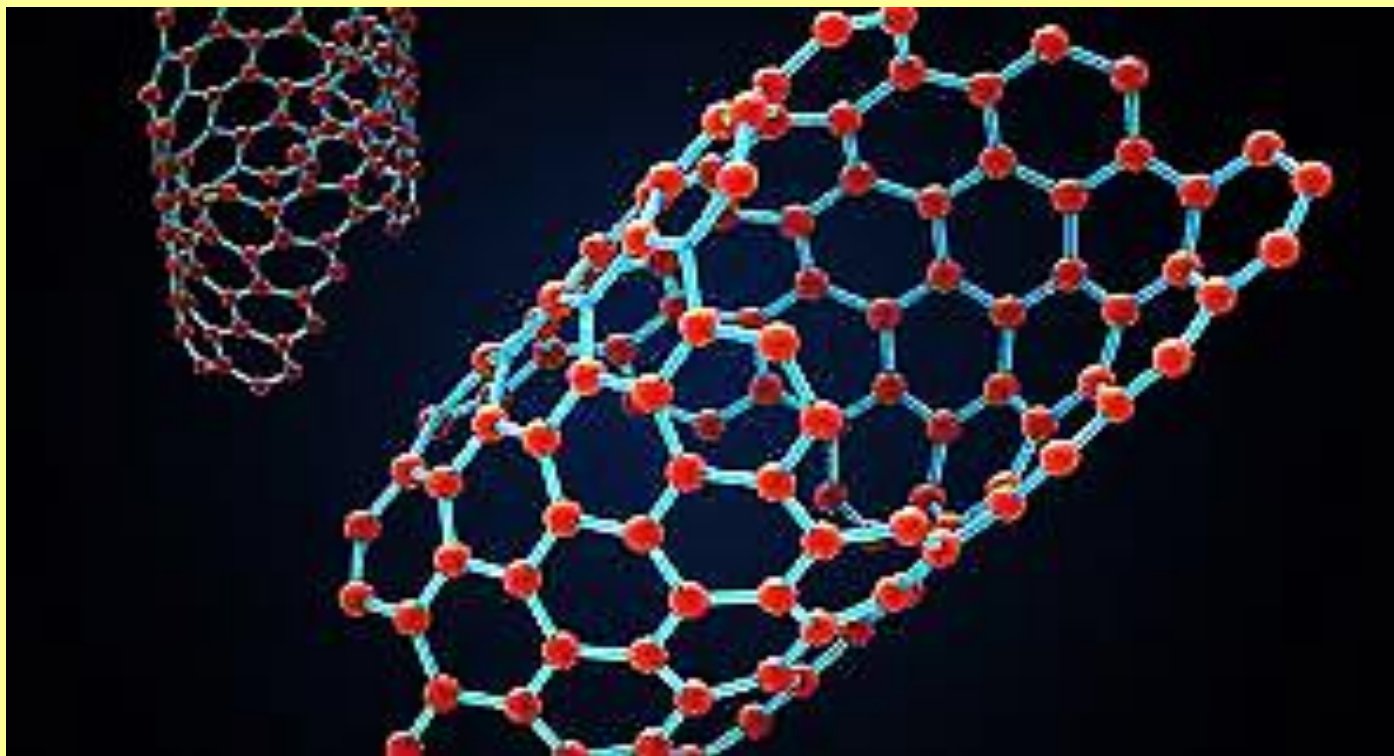
Dec 2017 – Despite the proven interesting features of some biocompatible Metal-Organic Framework nanocarriers in the encapsulation and release of many different therapeutic molecules, nerve agent antidotes have not been adequately addressed.

Organophosphate compounds are known for their ability to inhibit acetylcholinesterase (AChE) by forming a covalent bond with a serine residue in the active site of AChE. Inhibition of AChE causes accumulation of ACh in the synapses and overstimulation of ACh receptors, resulting in severe symptoms such as convulsions, flaccid muscle paralysis, seizures and ultimately, death.

Current therapeutic treatments of this chemical agent poisoning includes administration of atropine, diazepam, and a compound generally referred to as “oxime”, which is capable of restoring the activity of AChE. An example of such an oxime is pralidoxime or 2-PAM.

This manuscript describes the successful preparation of high yields of microporous titanium aminoterephthalate monodispersed MIL-125-NH<sub>2</sub> nanoparticles by using a simple, safe and low-cost methodology. These colloiddally stable MIL-125 NH<sub>2</sub> solutions were able to effectively encapsulate the nerve agent antidote 2-PAM into the MOF pores.





Further research could improve control over the drug delivery kinetics, thus improving the 2-PAM half-life. Given the simplicity of preparing MIL-125-NH<sub>2</sub> nanoparticles and its remarkable colloidal stability, this nano-MOF system seems to be a powerful tool for application in biomedicine and other relevant fields requiring stable colloidal solutions.

●► Read the study at *Nanomaterials*: [Nanometric MIL-125-NH<sub>2</sub> Metal–Organic Framework as a Potential Nerve Agent Antidote Carrier](https://doi.org/10.3390/nano7100321) (doi:10.3390/nano7100321).

#### Read also

##### [Chemical Nerve Agent Pre-Exposure Antidotes](#)

An enzyme called organophosphorus acid anhydrolase (OPAA) has attracted attention recently for its ability to break down nerve agents. But the body's immune system gets rid of it quickly. Packaging the enzyme in liposome nanocarriers gives the antidote greater staying power, but handling and storing the liposomes is complicated. Researchers sought to make a potentially simpler carrier. [Global Biodefense](#)

##### [In Wake of Syrian Chemical Attacks, Scientists Seek to Improve Sarin Antidotes](#)

More than 1,400 people, including an estimated 426 children, died in the August 2013 gas attack, according to US intelligence estimates. Syrian doctors had only limited amounts of antidotes against the nerve gas. Medical staff around Damascus reportedly had a total of some 50,000 ampoules of atropine, a drug that blocks the receptor responsible for binding acetylcholine, thereby preventing nerve and muscle cells from responding to the neurotransmitter. Very limited amounts of both pralidoxime (2-PAM)—a compound that reactivates sarin-inhibited AChE—and the anti-anxiety drug diazepam (better known as Valium), were also available. [Nature](#)

##### [Nanoparticle-Delivered 2-PAM for Rat Brain Protection against Paraoxon Central Toxicity](#)

Encapsulation of the acetylcholinesterase reactivator, pralidoxime chloride (2-PAM), in SLNs appears to be a suitable strategy for protection against poisoning by organophosphorus agents (OPs) and postexposure treatment. Our results confirm the potential use of SLNs loaded with positively charged oximes as a medical countermeasure both for protection against OPs poisoning and for post-exposure treatment. [ACS Applied Materials & Interfaces](#)

##### [NIH Awards 19M for Development of Nerve Agent Medical Countermeasures](#)

The National Institutes of Health (NIH) has awarded Rutgers University a five-year grant for more than \$19 million for research that would lead to the development of drugs to treat toxicity from chemical agents used in a terrorist attack. [Global Biodefense](#)





### Scientists Create Biological Shield to Protect Against Chemical Weapons – Including Sarin Gas

Researchers from the University of North Carolina at Chapel Hill and Moscow State University have now announced a potent enzyme called organophosphorus hydrolase that can reverse and prevent poisoning by pesticides and nerve gas. In the study, researchers developed a way to wrap the enzyme into a nanoparticle. This could then be administered before, during and after exposure to organophosphate-based toxins. In mice, the team showed how their nanozyme circulated in the blood for 17 hours after one dose.

## Geopolitical implications of AI and digital surveillance adoption

By Dahlia Peterson and Samantha Hoffman

June 2022

Source: [https://www.brookings.edu/wp-content/uploads/2022/06/FP\\_20220621\\_surveillance\\_exports\\_peterson\\_hoffman\\_v2.pdf](https://www.brookings.edu/wp-content/uploads/2022/06/FP_20220621_surveillance_exports_peterson_hoffman_v2.pdf)

The increasing sophistication and spread of artificial intelligence (AI) and digital surveillance technologies has drawn concerns over privacy and human rights. China is indisputably one of the leaders in developing these technologies both for domestic and international use. However, other countries that are active in this space include the United States, Israel, Russia, multiple European countries, Japan, and South Korea. U.S. companies are particularly instrumental in providing the underlying hardware for surveillance technologies.

In turn, these technologies are used in a range of settings. Some of its most severe use cases include helping to spy on political dissidents, and enabling repression of the Uyghur and Turkic Muslim populations across China. However, concerns arise even in its more “mundane” uses, which include one-to-one verification at banks and gyms. The higher quality of the data collected can help companies improve the accuracy of their facial recognition technology. Over time, these increasingly effective technologies can be used elsewhere for authoritarian purposes.

The United States and partner democracies have implemented sanctions, export controls, and investment bans to rein in the unchecked spread of surveillance technology, but the opaque nature of supply chains leaves it unclear how well these efforts are working. A major remaining vacuum is at the international standards level at institutions such as the United Nations’ International Telecommunication Union (ITU), where Chinese companies have been the lone proposers of facial recognition standards that are fast-tracked for adoption in broad parts of the world.

To continue addressing these policy challenges, this brief provides five recommendations for democratic governments and three for civil society. In short, these recommendations are:

- The U.S. and its allies should demonstrate that they can produce a viable alternative model by proving that they can use facial recognition, predictive policing, and other AI surveillance tools responsibly at home.
- The State Department should work with technical experts, such as those who convene at the Global Partnership on AI, to propose alternate facial recognition standards at the ITU.
- The United States and like-minded countries should jointly develop systems to improve the regulation of data transfers and reduce risks.
- The United States and partner democracies should subsidize companies to assist with creating standards to propose at bodies such as the ITU.
- The National Science Foundation and the Defense Advanced Research Projects Agency should fund privacy-preserving computer vision research, where computer vision is deriving information from images or video.
- Civil society organizations (CSOs) should engage in outreach efforts with local communities and community leaders to strengthen public discourse on the advantages and disadvantages of using AI in policing and surveillance.
- CSOs should engage in or support research on issues related to rights abuses using AI and digital surveillance technologies and the export of these technologies.
- CSOs should actively participate in the setting of international technology standards.

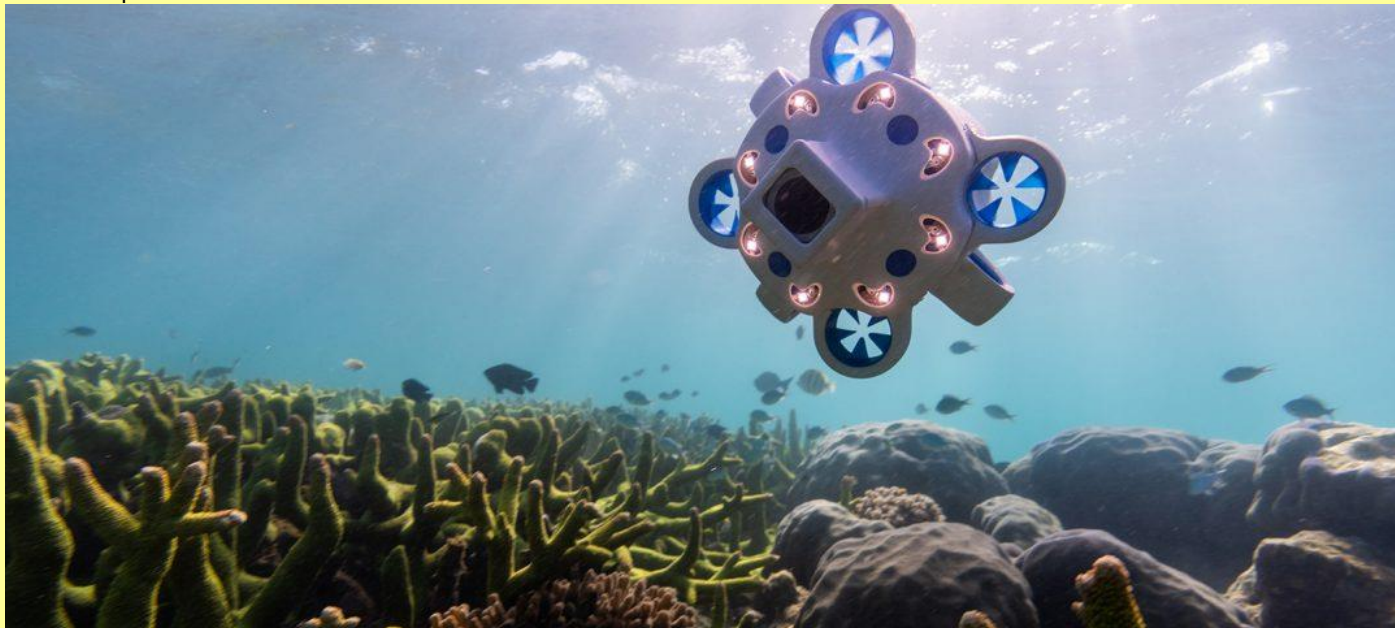
**Dahlia Peterson** is a research analyst at Georgetown’s Center for Security and Emerging Technology.

**Dr Samantha Hoffman** is a Senior Analyst at ASPI’s International Cyber Policy Centre. Her work explores the domestic and global implications of the Chinese Communist Party’s approach to state security. It offers new ways of thinking about understanding and responding to China’s pursuit of artificial intelligence and big data-enabled capabilities to augment political and social control.



## AI Enables a New Underwater Drone to Perform Complex Tasks

Source: <https://i-hls.com/archives/114319>



Apr 23 – Smaller and more convenient models have driven down the cost of unmanned aerial vehicles and have made it possible to use technology in ways that were previously inaccessible. There is currently a robot that aims to spread this message underwater as well, making unmanned underwater vehicles (UUV's, or underwater drones) more accessible than ever.

Hydros is a compact autonomous underwater robot that is equipped with advanced sonar and navigation capabilities. It allows for 3D missions to be planned in minutes, without special training, and is equipped with acoustic communication functions that allow operators to monitor tasks in real time while on the move and make adjustments as needed. Small enough to be operated by one person, it does not require any staff in the water. Using a computer, data can be wirelessly retrieved once the task is completed.

Advanced Navigation's new robot has a tiny camera that can collect data underwater, allowing it to be used for a variety of applications that require high-resolution images or video, as well as precise mapping capabilities with precise geolocation. With artificial intelligence, camera and lighting settings can be dynamically balanced, and distortions can be corrected in complex situations. Moreover, Hydros is able to maneuver in water and avoid obstacles using artificial intelligence. Basically, the robot serves as a full measurement team, so no additional underwater UAVs or humans are needed.

INA, DVL, USBL, and various acoustic and optical modems combine to form one completely airtight drone that can last a little more than three hours, travel a distance of nine kilometers, reach a top speed of four knots, and go to a depth of 3,000 meters, according to [roboticsandautomationnews.com](http://roboticsandautomationnews.com).

## The Chinese Military's Access to AI Chips

Source: <https://www.homelandsecuritynewswire.com/dr20220708-the-chinese-military-s-access-to-ai-chips>

July 08 – The Chinese military's progress in artificial intelligence largely depends on continued access to high-end semiconductors. By analyzing thousands of purchasing records, a new [report](#) from the [Center for Security and Emerging Technology](#) (CSET) at Georgetown University offers a detailed look at how China's military comes to access these devices.

The authors find that most computer chips ordered by Chinese military units are designed by American companies, and outline steps that the U.S. government could take to curtail their access.

Here is the report's Executive Summary:

Over the last five years, the Chinese People's Liberation Army (PLA) has made significant progress adopting artificial intelligence for combat and support functions. Chinese leaders broadly expect AI to usher in the "intelligentization" (智能化) of military affairs, characterized by ubiquitous sensor networks, more frequent machine-on-machine engagements, and a faster tempo of operations.



But the PLA's progress in AI and related technologies largely depends on continued access to a special class of semiconductors—AI chips—which are used to train advanced machine learning systems. By analyzing 24 public contracts awarded by PLA units and state-owned defense enterprises in 2020, this policy brief offers a limited but detailed look at how the Chinese military comes to access these devices.

Despite more aggressive efforts by the Trump and Biden administrations to limit technology exports to the Chinese military, the PLA is placing orders for AI chips designed by U.S. companies and manufactured in Taiwan and South Korea. The authors of this policy brief consider alternative approaches that the United States could take to curtail Chinese military access to AI chips—such as a limited crackdown on Chinese military suppliers, or an embargo on AI chips exported to China. However, both of these options have serious limitations, and could prove counterproductive to U.S. national and economic security interests. Instead, the authors propose that the United States expand its collection of open-source intelligence and adopt new export control measures based on high-end chip features. Key findings include:

1. The PLA is placing orders for AI chips designed by U.S. companies and manufactured in Taiwan and South Korea.
  - Of the 97 individual AI chips we could identify in public PLA purchase records, nearly all of them were designed by Nvidia, Xilinx (now AMD), Intel, or Microsemi.
  - By comparison, we could not find any public records of PLA units or state-owned defense enterprises placing orders for high-end AI chips designed by Chinese companies, such as HiSilicon (Huawei), Sugon, Sunway, Hygon, or Phytium.
2. The U.S. government is limited in its ability to meaningfully constrain the sale of AI chips to specific end-users in China. A strategy based on end-user export controls is likely insufficient to limit Chinese military access to AI chips or broader progress in AI-related technologies.
  - Difficulties associated with tracking AI chips and the variety of potential vendors would make it challenging for U.S. regulators to wage a targeted crackdown on the PLA's intermediary chip suppliers.
  - The PLA often buys commercial off-the-shelf AI systems from Chinese academic institutions and private companies, which also buy U.S.-designed chips, and are not easily captured by U.S. restrictions on *military* end-users.
3. Effectively managing the PLA's access to AI chips will require a deeper understanding of China's defense industry and new forms of export control for technologies related to AI. For example, such controls could be based on the physical and technical characteristics of chips exported to China, rather than on their intended applications or end-users—but this regime would require buy-in from U.S. allies and partners to be effective.
  - Abandoning end-user controls in favor of a more extreme policy, such as an embargo on chip exports to China, would alienate regional partners and jeopardize the long-term viability of the U.S. semiconductor industry.
  - The United States could gain a better understanding of China's AI defense industry by expanding its collection and analysis of open-source information.
4. Ultimately, how the United States should best manage PLA chip access—or whether it should even attempt to do so—is a contentious issue that touches competing interests across U.S. industry and government. These questions involve too many unknown variables to answer confidently. But by carefully studying what limited information the Chinese military chooses to publish about its chip purchases, this report illuminates some of the barriers the United States faces in regulating this practice—and opportunities for reform.

## AI-Enabled Unmanned All-Terrain Vehicle Begins Trial

Source: <https://i-hls.com/archives/115051>

July 18 – New trials of a recently developed AI-enabled unmanned all-terrain vehicle will be conducted by the Indian Army. The vehicle will be tested on desert terrain before any attempts on a larger scale, and it will be used for surveillance and logistics operations, according to ThePrint.In.

The vehicle is equipped with day and night cameras with a range of 2 kilometers and can carry up to 500 kgs. Additionally, the



## ICI C<sup>2</sup>BRNE DIARY – July 2022

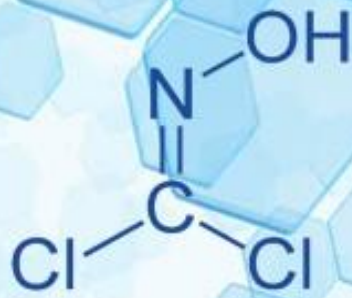
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vehicle has multiple sensors for mapping, path planning and obstacle detection, and can operate in temperatures ranging from -20 degree to +50 Degrees Celsius.

The unmanned vehicle is also expected to be deployed for explosive detection and neutralization of improvised explosive devices (IED).



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# CHEM NEWS



## To serve and Protect



## Weapons of mass destruction: What will be new in the 2022 NATO strategic concept?

By Rose Gottemoeller

Source: <https://thebulletin.org/2022/06/weapons-of-mass-destruction-what-will-be-new-in-the-2022-nato-strategic-concept/>



June 27 – This week's NATO Summit in Madrid will launch a new Strategic Concept, NATO's statement of its strategic goals and objectives, its purpose in life. With Russia threatening to use weapons of mass destruction, NATO's approach to deterring chemical, biological, radiological, and nuclear attacks will be in the global spotlight. Will NATO have something new to say on deterrence, or stick to the past?

This summit was meant to be many things that it will not. NATO was going to focus its attention for the first time on China, to think through how best to sustain the defense of Europe while the United States pivots to the Indo-Pacific. The defense of Europe, in this setting, would remain important, but more the purview of the European NATO allies, a kind of strategic rear guard against the main action, countering China's rising influence.

The NATO Summit was also meant to be the celebratory hand-off between Jens Stoltenberg, who has served skillfully as NATO Secretary General for eight years, to a new Secretary General. Perhaps, for the first time, the person selected would be a woman. Russia's February 24 [invasion of Ukraine](#) undid both these scenarios. Stoltenberg was extended in office for a year, and the hunt for his successor was suspended. Instead of focusing on China, NATO is helping Ukraine to fight for its life against Russia, defending the principles of sovereignty, territorial integrity, self-determination, and independence. These are the principles that underpin the post-World War II system, designed to render impossible the emergence of another murderous tyrant in Europe. Sadly, they are again under attack in Ukraine.

The stage is thus set for the summit in Madrid, where the allies will issue the new Strategic Concept. It will be the first since 2010, when the Euro-Atlantic area was "at peace and the threat of a conventional attack against NATO territory ... low."<sup>[1]</sup>



This statement already rang hollow when the Russians seized Crimea and destabilized the Donbas in 2014, but instead of redoing the Strategic Concept, the alliance focused at that time on restoring its deterrence and defense capabilities, putting in place battle groups in the Baltic States and Poland and renewing its ability to reinforce rapidly and efficiently.<sup>[2]</sup>

Now, however, a new Strategic Concept is vital as a statement of the overarching strategy that will take NATO forward. **Since the Euro-Atlantic area is not at peace, and the threat of conventional attack against NATO is not low, what will the alliance stand for? What will its strategic vision be?**

A focal point of the new Strategic Concept is bound to be weapons of mass destruction, because of Russia's frequent chemical, biological, radiological, and nuclear threats during the current crisis. In the first days of the invasion, Russian troops occupied Chernobyl and attacked the Zaporizhzhia nuclear power plant.<sup>[3]</sup> These adventures and Moscow's early efforts to establish the conditions for chemical or biological "false flag" operations in Ukraine drew a direct reproof from NATO leaders at their special summit in Brussels on March 24:

"We ... condemn attacks against civilian infrastructure, including those endangering nuclear power plants. We will continue to counter Russia's lies about its attack on Ukraine and expose fabricated narratives or manufactured "false flag" operations to prepare the ground for further escalation, including against the civilian population of Ukraine. Any use by Russia of a chemical or biological weapon would be unacceptable and result in severe consequences."<sup>[4]</sup>

A particular question is whether NATO nuclear policy will undergo any changes under the current circumstances, when Vladimir Putin and other senior Russian leaders have been rattling the nuclear saber.<sup>[5]</sup> They were doing so even before the invasion of Ukraine, so allies must consider whether nuclear weapons use is now more likely. If this extraordinarily dangerous circumstance is arising, what must NATO members do to deter it?

The 2010 Strategic Concept addressed nuclear policy as a matter of direct deterrence capabilities, the ability to respond to a nuclear attack with a decisive military response. As the allies emphasized,

...an appropriate mix of nuclear and conventional capabilities remains a core element of our overall strategy. The circumstances in which any use of nuclear weapons might have to be contemplated are extremely remote. As long as nuclear weapons exist, NATO will remain a nuclear alliance...

We will ensure that NATO has the full range of capabilities necessary to deter and defend against any threat to the safety and security of our populations. Therefore, we will ... maintain an appropriate mix of nuclear and conventional forces.<sup>[6]</sup>

Nowadays, in the light of Russian nuclear threats, allies have very different views about the utility of nuclear weapons in wartime, with some long-standing members continuing to pair the necessity of nuclear deterrence with necessity for dialogue—that is, the continuation of nuclear arms reduction negotiations after the Ukraine crisis abates, with the goal of eventual nuclear disarmament.

Other newer members, however, are looking for a more robust nuclear stance from NATO and have even argued for the demise of the three "no's" first articulated in the late 1980s to reassure Russia about enlargement: NATO has no intention, no reason, and no plan to station nuclear forces on the territory of its new members. As longtime NATO official and chronicler Simon Lunn has said, "The more recent members note these declarations were signed without them and effectively prohibit their participation in the existing Alliance arrangements."<sup>[7]</sup> Poland has been particularly articulate in this regard, stating that it would be willing to host nuclear weapons on its territory.<sup>[8]</sup>

Bridging these two points of view, particularly during a hot conflict when nuclear weapons are being brandished, will not be easy. For that reason, NATO will most likely leave its core 2010 declaratory language intact and look for other ways to convey a bolstered nuclear deterrent. The core language should stand in any event, because it conveys a clear message of deterrence by threat of harsh retaliation.

**But what more can NATO do to deter threats not only of nuclear use, but also of chemical, biological, and radiological attacks?** Here the alliance will probably resort to beefing up the language in the Strategic Concept regarding resilience. On this score, the 2010 document said only that the allies would "further develop NATO's capacity to defend against the threat of chemical, biological, radiological, and nuclear weapons of mass destruction."<sup>[9]</sup>

By March 24, when the special summit took place to address the Ukraine crisis, NATO leaders had expanded on the topic: "We are increasing the resilience of our societies and our infrastructure to counter Russia's malign influence... We will enhance our preparedness and readiness for chemical, biological, radiological, and nuclear threats. We will take further decisions when we meet in Madrid."<sup>[10]</sup>

As preparations for Madrid accelerated in April and May, it became clear that resilience to WMD threats would indeed be front and center: "NATO Allies are constantly working to bolster their defensive capabilities against WMD and strengthen their resilience to chemical, biological, radiological, and nuclear (CBRN) threats, including from terrorism and warfare."<sup>[11]</sup>



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This emphasis on resilience is not loose talk but in fact is born of tough experience during the Ukraine crisis. **In response to Russia's threats, NATO activated its Combined Joint CBRN Defence Task Force, which is comprised of a CBRN Defence Battalion and CBRN Joint Assessment Team.** The battalion is trained and equipped to deal with CBRN attacks against NATO populations, territory, or forces. The assessment team analyzes the full spectrum of CBRN threats in operational settings and provides advice to commanders.<sup>[12]</sup>

Although the task force has been called upon to provide support to civilian authorities to address natural disasters and health crises—it was an important player in NATO's response to the COVID-19 pandemic—the March 2022 activation was the first time it was called for in a deterrence and defense setting.

NATO leaders seem set on making resilience against nuclear, chemical, biological, and radiological attacks a centerpiece of alliance declaratory policy in the new Strategic Concept. In this way, they will add deterrence by denial to the alliance's considerable capacity to deter by threatening retaliation.

NATO, in brief, will resume the two-pronged approach to deterrence that it pursued during the Cold War: denying the enemy the ability to achieve its war aims by ensuring that NATO forces, populations, and territory will survive an attack (deterrence by denial), and threatening overwhelming retaliation against an attack (deterrence by punishment).

This two-pronged deterrence approach is sensible at a time of heightened chemical, biological, radiological, and nuclear threats, but it is difficult and expensive to accomplish for both military forces and civilian populations, especially when civilians might be skeptical of the need to pursue burdensome defense measures. Israel has not had difficulty getting its citizens to [wear gas masks](#), but people in Europe might behave differently. So NATO countries will have to pay careful attention to investing in capabilities and educating their publics in a smart way, if they are to achieve a credible deterrence by denial posture.

One other vital nuclear policy issue will be on the table: the willingness of the NATO allies to continue to pursue nuclear arms control and nonproliferation cooperation with Russia. The aforementioned split between allies—with some members considering dialogue a vital aspect of NATO policy toward Russia and others considering it a lost cause—no doubt means that difficult debates are going on behind the scenes as NATO finishes work on the Strategic Concept. However, going into the summit, NATO continued to evince a willingness to pursue arms control and nonproliferation diplomacy:

As long as nuclear weapons exist, NATO Allies will continue to maintain nuclear forces as a core component of the Alliance's overall capabilities for deterrence and defence. That said, since the end of the Cold War, Allies have dramatically reduced the number of nuclear weapons stationed in Europe and their reliance on nuclear weapons in the NATO strategy. **No NATO member country has a chemical or biological weapons programme.** The Alliance is committed to arms control, disarmament, and non-proliferation of all weapons of mass destruction.<sup>[13]</sup>

In the face of Russia's onslaught against Ukraine, there is no way that Russia and NATO countries will be returning to the negotiating table any time soon. That goes for multilateral talks on European security and WMD constraints, as well as bilateral talks between the United States and Russia to replace the New START Treaty.

However, the notion that NATO would abandon negotiated restraint on weapons of war is also highly unlikely, because of NATO's firm and long-standing commitment to a dual-track approach, combining deterrence and defense with détente and dialogue. Even the dialogue doubters among NATO member states would be unlikely to embrace a policy depending on deterrence and defense alone; it would doom NATO to being unable to change the status quo except by resort to the use of force.<sup>[14]</sup>

Indeed, a comprehensive study by the Middlebury Center for Nonproliferation Studies (CNS) at Monterey found that NATO members from east to west understand the need for a dual-track approach. Some resist the idea in the light of Russian bad behavior, but they reluctantly accept that dialogue can be useful and necessary when well prepared and timely. The CNS study also found that allies generally agree on the need to prepare, to do necessary homework, even when negotiations are not immediately feasible for political, military, or technical reasons.<sup>[15]</sup>

At the end of the day, then, the NATO 2022 Strategic Concept will no doubt have something to say about the continuation of efforts to constrain nuclear and other weapons at the negotiating table. As difficult as such talks are to imagine at this moment, NATO will want to prepare itself for an eventual return to negotiated restraint on weapons of mass destruction.

### Notes

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[6] NATO 2010 Strategic Concept, [https://www.nato.int/nato\\_static\\_fl2014/assets/pdf/pdf\\_publications/20120214\\_strategic-concept-2010-eng.pdf](https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf), pp. 14-15.

[7] Simon Lunn, "NATO Nuclear Policy: Reflections on Lisbon and Looking Ahead to the DDRP," [https://media.nti.org/pdfs/NTI\\_Framework\\_Chpt1.pdf](https://media.nti.org/pdfs/NTI_Framework_Chpt1.pdf). Lunn's article is an excellent commentary on the status of NATO nuclear policy at the time when the 2010 Strategic Concept was issued.

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**Rose Gottemoeller** is the Steven C. Házy Lecturer at the Freeman-Spogli Institute of the Center for International Security and Cooperation at Stanford University and a research fellow at the Hoover Institution. Before joining Stanford, Gottemoeller was the Deputy Secretary-General of NATO from 2016 to 2019, where she helped to drive forward NATO's adaptation to new security challenges in Europe and in the fight against terrorism. Before NATO, she served for nearly five years as the Under Secretary for Arms Control and International Security at the US State Department, advising the Secretary of State on arms control, nonproliferation, and political-military affairs. While Assistant Secretary of State for Arms Control, Verification and Compliance in 2009 and 2010, she was the chief US negotiator of the New Strategic Arms Reduction Treaty (New START) with the Russian Federation. She is the author of *Negotiating the New START Treaty* (Cambria Press, 2021), winner of the American Academy of Diplomacy's Douglas Dillon Book Award for a Book of Distinction on the Practice of American Diplomacy.

**EDITOR'S COMMENT:** It is final! NATO was looking for an opponent; therefore is not interested and will not pursue global peace. NATO breaths only for "bad" Russia and China. Simple as that! By the way, are we sure that no member-state does not have chemical weapons or is not interested in nuclear weapons?

## NATO to help secure Qatar World Cup 2022

Source: <https://dohanews.co/nato-to-help-secure-qatar-world-cup-2022/>

June 26 – About 1.2 million tickets have been purchased for the World Cup, with 40 million applications submitted to attend the tournaments.

NATO confirmed on Thursday that it will assist Qatar in security measures during the 2022 FIFA World Cup, as part of the bloc's close cooperation with Doha.

"The support will include training against threats posed by Chemical, Biological, Radiological and Nuclear (CBRN) materials, which will be delivered by **Slovakia** and NATO's Joint CBRN Defence Centre of Excellence in the Czech Republic," the North Atlantic alliance explained in a [statement](#).



**FIFA WORLD CUP  
Qatar 2022**



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The security support will also entail training offered by [Romania](#) for the protection of very important people (VIPs) as well as to deter threats posed by improvised explosive devices.

“A first training session dealing with Chemical, Biological, Radiological and Nuclear threats was conducted this past May in Slovakia,” it added.



### Security assistance during World Cup

Earlier this month, [Qatari and Turkish delegations](#) held a meeting in Doha to discuss security matters in preparation for hosting the major tournament later this year.

In January, [Turkish](#) Interior Minister Suleiman Soylu said his country will temporarily send 3,250 security officers to Qatar for the sporting event. Those to be deployed during the tournament include 3,000 riot police officers, 100 Turkish special forces, 50 bomb detection dogs and their operators, 50 bomb experts and other staff – all of whom will be on duty for some 45 days.

Soylu also added that Ankara has also trained 677 Qatari security personnel in 38 different professional areas, without providing further details on the specificities, according to [Al Jazeera](#).

The Qatari and Turkish interior ministries had previously signed an agreement to join efforts in organising the much anticipated football event. One such effort includes Turkey's participation in the security organisation of the World Cup 2022.

[Morocco](#) has also reportedly agreed to deploy a team of cybersecurity experts to Qatar ahead of the World Cup, [Rabat-based media](#) said.

According to the report by Morocco World News, Doha had requested Rabat's assistance in [securing](#) the major sporting event as part of its efforts to expand the two countries' security cooperation.

Away from the region, Britain's Royal Air Force and Royal Navy is set to provide counter-terror policing during the competition, Ben Wallace, the Secretary of State for Defence of the United Kingdom [announced](#) in late May.

[Britain](#) and Qatar will “join forces to provide air policing in the skies,” said Wallace in an official statement.



It is the first time Britain has provided this level of security for a World Cup held outside the [UK](#). The Ministry of Defence will support Qatar with military capabilities to counter terrorism and other threats to the tournament through maritime security, operational planning, and command and control support, according to a defence source told [The Telegraph](#) in late May.

## Iron Dragons assume mission command over domestic CBRN defense response task force

Source: [https://www.army.mil/article/257730/iron\\_dragons\\_assume\\_mission\\_command\\_over\\_domestic\\_cbrn\\_defense\\_response\\_task\\_force](https://www.army.mil/article/257730/iron_dragons_assume_mission_command_over_domestic_cbrn_defense_response_task_force)



June 21 – The **110th Chemical, Biological, Radiological, Nuclear (CBRN) Battalion (Technical Escort) “Iron Dragons”** have assumed mission command of Task Force 2 in the Defense CBRN Response Force. Known as the DCRF, the Defense CBRN Response Force saves lives, mitigates suffering and facilitates recovery operation

In support of U.S. Northern Command’s Joint Task Force-Civil Support, the task force conducts Defense Support to Civil Authorities response operations planning and preparedness to ensure mission readiness. The 110th Chemical Brigade (Technical Escort) is part of the 48th Chemical Brigade and 20th Chemical, Biological, Radiological, Nuclear, Explosives (CBRNE) Command, the U.S. military’s premier all hazards headquarters. Outside the wire and inside the cordon, Soldiers and civilians from 20th CBRNE Command take on the world’s most dangerous hazards in support of joint, interagency and allied operations around the world. The Aberdeen Proving Ground, Maryland-headquartered 20th CBRNE Command is home to 75 percent of the Active Duty Army’s CBRN specialists and Explosive Ordnance Disposal technicians, as well as the 1st Area Medical Laboratory, CBRNE Analytical and Remediation Activity, five Weapons of Mass Destruction Coordination Teams and three Nuclear Disablement Teams.



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The Joint Base Lewis-McChord, Washington-based Iron Dragons tackle CBRN hazards during military operations and domestic missions.

Maj. Trey W. Ferguson, the executive officer of the 110th Chemical Brigade, said units from Joint Base Lewis-McChord; Fort Hood, Texas; Fort Bliss, Texas; Fort Stewart, Georgia; Fort Riley, Kansas; Fort Campbell, Kentucky; and several other bases participated in Exercise Guardian Response in preparation for service in the DCRF.

“Guardian Response serves as the validation exercise for three battalion task forces and three brigade task forces supported by multiple enablers who will respond to the country's darkest hour in a domestic incident,” said Ferguson.



“The 110th CBRN Battalion successfully validated their task force headquarters, mass casualty decontamination, urban search and rescue and hazardous material reconnaissance and surveillance teams.



“The scenario followed the aftermath of a 10-kiloton nuclear detonation in a major metropolitan city and the actions necessary to prevent further loss of life,” said Ferguson.

Reserve component observers, controllers and trainers from across the nation assisted U.S. Army North and Joint Task Force-Civil in evaluating DCRF units.

The Fort Bliss, Texas-based 44th Chemical Battalion is the mass casualty decontamination company assigned to Task Force 2. The Fort Campbell, Kentucky-based 63d CBRN



Company and the Fort Riley, Kansas-based 172d CBRN Company are serving in Task Forces 1 and 3.

The units will conclude the DCRF mission in May 2023.

A native of Sarasota, Florida, Ferguson has served for 12 years as an Active Duty Army CBRN officer. He has served in assignments with U.S. Army Training and Doctrine Command, U.S. Army Forces Command and U.S. Special Operations Command.

“I became a CBRN officer because I found the work and mission challenging yet rewarding,” said Ferguson. “The nuances of CBRN and Weapons of Mass Destruction are fascinating, and it is truly rewarding when we can provide commanders solutions to our unique problem set.”

Ferguson said the units excelled while preparing for the DCRF mission.



“In my professional opinion, the units under mission year 2022 are some of the most prepared and validated units to ever assume this mission,” said Ferguson, adding that the incident commander and exercise leader said that this was the first exercise in more than 10 years where every battalion task force validated the first time.

“We integrated with civilian agencies and performed our duties and responsibilities with the utmost professionalism to ensure we leave no doubt that we stand ready to answer the nation's call,” said Ferguson.

## Chlorine gas leak kills 12, injures 251 at Jordan port

Source: <https://www.reuters.com/world/middle-east/four-dead-70-injured-toxic-gas-leak-jordans-aqaba-port-state-tv-2022-06-27/>



June 27 – At least 12 people died and 251 were injured in a chlorine gas leak from a storage tank at Jordan's Aqaba port, officials and state media reported on Monday.

The leak came after a tank filled with 25 tonnes of chlorine gas being exported to Djibouti fell while being transported, officials said.

A video posted on state television's Twitter page showed a storage tank falling from a winch and slamming into the deck of a ship, followed by yellow-coloured gas rising into the air as people ran away.

Health ministry officials said they expected only a handful of people to remain hospitalised by Tuesday.

**Chlorine is a widely used disinfectant and water purification agent, but if inhaled, the gas turns to hydrochloric acid, which can lead to internal burning and drowning through a reactionary release of water in the lungs.**

Jordan's Aqaba grain silos halted work to allow inspection of its grains and for any signs of contamination, but maritime traffic at Aqaba ports continues, officials said.

There were no vessels unloading any grains cargo at the time of the incident, they added.

Aqaba port at the north end of the Red Sea has long been a major transit route for Iraqi imports and exports. Prime Minister Bisher al-Khasawneh arrived at Aqaba and headed to a hospital where some of the injured were being treated, state TV reported. Al-Khasawneh also formed an investigation team into the incident chaired by the interior minister, state TV cited the information minister as saying.



## The Best Way to Prevent Unconventional War is to Prepare for It

By Asaf Hazut

Source: <https://www.linkedin.com/pulse/best-way-prevent-unconventional-war-prepare-impertech-saftey/>

*“War is a continuation of policy by other means.”*

June 21 – This concept was proposed by Prussian general and military theorist Carl Philipp von Clausewitz<sup>[1]</sup>, who lived in the 18th century and knew full well that war serves no purpose in and of itself, and is only part of a long and exhausting process of political negotiations.

What was true then is doubly true today. But today wars have become more technological, more media-heavy, with different layers of violence including violence in cyberspace, ideological violence, and psychological violence. Unfortunately, the conditions of devastated cities in Ukraine indicate that even physical violence plays a part in modern warfare.

Warfare using weapons of mass destruction has also been part of this process of violence. The use of chemical weapons sought to bring about quick and quiet victories, which consequently produced less physical damage. Currently, such activity can be interpreted as being more legitimate. Strange as it may seem, the best way to prevent the use of chemical weapons is either of the two following methods: (1) Producing a similar balance of threat as a counterweight to enemy attack. (2) Protecting oneself, thus reducing the future damage this type of weapon can cause.

The **first method** of prevention is regulated through international conventions such as the CWC<sup>[2]</sup>, which has even created a mechanism for supervising and controlling the production and development processes of chemical weapons, such as the OPCW. I would like to note with great sorrow that events in recent years indicate these processes are only effective to a limited extent.

According to the UN Commission of Inquiry, Syria has used chlorine and sarin gas in an attack on the city of Irbid in August 2013, and in many other instances<sup>[3]</sup>. According to reports from US and British intelligence agencies, Russia is preparing the means to use similar weapons in the process of taking over major cities in Ukraine. These two are sufficient to attest that the Eastern Doctrine recognizes the use of chemical weapons as a legitimate means to achieving their policy objectives.

The **second method** of preventing the use of chemical weapons concerns the defending party's ability to protect itself, and thus reduce the military and political achievements associated with such an attack.

Chemical weapons are known for their capacity to cause numerous casualties, injuries and deaths on a large scale. It can especially throw the attacked party out of balance and force it to reduce its ability to fortify dense defense arrays. Using protective equipment will allow the defender to remain within their defensive arrays, thwarting the attacker's desire to advance.

Under these conditions, the attacked area will become restricted in the movement for the attacker, and not for the defender.

The protection of the population also allows the defender to make informed decisions about evacuation and defense processes for areas under attack. The decision to protect the Israeli population against chemical weapons in 1990 was one of the factors that prevented the use of chemical weapons in missiles fired into its territory in 1991 by Saddam Hussein, then-ruler of Iraq.

The act of defense produces a different balance of power. The fact that the potential damage to the attacked party is low forces the attacker to consider the disadvantages of using chemical weapons as a reason to avoid using such weapons in the first place. Public and international condemnation, together with the reduction in the capacity for military success, creates a balance of power that is nonviolent but makes it possible to balance the attacking and attacked parties, a balance that can prevent the use of chemical weapons.

**The crucial conclusion is** that defensive capabilities, both civilian and military, can and should be available to the defender despite not being offensive in nature. The goal of reducing the attacker's desire to use chemical weapons, along with other components, creates a balance of power between the indiscriminate attacker and the defender.

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<sup>[1]</sup> Carl Philipp Gottfried von Clausewitz (June 1780 - November 16 1831) was a Prussian military man, one of the forefathers of modern military theory, who first brought up the subject of the psychological and political elements of war.

<sup>[2]</sup> Chemical Weapons Convention

<sup>[3]</sup> 'Clear and convincing' evidence of chemical weapons use in Syria, UN team reports.

**Asaf Hazut** is a senior IDF officer (in reserve) and has over 25 years of experience in the field of CBRN. As VP of Business Development at Impertech, Mr. Hazut shares thoughts about the current situation in Europe.



## PROACTIVE EU project held its first field exercise in conjunction with project eNOTICE and the Dortmund Fire Brigade

Source: <https://uic.org/com/enews/article/proactive-eu-project-held-its-first-field-exercise-in-conjunction-with-project>

May 19 – The EU H2020 funded project PROACTIVE (“PReparedness against CBRNE threats through cOmmon Approaches between security praCTitioners and the Vulnerable civil society”), coordinated by the UIC Security Division, held its first field exercise in conjunction with the EU funded H2020 project eNOTICE.



The event took place on 7 May in Dortmund, Germany and was hosted by the Fire Department in Dortmund (FDDO) at their Civil Training Centre. PROACTIVE consortium partners worked jointly with FDDO (partner in the eNOTICE consortium) in the planning and execution of the exercise.



This exercise was based on a scenario of a chemical substance being released near a train station from a freight train, leading to a specialised operational response. The chemical leak was simulated using disco fog in order to increase realism. The exercise was run in German and focused on the decontamination phase of emergency response. FDDO involved 130 firefighters who trained their decontamination skills.

A unique feature of this exercise is that project PROACTIVE recruited and involved members of the public as role play volunteers, as opposed to the frequent practice in training exercises when experts or actors play the role of the victims. In this joint exercise, the

volunteers who played the role of the victims were civilians with little to no prior knowledge of CBRNe incidents. Out of these, some volunteers represented vulnerable groups, such as persons with vision or hearing impairments, persons with reduced mobility, or persons who do not speak the local language.

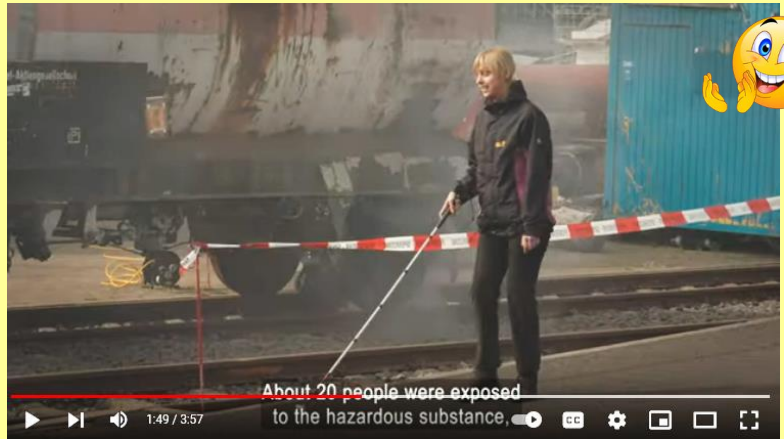


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The volunteers underwent disrobing, showering and re-robing and the fire brigade had to manage the additional technical and communication challenges linked to the decontamination process of persons with vulnerabilities. Overcoming these gaps is in line with PROACTIVE's main goal, which is to increase practitioner effectiveness in managing large, diverse groups of people in a CBRNe environment.

The exercise presented an opportunity for first responders to learn first-hand the needs and expectations of civil society. The exercise also allowed PROACTIVE to observe key challenges for future scenarios that will be addressed further in our project.

Lessons learned were collected through debriefing workshops just after the exercise.



**EDITOR'S COMMENT:** The good thing in this drill is the participation of "victims" with special needs i.e., blind or on wheel chairs. We usually forget this group of people and almost always we deal with ambulatory people that happen to be in the incident site.

## Country Overview: Serbia

By Ms. Nora Ljubojevic

*NCT Magazine 14/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/country-overview-serbia>

Landlocked within the Western Balkan Peninsula, the Serbian state borders friendly and rival neighbors with which it has developed interdependencies over the decades. The importance of the country lies mostly on its geostrategic location in an area where power is contested daily by the US, China, and Russia.

Serbia has established solid ties with multiple partners, among others, the US, and European member states, aspiring to access the EU after being granted candidate status and maintaining intense negotiation talks for years. It is nevertheless not pursuing NATO membership, as it considers that clearly taking sides in the international arena would limit its business opportunities, military neutrality, and sovereignty. However, Serbia cooperates with the NATO-led Kosovo Force (KFOR) and deepened its cooperation with NATO since 2006, joining the Partnership for Peace programme, the Partnership Interoperability Initiative, engaging with NATO's Euro-Atlantic Disaster Response Coordination Centre and currently transitioning towards the new Individually Tailored Partnership Programme (ITPP). Additionally, it has safely destroyed 1.4 million landmines and ammunition as part of the NATO Trust Fund projects. While there is expectation that the country will scale back military ties with Russia as a result of its invasion of Ukraine, the reality is that its relationship with Russia has more to do with long-standing cultural ties and with striking mutually beneficial energy deals, with China standing out as the actual hindrance to Western influence in the region. China is already supplying security equipment (CH-92A drones incorporating FT-8C missiles, Huawei surveillance systems, recent delivery of FK-3 air defense surface-to-air missile system) and both countries will sign a Free Trade Agreement by the end of 2022 worth \$8-10 billion a year, with China opening factories throughout the country and being involved in multiple infrastructure projects (e.g., tunnels, the Belgrade-South Adriatic highway, vaccine production facilities). Major security threats lay on the existence of an undetermined number of underground landmines, unexploded ordnance (UXO) and cluster munitions dating back to WWII and the Balkan wars period which are activated during flooding and forest fires as seen in 2014, 2019 and 2021, and the presence of criminal networks. From a socioeconomic standpoint, the country suffers from constant depopulation





due to a prolonged massive brain drain and low birth rates caused by the precarious economic situation, which risks discouraging foreign investments as less qualified workers are available within the country, costing the state a net annual loss of 1.2 billion euros per year as estimated in a research study.

●► [Read the full article at the source's URL.](#)

**Nora Ljubojevic** is an Analyst at IB Consultancy. Her prior work experience includes the EU Delegation to the UN in New York, the Council of Europe, the Centre for European Policy in Belgrade and the Human Rights Foundation. She holds an MLitt. in Middle East, Caucasus and Central Asia Security Studies from the University of St. Andrews and a BA in Political Science from the Complutense University of Madrid.

## COVID-19 may improve our CBRNE detection capabilities

By Prof. Emilio Gómez-González, and Inspector José Manuel Navas

*NCT Magazine 12/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/covid-19-may-improve-our-cbrne-detection-capabilities>

More than two years have elapsed since the World Health Organization (WHO) declared a public health emergency on January 30th, 2020, when a new strain of coronavirus began to spread from continental China. It was named as 'severe acute respiratory syndrome coronavirus 2' (SARS-CoV-2), and its propagation rapidly evolved into the current pandemic of the associated coronavirus disease 2019 (COVID-19). By mid-April 2022, more than 507 million persons have been infected, and over 6.2 million deaths have been reported worldwide. The new virus propagates among humans mainly through the aerosols and small droplets of respiratory fluids exhaled when talking, coughing, sneezing, or just breathing. This mechanism of contagion has proven to be very effective, and a substantial challenge for the current detection techniques and epidemiological control methods in place. In addition to the obvious impact of the COVID-19 pandemic on public health, European and international law enforcement agencies such as EUROPOL, INTERPOL, UNICRI, CTPN, and military institutions like NATO have drawn attention to new biological threats that may exist if similar infectious agents –potentially enhanced by artificial intelligence techniques – are maliciously used.

### Optical imaging spectroscopy for early detection of SARS-CoV-2

The response of the international scientific community to the compromised public health resulting from the propagation of the SARS-CoV-2 was immediate. Thus, in April 2020 a research project coordinated by the University of Seville –entitled 'Project C-CLEAN', led by the first author– was launched with the collaboration of eleven Spanish institutions –including, prominently, the Group of Interdisciplinary Physics of the University of Seville, and the EOD-CBRN Group of the Spanish National Police– and the support of the European Commission. This Project was funded by the Emergency Call for Research Projects on SARS-CoV-2 and COVID-19 of the Institute of Health 'Carlos III' of the Spanish Ministry of Science and Innovation, and its overall aim was the design and development of a new technology for optical detection of the virus in fluid samples. The resulting methodology was tested on synthetic models and published in 2021, and the successful outcomes of a proof of concept with human samples were published in February 2022. The new technique –designated as 'optical imaging spectroscopy'– relies on an innovative combination of hyperspectral imaging in the visible and near-infrared ranges and the use of advanced statistics and artificial intelligence (machine learning) algorithms for the classification of samples. It allows for the detection of the tested viruses in liquid droplets and dry residues deposited on surfaces, and presents the advantages of simultaneous, rapid processing of multiple samples –those within the field of view of the camera– without contact or reagents, and with relatively simple equipment, usable by personnel with minimal training.

Initially, the technology was developed using two types of synthetic viruses commonly employed as laboratory models of the SARS-CoV-2 virus: lentiviral particles pseudotyped with the G protein of the vesicular stomatitis and with the spike S protein of the SARS-CoV-2. These models were prepared in two biofluids (saline solution and artificial saliva). The aforementioned technique demonstrated it was able to detect, differentiate, and quantify these two types of synthetic viral models. Subsequently, the technique was extended for the detection of the SARS-CoV-2 virus in human samples. The proof of concept obtained a sensitivity of 100% and a specificity of 87.5% in nasopharyngeal exudates (the same samples used in molecular tests) from symptomatic people. It was also possible to detect the presence of SARS-CoV-2 in fresh saliva of asymptomatic people.

●► [Read the full article at the source's URL.](#)



**Emilio Gómez-González** is a Full Professor of Applied Physics at the University of Seville and Director of its Group of Interdisciplinary Physics, Dpt. of Applied Physics III, ETSI Engineering School University of Seville, Spain. He also belongs to the Group of Applied Neuroscience, Institute of Biomedicine of Seville. With over 20 years of experience in academia and real-world applications of research, his work lines comprise optical technologies and photonics combined with artificial intelligence in highly demanding scenarios, from image-guided surgery and medicine –neurosurgery, fetal surgery– to EOD-CBRN police applications.

## Does Iran Have Chemical Weapons?

By Maya Carlin

Source: <https://www.19fortyfive.com/2022/07/does-iran-have-chemical-weapons/>

July 01 – As Iran quickly approaches its nuclear breakout time, the U.S. and its regional adversaries must consider the potential scale and scope of the regime's asymmetrical warfare endeavors. While the extent of Iran's ability to obtain weapons of mass destruction (WMD) and the technology to deliver them remains murky, the regime's pursuit of nuclear and ballistic-missile capabilities has only intensified over the years.

Though the Islamic Republic denies possessing any chemical weapons today, open-source reports tracking the import of dual-use materials into [Tehran](#) support the theory that **the regime does have some sort of program in place.**

In the 1980's, Iranian soldiers suffered greatly from Iraq's use of chemical warfare during the eight-year-long Iran-Iraq War. The Iraqi forces, led by Ba'athist President Saddam Hussein, justified its use of [chemical weapons](#) by claiming Iran employed the tactic first. Throughout the war, Iraq used mustard agents among other chemicals in various battles, resulting in approximately 100,000 Iranian deaths. Even more soldiers and civilians were injured and suffered from long-term health conditions.

A 1987 [U.N report](#) concluded that "Iraqi forces have been affected by mustard gas and a pulmonary element, possibly phosgene. In the absence of conclusive evidence of the weapons used, it could not be determined how the injuries were caused." Three years later, a declassified report from the Defense Intelligence Agency said that Iran used chemical weapons late in the war, "but never as extensively or successfully as Iraq." In 1993, Iran signed the Chemical Weapons Convention (CWC), committing never to develop, produce or possess chemical weapons in any way, shape, or form. While Iran claims to have destroyed its chemical weapons stockpile prior to the signing of the treaty, this action has not been confirmed. In 2020, the Director of the Central Intelligence Agency testified before Congress that U.S. experts believe Iran's chemical warfare program remains active. Subsequent reports in 2002 and 2011 mirrored the concern that Iran maintains the ability to produce chemical weapons agents. Last year, the U.S. accused Iran of not [complying](#) with the CWC for an "incomplete stockpile and facilities declaration and alleged concern that it (Iran) may be pursuing pharmaceutical-based agents for military purpose."

The U.S. passed the Iran Nonproliferation Act in 2000, which instructed the government to take punitive action against entities that are known to be providing material aid to WMD programs in Iran. Following the passing of this legislation, the U.S. has sanctioned numerous international companies in relation to Tehran's WMD programs. The Chinese firms Zibo Chemet Equipment Company and the Nanjing Chemical Industries group are among the sanctioned entities believed to be supporting Iran's chemical imports. Iran's [acquisition](#) of dual-use chemicals has unclear purposes, but industry officials are skeptical that they are completely harmless. The international community has grown increasingly concerned with Iran's buildup of raw nuclear materials and the expansion of its ballistic missile arsenal. While the regime asserts that its ambitions are purely scientific and economical, its history of malign behavior suggests otherwise.

### What the Experts Think:

"Iran would do whatever it takes to secure its national interests," explained a former George W. Bush Senior Department of Defense official. "While I can't say that there is 100% certainty Iran has chemical weapons, I would not be shocked if they wanted them or had an active program to build them. They know they can't compete with the U.S. in any sort of conventional war, so hence the need to develop things like nuclear weapons, ballistic missiles, and maybe even chemical weapons.

**Maya Carlin** is a Middle East Defense Editor with 19FortyFive. She is also an analyst with the Center for Security Policy and a former Anna Sobol Levy Fellow at IDC Herzliya in Israel. She has by-lines in many publications, including *The National Interest*, *Jerusalem Post*, and *Times of Israel*.

**EDITOR'S COMMENT:** Even if they do have them right now they know how to make them (due to their past experience). Same applies for any country that had CWAs in the past.



## Do You Know What's in Your Natural Gas? This Small Study Wanted The Answer

Source: <https://www.sciencealert.com/your-natural-gas-could-be-a-soup-of-chemicals-that-causes-a-bunch-of-health-problems>



July 02 – Seen as the cleaner alternative to coal and oil, natural gas is experiencing a [golden age of consumption](#). From industrial processes to electricity generation, methane has become the choice of fuel for a green-washed market.

Although its combustion releases [significantly less carbon dioxide](#) than its liquid and solid hydrocarbon cousins, methane is a serious pollutant in its own right. What's more, the natural gas it comes packaged in could be delivered to our homes with a whole lot of unpleasant guests.

Researchers from across the US state of Massachusetts collaborated on a project tasked with teasing apart the mix of chemicals being piped into our kitchens, basements, and living rooms for cooking and heating.

What they found should give us even more pause in depending so heavily on methane as a low-polluting energy source.

"This study shows that gas appliances like stoves and ovens can be a source of hazardous chemicals in our homes even when we're not using them," [says](#) co-author Jonathan Buonocore, a health scientist with the Harvard Chan Center for Climate, Health, and the Global Environment (C-CHANGE).

"These same chemicals are also likely to be present in leaking gas distribution systems in cities and up the supply chain."

Methane is what we call carbon that bristles with a quartet of hydrogen atoms. It forms readily near deposits of larger hydrocarbons, such as those consisting of oil and coal.

Being so small, it burns quickly and efficiently into carbon dioxide and water, making it a handy source of fuel that can be piped readily into homes and factories.

That's the clean version, at least. In reality, methane itself is a [powerful greenhouse gas](#) that can leak from virtually any part of the transport process.

"It is well-established that natural gas is a major source of methane that's driving [climate change](#)," [says](#) visiting scientist Drew Michanowicz from Chan C-CHANGE and PSE Healthy Energy.

"But most people haven't really considered that our homes are where the pipeline ends and that when natural gas leaks it can contain health-damaging air pollutants in addition to climate pollutants."

The gas that collects around fossil fuel deposits and other sources of methane isn't exactly pure. Mixed among those simple carbon blocks are longer chains of hydrocarbon, including a whole mess of complex squiggles, rings, and branches.

Volatile organic compounds (VOCs) including various alkanes, cycloalkanes, and aromatics such as benzene, toluene, ethylbenzene (not to mention non-organic materials like hydrogen sulfide, helium, and nitrogen) contribute to the complex recipe of freshly mined natural gas.

Not all of these compounds are bad for us, but a good proportion, including many of the aromatics, can raise the risk of [cancer](#) in sufficient doses, while also providing a starting point for reactions that generate atmospheric particulates and pollutants like [ozone](#).



What's never been clarified is just how many of these more troublesome substances – if any – persist from the source into our homes. Most gas providers in the US keep a close eye on their products to determine their heating value and to meet various standards. However, these methods don't tend to track large carbon molecules, making it harder to accurately judge the precise composition of the gas we burn.

From the end of 2019 to mid-2021, the researchers collected 234 samples of natural gas from 69 kitchen stoves across the Greater Boston area. A detailed analysis of these samples found a lot of variation across the area, and throughout the time period.

Common among them were hundreds of unique compounds, of which 21 – around 7 percent – were considered by federal standards to be hazardous at high enough levels.

In addition, they measured the concentration of odorants used to draw attention to high concentrations of the usually scentless gas. Alarming, some of the smaller leaks that occur in our homes of around 20 parts per million could be too faint to smell.

While the study didn't go so far as to connect leaks or exposure to natural gas with health problems or calculate the potential impact on the environment, it's enough of a wake-up call to pay better attention to what [could be a growing concern](#).

"Policymakers and utilities can better educate consumers about how natural gas is distributed to homes and the potential health risks of leaking gas appliances and leaking gas pipes under streets and make alternatives more accessible," [says](#) Buonocore.

●► This research was published in [Environmental Science & Technology](#).

## Environmental impact of white phosphorus weapons on urban areas

By Seyed Mohammad Mojabi; Azade Navazi; Farzane Feizi and Morteza Ghourchi

2010 International Conference on Environmental Engineering and Applications

Source: <https://ieeexplore.ieee.org/document/5596102>

Conflicts and geopolitical competition of global and regional powers have stimulated regional conflicts in certain geographic areas in the twenty-first century as well as the twentieth century. During the geopolitical conflicts governments to achieve their goals and commitments sometimes violated environmental treaties and human rights and used weapons which severely damaged the environmental resources and civilian population. Middle East as its special features within the world geopolitical system framework has always been in the focal point of competition and geopolitical conflicts in the twentieth century. On the very beginning of twenty-first century, several regional wars happened in the Middle East the western countries war against Iraq in a coalition lead by the United States in 2003, Lebanon thirty-three days war in 2006, Gaza-Israel war in 2008, and Yemen and Saudi Arabia's Army war with Shiite rebels in northern Yemen in 2009, are some of the geopolitical conflicts which in many cases targeted and damaged the environment in the region. In all of these conflicts,

### WORLD

## Ukraine Accuses Russia of Striking Snake Island With Phosphorus Bombs

BY BRENDAN COLE ON 7/2/22 AT 7:13 AM EDT



phosphorus weapons were used in urban areas and against civilians and the environment was severely damaged. White phosphorus is a highly flammable incendiary material which ignites when exposed to oxygen. White phosphorus, flares in spectacular bursts with a yellow flame when fired from artillery shells and produces dense white smoke. It is used as a smokescreen for troop movements and to illuminate a battlefield. White phosphorus has a significant, incidental, incendiary effect that can severely burn people and set structures, fields, and other civilian objects in the vicinity on fire. White phosphorus has destructive effects on the environment and also plants and **may remain within the deep soil for several years without any changes.**

White phosphorus, despite having a severe impact on non-military population and its widespread usage in recent (urban) wars continues to be known as a conventional weapon. According to the third Geneva Convention

protocol, first article of the third protocol of Conventional Weapons Treaty, Lahe Court Conference in 1899, the eighth article of International Criminal Court and the first article of ENMOD Convention, deliberate attacks on civilians and civilian facilities, residential areas, places which civilians use, such as hospitals, religious buildings and schools, and using weapons that cause severe injuries or using techniques of environmental change that have severe or, long-term effects on the environment is



prohibited. This article, through descriptive-analytical method, has investigated using white phosphorus weapons in the Middle East geopolitical conflicts which urban areas and civilian populations were mainly in the focus.

# Iran demands accountability from countries complicit in Sardasht chemical attack

Source: <https://www.tehrantimes.com/news/474338/iran-demands-accountability-from-countries-complicit-in-sardasht>

July 03 – Kazem Qaribabadi, head of Iran's Human Rights Headquarters and deputy chief of the Judiciary, said on Saturday that the U.S. and certain European nations were complicit in providing chemical weapons to the former Iraqi despot Saddam Hussein, and that they should be held accountable.



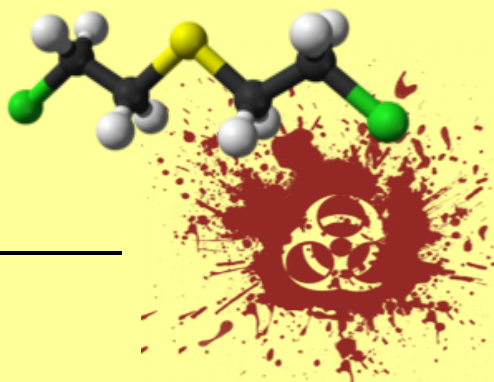
Speaking at a ceremony commemorating the anniversary of the Saddam regime's bombardment of Sardasht in West Azerbaijan, Qaribabadi asserted that "the Islamic Republic of Iran is a victim of weapons of mass destruction, more than 13,000 people have been martyred and more than 100,000 injured as a result of the use of chemical weapons against the people of our country, and some of our war veterans which were affected by the Saddam chemical attacks still become martyrs on a daily basis."



In accordance to a report by the Organization for the Prohibition of Chemical Weapons (OPCW), he said, more than 15 countries, mostly in Europe, as well as the U.S., were involved in arming the Saddam regime with chemical weapons and

that these governments must now be held accountable for their complicity. In addition, Qaribabadi urged the international legal bodies to hold these counties accountable, saying that lawsuit has been filed against certain European individuals, but that is not enough. Sardasht was the first city that Saddam struck with chemical weapons during his imposed war on Iran.

still suffering severe illnesses from the attacks. During the 1980–1988 war that Iraq inflicted on Iran, chemical weapons caused tens of thousands of deaths and injuries. The impacts, which include chronic respiratory issues, eye and skin problems, immune system illnesses, psychiatric disorders, genetic abnormalities, and presumably cancers, are still being felt by around 100,000 Iranians.



## How Hot Is Too Hot For The Human Body? It's Likely Less Than You Think

By W. Larry et al.

Source: <https://www.sciencealert.com/how-hot-is-too-hot-for-the-human-body-it-s-likely-less-than-you-think>

July 07 – Heat waves are [becoming supercharged as the climate changes](#) – lasting longer, becoming more frequent and getting just plain hotter. One question a lot of people are asking is: "When will it get too hot for normal daily activity as we know it, even for young, healthy adults?"

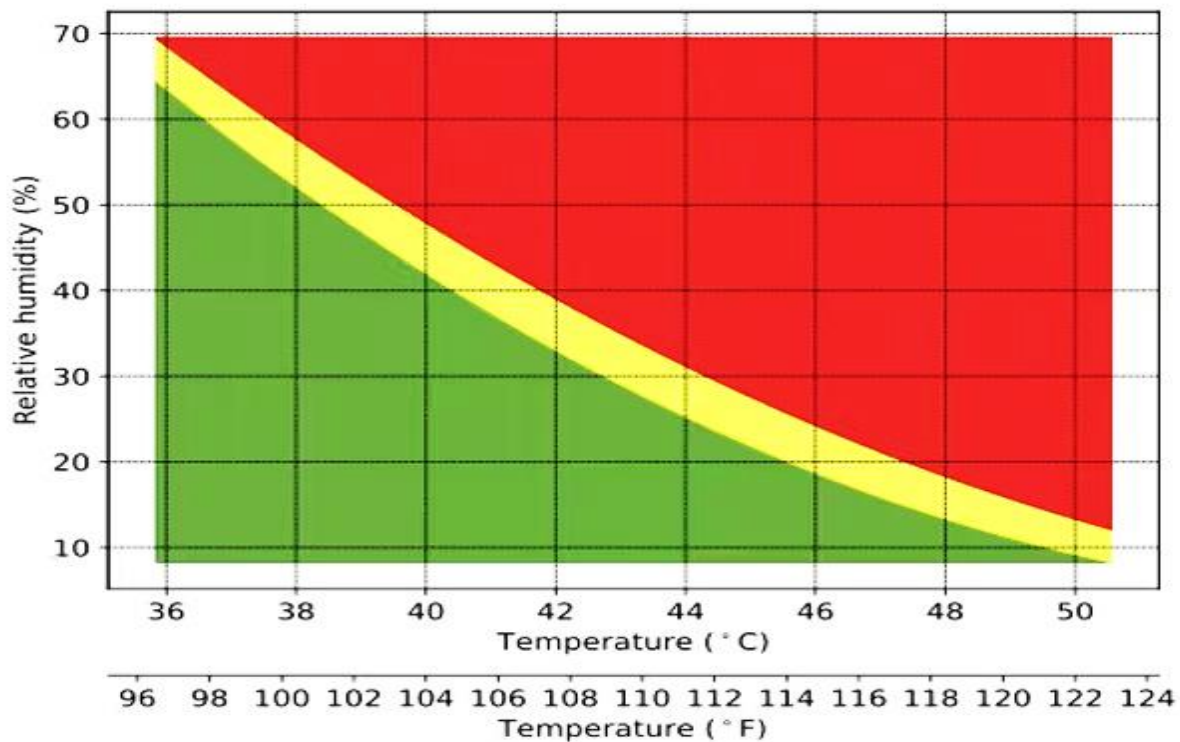
The answer goes beyond the temperature you see on the thermometer. It's also about humidity. [Our research](#) shows the combination of the two can [get dangerous faster](#) than scientists previously believed.

Scientists and other observers have become alarmed about the increasing frequency of extreme heat paired with high humidity, measured as "wet-bulb temperature."

During the heat waves that overtook South Asia in May and June 2022, Jacobabad, Pakistan, recorded a [maximum wet-bulb temperature](#) of 33.6 C (92.5 F) and [Delhi topped that](#) – close to the theorized upper limit of human adaptability to humid heat.

People often point to a [study published in 2010](#) that estimated that a wet-bulb temperature of 35 C – equal to 95 F at 100 percent humidity, or 115 F at 50 percent humidity – would be the upper limit of safety, beyond which the human body can no longer cool itself by evaporating sweat from the surface of the body to maintain a stable body core temperature.

It was not until recently that this limit was tested on humans in laboratory settings. The results of these tests show an even greater cause for concern.



Similar to the National Weather Service's heat index chart, this chart translates combinations of air temperature and relative humidity into critical environmental limits, above which core body temperature rises. The border between the yellow and red areas represents the average critical environmental limit for young men and women at minimal activity. (W. Larry Kenney, CC BY-ND)

### The PSU H.E.A.T. Project

To answer the question of "how hot is too hot?" we brought young, healthy men and women into the [Noll Laboratory at Penn State University](#) to experience heat stress in a controlled environment. These experiments provide insight into which combinations of temperature and humidity begin to become harmful for even the healthiest humans.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

Each participant swallowed a small telemetry pill, which monitored their deep body or core temperature. They then sat in an environmental chamber, moving just enough to simulate the minimal activities of daily living, such as cooking and eating. Researchers slowly increased either the temperature in the chamber or the humidity and monitored when the subject's core temperature started to rise. That combination of temperature and humidity whereby the person's core temperature starts to rise is called the "[critical environmental limit](#)." Below those limits, the body is able to maintain a relatively stable core temperature over time. Above those limits, core temperature rises continuously and risk of heat-related illnesses with prolonged exposures is increased. When the body overheats, the heart has to work harder to pump blood flow to the skin to dissipate the heat, and when you're also sweating, that decreases body fluids. In the direst case, prolonged exposure can result in heat stroke, a life-threatening problem that requires immediate and rapid cooling and medical treatment. Our studies on young healthy men and women show that this upper environmental limit [is even lower](#) than the theorized 35 C. It's more like a wet-bulb temperature of 31 C (88 F). That would equal 31 C at 100% humidity or 38 C (100 F) at 60 percent humidity.

### Dry vs. humid environments

Current heat waves around the globe are approaching, if not exceeding, these limits. In hot, dry environments the critical environmental limits aren't defined by wet-bulb temperatures, because almost all the sweat the body produces evaporates, which cools the body. However, the amount humans can sweat is limited, and we also gain more heat from the higher air temperatures. Keep in mind that these cutoffs are based solely on keeping your body temperature from rising excessively. Even lower temperatures and humidity can place stress on the heart and other body systems. And while eclipsing these limits does not necessarily present a worst-case scenario, prolonged exposure may become dire for vulnerable populations such as the elderly and those with chronic diseases. Our experimental focus has now turned to testing older men and women, since even healthy aging makes people less heat tolerant. Adding on the increased prevalence of heart disease, respiratory problems and other health problems, as well as certain medications, can put them at even higher risk of harm. People over the age of 65 comprise some [80–90 percent of heat wave casualties](#).

### How to stay safe

Staying well hydrated and seeking areas in which to cool down – even for short periods – are important in high heat. While more cities in the United States are expanding [cooling centers](#) to help people escape the heat, there will still be many people who will experience these dangerous conditions with [no way to cool themselves](#). Even those with access to air conditioning might not turn it on because of the [high cost of energy](#) – a common occurrence in Phoenix, Arizona – or because of [large-scale power outages](#) during heat waves or wildfires, as is becoming more common in the western US. A recent study focusing on [heat stress in Africa](#) found that future climates will not be conducive to the use of even low-cost cooling systems such as "swamp coolers" as the tropical and coastal parts of Africa become more humid. These devices, which require far less energy than air conditioners, use a fan to recirculate the air across a cool, wet pad to lower the air temperature, but they become ineffective at high wet-bulb temperatures above 21 C (70 F). All told, the evidence continues to mount that [climate change](#) is not just a problem for the future. It is one that humanity is currently facing and must tackle head-on.

**W. Larry Kenney** is a Professor of Physiology, Kinesiology and Human Performance @ Penn State.

**Daniel Vecellio** is a Geographer-climatologist and Postdoctoral Fellow @ Penn State.

**Rachel Cottle**, is a Ph.D. Student in Exercise Physiology @ Penn State.

**S. Tony Wolf**, is a Postdoctoral Researcher in Kinesiology @ Penn State.

**EDITOR'S COMMENT:** A very useful article for all CBRN First Responders suffering inside PPE during operations. Heat is an invisible enemy and we need to know the enemy to survive!

## How to Stay Cool in PPE/HAZMAT/CBRNE Suits

By Justin Li

Source: [https://www.qoreperformance.com/blogs/cbrne\\_hazmat/staying-cool-in-the-suit-preventing-heat-incidents-in-the-cbrne-hazmat-environment](https://www.qoreperformance.com/blogs/cbrne_hazmat/staying-cool-in-the-suit-preventing-heat-incidents-in-the-cbrne-hazmat-environment)

Working in PPE (Personal Protective Equipment) is hot. Dangerously hot. Overheating is the most common injury associated with wearing tarp-like HAZMAT or CBRNE protection suits.



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I worked in the Chemical, Biological, Radiological, and Nuclear (CBRNE) Defense world for three years within the Army. I've worked the last three years as a full-time HAZMAT Urban Search and Rescue Technician/Medic. Throughout these roles, I have spent well over 100 hours in a HAZMAT suit and hundreds more treating and monitoring soldiers for heat related injuries.

### Help, I've Fallen and I Can't Get Up!

Let's walk through a common HAZMAT PPE work scenario to give you a picture of these extreme conditions created by the personal protective equipment:

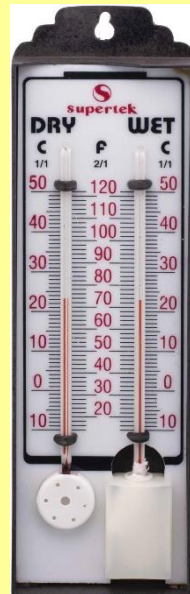
As you work beside your HAZMAT teammates, you start to feel the sweat drip down your shoulders, the gloves of your suit sloshing with accumulated sweat. *How can I be this sweaty?* You think to yourself. The sad reality is that your team has only been working for twenty or so minutes. You stand to lift a tool up to your team lead who is clambering into a wrecked vehicle. As you lift the 45 pound splitters, you see white and collapse to the ground!

This brief account sounds extreme but is a common scenario in the CBRNE/HAZMAT field. The irony is that the personal protective equipment suits worn by the HAZMAT workers to protect them from the dangerous environment can actually cause an extreme and potentially dangerous heat environment within the suit itself.

### Wet Bulbs and Heat Index

Cooling is crucial when wearing protective suits in the CBRNE world. In 2016, according to [The Medical Surveillance Monthly Report \(MSMR\)](#) over 401 Soldiers suffered from Heat Stroke and 2,135 suffered from heat exhaustion in the Active Duty component alone! The number of annual heat related injuries within the Active Army continue to rise with each year. To have a more holistic understanding of the dynamics at play, let's discuss the [Wet Bulb Globe Temperature \(WBGT\)](#) and how the U.S. Army uses this information to create guidelines on recommended work/rest cycles.

The Wet Bulb is a small device that uses temperature, humidity, wind, and a slew of other things to determine the WBGT. Once the WBGT is determined, this data point can be located on the chart. From there, individuals and organizations can find recommendations on their working protocol and determine the safest work rotations for their employees. For example, according to this chart, wearing the [MOPP 4 \(CBRNE Suit\)](#) adds 20 degrees to the external temperature. This increase may not be problematic in balmy 75 degree F weather, but when it is 98 degrees F out with 95% humidity, that 10-20 degrees changes the temperature conditions and safety requirements dramatically!



Temperatures	Stations and Workload				
	Station 1 Primary Wash	Station 2 Decontaminant Application	Station 3 Contact Time/Interior Decontamination	Station 4 Rinse	Station 5 Check
	Physical Exertion				
	Moderate	Heavy	Moderate	Moderate	Light
Cool (less than 68°F)	60 work 15 rest	30 work 30 rest	60 work 15 rest	60 work 15 rest	60 work 15 rest
Warm (68°–74°F)	45 work 45 rest	20 work 20 rest	45 work 45 rest	45 work 45 rest	50 work 50 rest
Hot (74°–84°F)	30 work 60 rest	15 work 30 rest	30 work 60 rest	30 work 60 rest	40 work 80 rest
Very hot (greater than 84°F)	20 work 60 rest	10 work 30 rest	20 work 60 rest	20 work 60 rest	25 work 75 rest

Recommended work/rest cycles for detailed equipment decontamination ([ATP 3-11.74/2021](#))





### The Risk to Workers

Naturally, our bodies have several ways to [cool down](#). Because of the protective nature of CBRNE Suits, the suit itself cuts off the flow of air between your body and the external environment. As a result, your body's ability to cool down is severely limited. These circumstances can lead to very serious heat injuries. Some units try to mitigate the heat by using semi-permeable suits such as the [Blauer](#) suit (From personal experience, a HAZMAT suit is hot! No matter what!).

The risk of heat injuries is so great within the suits that workers are required to have their vital signs checked before *and* after their work cycles. It is not uncommon for an individual to get out of the suit and have a body temperature of 100-103 degrees F and to lose 3-5 pounds over the course of their shift! These changes do not always warrant an emergency - the human body is generally able to compensate for these extreme conditions while in the suit and then return to normal during the rest cycles. During extended work periods, though, the body's ability to maintain homeostasis slowly declines. At that point, the worker is highly susceptible to heat exhaustion.

**EDITOR'S COMMENT:** I added the work/rest cycles from ATP-3-11.74 as an example of a working schedule that needs to be followed to avoid health problems due to heat stress.

## ISIS planned chemical attacks in Europe, new details on weapons program reveal

By Joby Warrick

Source: <https://www.washingtonpost.com/national-security/2022/07/11/isis-chemical-biological-weapons/>

July 11 – In the summer of 2014, as his followers were ravaging the cities of northern Iraq, Islamic State leader Abu Bakr al-Baghdadi convened a secret meeting with a weapons expert whose unusual skills the terrorist chief was anxious to acquire.

His guest was a small man, barely above 5 feet tall, and he had only recently been freed from a years-long stint in U.S. and Iraqi prisons. But before that, **Salih al-Sabawi had been an Iraqi official of some renown: a Russian-trained engineer who had once helped President Saddam Hussein build his extensive arsenal of chemical weapons.**

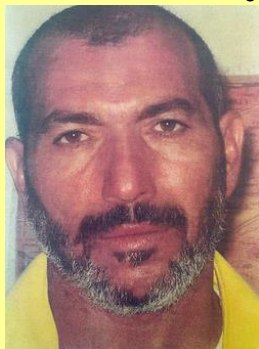
Baghdadi had summoned Sabawi, 52, to offer him a job. If supplied with the right equipment and resources, could he produce the same weapons for the Islamic State? Sabawi's reply, according to a later intelligence report about the meeting, was yes. He could do that and more.

Thus began what U.S. and Iraqi Kurdish officials describe as a crash effort aimed at building the biggest arsenal of chemical and, potentially, biological weapons ever assembled by a terrorist group. Within six months, under Sabawi's direction, the Islamic State would manufacture mustard gas, a chemical weapon from the World War I era, as well as bombs and rockets filled with chlorine.

But Sabawi's ambitions, and by extension Baghdadi's, were much broader, according to newly disclosed details on the Islamic State weapons program. Iraqi Kurdish intelligence reports, seen by The Washington Post, shed new light on the role played by Sabawi, a mysterious figure known within the terrorist group as Abu Malik, and the ambitious plan by Islamic State leaders to develop and use weapons of mass destruction in Iraq and abroad.

New insights also are emerging from a U.N. investigation that is combing through millions of pages of Islamic State records as it seeks evidence of the group's war crimes. In addition, several current and former U.S. officials in interviews with The Post spoke for

the first time in detail about an urgently planned military operation, conducted in 2015 by U.S. Special Operations forces with **assistance from Kurdish Peshmerga** operatives, to kill Sabawi and crush the weapons program before it reached maturity.



This undated prison photo depicts the Iraqi chemical weapons expert Salih al-Sabawi who was later known within ISIS as Abu Malik. (Department of Defense)

U.S. officials learned through electronic surveillance in 2014 that Sabawi was working to produce powerful new weapons using highly lethal botulinum toxin and ricin, while also pursuing plans to make weaponized anthrax. Botulinum toxin, a neurotoxin derived from same bacteria that causes botulism, was explored as potential weapon by both the United States and the Soviet Union during the Cold War. Ricin, a toxin

extracted from castor beans, was weaponized by the Soviets and used in political assassinations.

Sabawi's intention, current and former U.S. officials said, was to create a large stockpile consisting of multiple types of chemical and biological agents to be used in military campaigns as well as in terrorist **attacks against the major cities of Europe.**



## ICI C<sup>2</sup>BRNE DIARY – July 2022

“They were specifically looking at Western Europe,” a senior U.S. official knowledgeable about Islamic State operations said. Like several other U.S. and Iraqi officials, he spoke on the condition of anonymity to discuss details obtained from sensitive surveillance operations. “We know they were also interested in U.S. military bases, on the continent, or really anywhere,” the official said. “They were ultimately going to go with the easiest target.”

That the Islamic State had manufactured small quantities of chemical weapons has been [previously reported](#). **The terrorist group used chlorine and mustard gas against Kurdish and Iraqi forces nearly two dozen times, from early 2015 until the liberation of the Iraqi city of Mosul two years later.**

Other terrorist groups, including al-Qaeda, have explored the feasibility of making chemical and biological weapons. But by recruiting Sabawi, the Islamic State had acquired the services of a rare expert with years of practical experience in making chemical weapons in industrial-sized quantities.



Chlorine gas seeps from the canister above following a chemical weapons attack by the Islamic State against Kurdish fighters outside a northern Iraqi town in Kesik Kupri in 2015. (Kurdish Regional Government of Iraq)

The U.S. government’s only public reference to Sabawi came in a brief 2015 Pentagon statement announcing the recent death of a “chemical weapons engineer” named Abu Malik in an airstrike. Few knew at the time about the extent of Sabawi’s experience or his vision for providing Islamic State leaders with frightening weapons to augment the group’s terror campaign in Europe.

“If Abu Malik had survived, his experience working for Saddam’s program would have made the threat of the Islamic State’s chemical weapons much higher,” said [Gregory Koblentz](#), an expert on chemical and biological weapons and director of the Biodefense Graduate Program at the Schar School of Policy and Government at George Mason University. “It is pretty horrifying to think of what could have happened if the Islamic State had used a chemical weapon, instead of guns and bombs, to conduct one of their attacks in a major European city.”

### Toxic factories in Iraq

During the 1980s, at the height of Saddam’s reign as the strongman leader of Iraq, the manufacturing center for Iraqi chemical weapons was a massive [industrial complex](#) called the **Muthanna State Establishment**, some 85 miles northwest of Baghdad. Iraqi scientists oversaw the production of at least four kinds of chemical weapons, which the army put to immediate use in the brutal trench warfare of the Iran-Iraq War. Iraqi chemical bombs and shells were used to kill or wound more than 50,000 Iranians, from front-line soldiers to civilians living in villages and towns along the border.

Among the scores of scientists employed at Muthanna was Sabawi, who, according to his intelligence file, took a job in the facility in 1989, at age 28. An Army chemical engineer who had trained in Iraq and



in the Soviet Union, he worked at the weapons plant until operations halted with the defeat of the Iraqi army in the first Gulf War in 1991.

At the end of the war, Muthanna was at its peak, its three main factories capable of churning out 500 tons of sulfur mustard, commonly called mustard gas, each year, along with smaller quantities of deadlier nerve agents, such as tabun, sarin and VX. Sabawi was specifically involved in mustard-gas production during the plant's final three years, according to a dossier maintained by the Iraqi Kurdish Regional Government's Counter Terrorism Department.

After the war, Sabawi found that his skills as a weaponeer were no longer needed. The chemical weapons factories at Muthanna were systematically dismantled in the 1990s under U.N. supervision, and hundreds of tons of the weapons he helped make were destroyed in incinerators or chemically neutralized.

Sabawi kept his army job and was eventually promoted to brigadier general, but his resentment over the destruction of the Iraqi chemical weapons program appears to have lingered. According to the dossier, he joined an insurgent group after the U.S. invasion of Iraq in 2003, allying himself with Islamist extremists who called themselves al-Qaeda in Iraq. He was captured in 2005 and spent the next seven years behind bars, first in a U.S. military detention center and then a civilian-run Iraqi prison.

As a former high-ranking military officer, Sabawi maintained important political ties, and intelligence officials said he eventually was able to use those connections to regain his freedom. He walked out of prison in 2012, precisely the moment when his old insurgent group was beginning to regain strength under a new name, the Islamic State of Iraq. Later it would become known simply as the Islamic State, or ISIS.

Iraqi Kurdish officials said Sabawi may have known Baghdadi from his years as an insurgent. In any case, the self-proclaimed caliph of the Islamic State became intensely interested in the former weaponeer after his fighters completed their stunning conquest of Mosul in 2014.

That was Baghdadi's moment of triumph, and he was looking to capitalize on it. Having seized huge swaths of Iraq and Syria, he now controlled resources that no terrorist leader had ever possessed: military bases, factories, universities, television stations, internet servers and banks filled with millions of dollars in hard currency.

With tens of thousands of fighters at his command, and more arriving each day, Baghdadi proclaimed to his followers that the Islamic State would eventually conquer all the Middle East, while using the threat of mass-casualty terrorist attacks to keep Western countries from intervening. To accomplish his vision, U.S. officials said, Baghdadi needed special weapons. And Sabawi knew how to make them.

### **'Emir' of chemical weaponry**

Sabawi's Kurdish dossier is a thick sheaf of documents and reports that span 10 years, including the brief but intensely busy period when he held the title of emir of Manufacturing of Chemical and Biological Weaponry for the Islamic State. A mug shot accompanying the file depicts a middle-aged man with close-cropped hair, a gray-flecked beard and brown eyes.

Some of the Iraqi experts who went to work for the Islamic State would later claim that they were forced to take jobs or accepted positions because they had no other way to make a living. By contrast, a summary document profiling Sabawi's role in the terrorist group suggests he was an enthusiastic participant who was personally loyal to Baghdadi, and well-rewarded for his service.

"He was a high-ranking official in ISIS, close to Abu Bakr al-Baghdadi and responsible for advancing chemical and biological weaponry," the document states.

Shortly after his meeting with Baghdadi, the records show, Sabawi was given his own laboratory, in a technical school on the grounds of Mosul University, and allowed to recruit and hire a professional staff that included foreign-trained engineers. For production of the weapons themselves, the Islamic State commandeered a factory in Wadi Ikab, a bleak industrial neighborhood in the far western outskirts of Mosul.

In the summer of 2014, to help Sabawi acquire the needed materials, the caliphate organized an extensive canvass of the region's hundreds of laboratories and warehouses for equipment and supplies that could be used to make weapons of all kinds, from conventional explosives to toxic compounds, said Jeff Brodeur, a retired U.S. Army chemical and biological weapons expert who investigated Islamic State activities after the group was driven from Mosul. Terrorist operatives went into schools, factories and medical clinics and stripped them of every item deemed useful.

"They just went in and harvested whatever they needed," Brodeur said.

As U.N. investigators would later confirm, the Islamic State offered up the use of Iraqi prisoners as possible human test subjects for the new weapons Sabawi would make. Records and interviews suggest the group did use inmates in human trials on several occasions, according to a [report last year](#) by the U.N. Investigative Team to Promote Accountability for Crimes Committed by Daesh. Daesh is one of several common names for the Islamic State.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

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Because of Sabawi's background in making mustard gas, his first attempts at weapons production started with that relatively simple compound. A blister agent, it penetrates clothing and causes excruciating burns to the skin and eyes or, if inhaled, potentially fatal damage to lung tissues. Yet, despite his expertise, Sabawi appears to have struggled at first to replicate the formula used for making mustard gas at Muthanna.

Experts familiar with Sabawi's program say he switched to a simpler formula that yields a less potent product. Investigators from the Organization for the Prohibition of Chemical Weapons, a chemical-weapons watchdog group based in The Hague that would later collect samples, concluded that his brand of mustard gas was relatively crude, and tended to degrade quickly. Still, it was good enough to be used in battle.

Investigators have documented 20 chemical attacks by the Islamic State between January 2015 and April 2017. All involved mustard gas or chlorine, a common industrial compound widely available in Iraq and Syria, loaded into mortar shells or rockets or placed in barrels and detonated in suicide attacks.

**The worst episode, near Taza Khurmatu, a Kurdish town south of Kirkuk, wounded between 600 and 1,000 people in March 2016. At least three victims later died,** said retired Brig. Gen. Hajar Ismail, an adviser to the Iraqi Kurdish Regional Government who participated in the investigations, in an email.

In addition to the physical harm, Ismail said, the attacks struck fear across a band of Kurdish towns and villages that, years earlier, had been targets of Hussein's chemical weapons. Bombs and rockets filled with lethal gases killed at least 3,200 people around the city of Halabja in March 1988, the deadliest chemical attack ever conducted against civilians. "Few people in the world," Ismail said, "have experienced more chemical attacks than the Kurds."

### A secret intercept

The Islamic State's interest in mustard gas as a battlefield weapon triggered alarms in Washington. But those concerns deepened with the discovery of plans by the group's leaders to make additional weapons and export them for use in terrorist attacks.

Over the fall and winter of 2014, Sabawi came under continuous surveillance by U.S. intelligence agencies and Special Operations units, with assistance from Iraqi Kurdish operatives, according to two U.S. officials with knowledge of the operation. From intercepted communications came the discovery of Sabawi's efforts to obtain ingredients for botulinum toxin and ricin.

Islamic State records obtained by the U.N. investigators also describe the group's pursuit of botulinum toxin and ricin weapons, and reveal an "interest in developing anthrax," according to [an interim report](#) prepared for U.N. Security Council members in May.

U.S. analysts and experts note that Sabawi appears to have had no specific training in anthrax or biological toxins such as ricin, so he likely would have needed many months of trial and error to produce usable weapons. But in 2014, with the Islamic State in firm control of Mosul and all its resources, he may have believed he had plenty of time.

The fruits of his research were to be delegated to [a special unit](#) created by Baghdadi to carry out terrorist attacks overseas, U.S. officials said. That unit, led mainly by French and Belgian volunteers, would gain infamy in 2015 after spectacular attacks on cities in Western Europe. The deadliest was the coordinated [terrorist assault](#) on cafes and entertainment venues in Paris in November of that year. Using small arms and suicide bombs, the assault killed more than 130 people and wounded around 400.

### His final commute

At the time of the intercepts, an American-led coalition was beginning its fight to retake territory seized by the Islamic State, including Mosul, which was fully liberated in 2017. But the chemical threat could not wait. Pentagon officials decided to strike quickly, in an effort to eliminate Sabawi's operation before he had a chance to build bigger and better weapons. U.S. officials were able to monitor his daily commute from his laboratory at Mosul University to his home in a residential district called al-Mithaq, about six miles away. One afternoon in late January 2015, Sabawi was driving home from work, accompanied by one of his sons, apparently unaware that his vehicle was being tracked. A U.S. aircraft, most likely a drone, fired a missile that struck the car and killed both passengers.

Other strikes followed, targeting Sabawi's small network of labs and production centers. The two U.S. officials with knowledge about the operation said his Mosul University lab proved to be the most challenging target because of its location on a heavily populated urban campus.

Military planners deliberately scheduled the airstrike for late at night, on an evening when weather and winds conditions were favorable for minimizing the chances that any chemical releases might drift into from residential districts, the officials said.

As the missile was being launched, Kurdish operatives waited in nearby neighborhoods with special sensors that could detect a toxic plume. The devices picked up faint traces of chlorine and other telltale chemicals, but there were no reports of deaths or injuries resulting either from the explosion or the attack's aftermath, the officials said.



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By late 2016, all of the Islamic State's known chemical weapons facilities had been destroyed, and most of its senior operators killed or captured. The liberation of Mosul a few months later effectively ended the program's active phase.

Yet, it may not have eliminated the group's ambitions for chemical and biological weapons, the officials said. Some of Sabawi's former accomplices escaped the initial bombing campaign, and a few are believed to be still alive, the officials said.

**Joby Warrick** joined The Washington Post's National staff in 1996. He has served with the Post's investigative and national security teams, and currently writes about the Middle East, terrorism and weapons proliferation. He is the author of three nonfiction books, including his 2021 book "Red Line: The Unraveling of Syria and America's Race to Destroy the Most Dangerous Arsenal in the World." His second book, "Black Flags: The Rise of ISIS," which was awarded a 2016 Pulitzer Prize for nonfiction. His first book, "The Triple Agent," recounts the 2009 suicide attack by an al-Qaeda informant on a CIA base at Khost, Afghanistan, that killed seven U.S. intelligence operatives. Before joining The Post, Warrick covered the fall of communism in Eastern Europe as a UPI correspondent and worked as a reporter at the Delaware County (Pa.) Daily Times, the Philadelphia Inquirer and the News & Observer of Raleigh, N.C. While in Raleigh, he co-authored "Boss Hog," a series of investigative stories that documented the political and environmental fallout caused by factory farming in the Southeast. The series won the 1996 Pulitzer Prize Gold Medal for public service. **Honors and Awards:** Pulitzer Prize for general nonfiction, 2016; Pulitzer Prize Gold Medal for public service, 1996; White House Correspondents Association Edgar A. Poe award, 1996; Overseas Press Club of America Bob Considine Award for best newspaper interpretation of international affairs, 2003

## Army Bases Shockingly Unprepared for Chemical, Biological Attacks

Source: <https://theintercept.com/2022/07/09/army-chemical-biological-nuclear-attack-bases-unprepared/>

July 09 – Last spring, a van arrived at an inspection station near one of the gates at Fort Eustis in Newport News, Virginia. Military police noticed what looked like chemicals inside and that passengers were "displaying signs of illness." Soon first responders arrived, donned protective gear, and, according to a military press release, searched "[the vehicle for possible CBRNE exposure](#)," using the acronym for chemical, biological, radiological, nuclear, and high-yield explosives.

That "CBRNE exposure" wasn't real — it was part of a training exercise. "My biggest takeaway is that all the agencies work well together," Tim Scott, a lieutenant with the Fort Eustis Fire Department, said at the time, noting that coordination among multiple agencies was essential to ensuring that a similar real-world incident could be handled efficiently and effectively.

But an internal Army audit obtained exclusively by The Intercept indicates that a genuine CBRNE event might have ended in disaster.

The results of the audit, issued [just days after the April 2021 exercise](#) at Fort Eustis, were dismal. Investigators surveyed five Army bases to ascertain whether they were prepared to deal with an actual CBRNE emergency, like a [chemical weapons accident](#) or "[dirty bomb](#)" attack. In every case, they were not.

"The Army didn't take the required actions to ensure that installation first responders had the necessary equipment and training to respond to a chemical, biological, radiological, nuclear, and high-yield explosive (CBRNE) incident at the five installations we reviewed," according to the document, which was obtained under the Freedom of Information Act.

According to the audit, such failings likely exist across the Army, which operates around [1,800 bases, depots, and other sites worldwide](#), including storage facilities for America's remaining chemical weapons and a research institute that works with lethal pathogens like anthrax and plague.



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The audit placed the lion's share of the blame on the emergency management branch of the headquarters of the Department of the Army for failing to provide "sufficient oversight." The Army did not provide comment about the audit's findings prior to publication. "None of us are familiar with the report or its contents so we will need to ask around, which may take some time," spokesperson Richard Levine told The Intercept.

The audit, which was conducted from September 2019 through December 2020, found that the Army failed to provide enough required respiratory protection for all civilian first responders. At two bases, the Army also neglected to ensure that all civilian personnel completed CBRNE preparedness training.

The Army did not disclose the names of all five installations in the redacted document, but the audit mentions Kentucky's Blue Grass Army Depot, where both [explosive munitions and chemical weapons](#) are stored; Fort Bliss in [Texas](#), which is larger than the state of [Rhode Island](#); and Washington state's Joint Base Lewis-McChord, which has a [population of approximately 110,000](#) active-duty troops, family members, and civilian employees. The audit determined that civilian first responders at the latter two bases were also not

The auditors determined that the five installations were lacking a total of 241 pieces of equipment necessary for CBRNE response missions, including hand-held devices designed to [detect chemical warfare agents](#), [air-purifying gas masks](#), and hazmat boots. The investigators also "couldn't determine the existence of six other items," including additional chemical agent detectors and decontamination shelters, valued at more than \$142,000.

When equipment was located by auditors, large quantities — 89 percent of 440 pieces that were collectively valued at around \$1.2 million — were not listed in required documents, leaving the items "susceptible to loss or theft" or the Army in danger of purchasing "unnecessary or duplicate equipment."

The investigators also found that key "personnel confirmed the lack of clear roles and responsibilities for assessing equipment requirements and documentation" and "weren't provided specific guidance on determining, fielding, or sustaining" required gear. "These adverse conditions likely exist Armywide," according to the audit, "and should be corrected."

The audit's findings come as the possibility of military CBRNE catastrophes is on the rise. The Defense Department recently announced plans to [build nuclear microreactors](#) to power far-flung, austere military bases. An earlier Army effort to field portable nuclear reactors [resulted](#) in an [explosion and meltdown](#) that killed [three military personnel](#) in Idaho in 1961.



A fire burns on the amphibious assault ship USS Bonhomme Richard at Naval Base San Diego on July 12, 2020. (Photo: Sean M. Haffey/Getty Images)

Last year, the Defense Department warned that [chemical and biological weapons](#) "threats remain significant and are expanding at an exponentially accelerated pace." The military also continues to [store its own chemical weapons](#) at the U.S. Army Pueblo Chemical Depot in Colorado as well as the Blue Grass Army Depot. (The last chemical agents in the U.S. stockpile are scheduled to be destroyed, under the [Chemical Weapons Convention](#), by September 30, 2023.)



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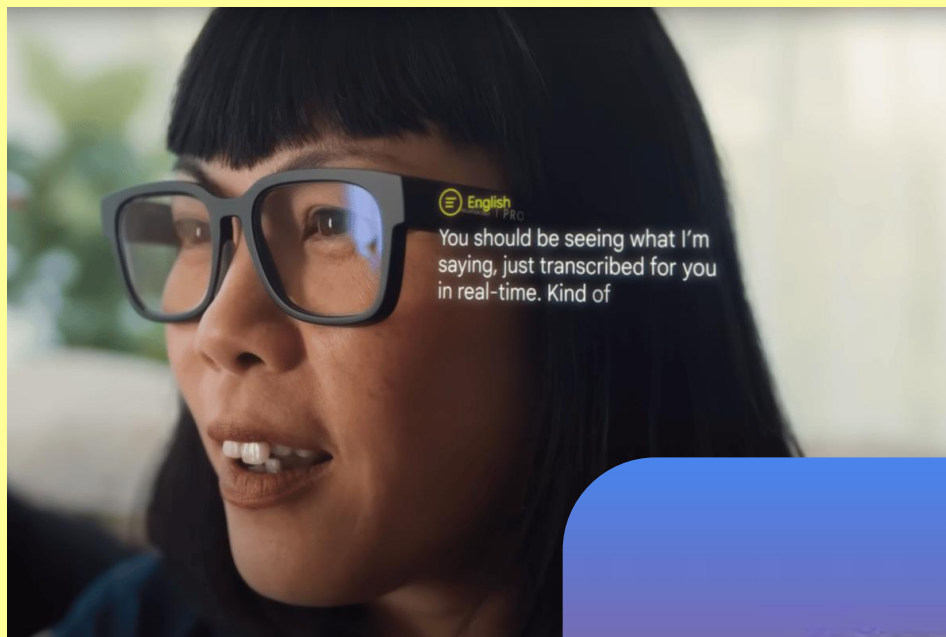
In 2019, due to safety concerns over insufficient decontamination methods, the Centers for Disease Control and Prevention [shut down research](#) at the Army's Medical Research Institute of Infectious Diseases in Fort Detrick, Maryland, where work centers on toxins and germs, including so-called select agents such as the Ebola virus, smallpox, anthrax, plague, and the poison ricin. [Work there resumed](#) in 2020.

That same year, a fire and “[massive](#)” explosion destroyed the \$1.2 billion amphibious assault ship USS Bonhomme Richard due to, among many issues, a disorganized federal and civilian response and [Navy firefighters](#) reportedly [lacking the necessary equipment](#) to battle the blaze.

### Google to trial new augmented reality glasses in public next month

Source [[+video](#)]: <https://newatlas.com/wearables/google-new-glasses-augmented-reality/>

July 20 – Seven years after the death knell was sounded for [Google Glass](#), the tech giant is returning to the well of augmented reality to produce another set of smart eyewear. Promising that “it's early, and we want to get this right, so we're taking it slow,” the company is now preparing its new prototype AR glasses for public trials to ascertain their real-world potential.



Google has actually been developing this new set of AR glasses for a little while, and back in May offered a glimpse of its progress so far. A video shared by the company showed the eyewear being used to translate voice-to-text in real time and projecting that onto the wearer's view, helping them understand speech in other languages.

The scope of the new AR glasses may extend well beyond that, however.



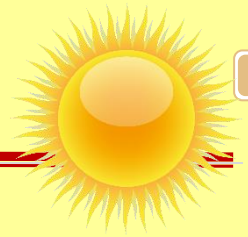
Google says there are limits to what it can learn from testing the glasses in a laboratory setting, and to offer functionality such as AR-guided navigation it needs real-world factors like weather and traffic to be taken into account.

The move will also help Google understand how they might be used in the real world. The glasses will feature in-lens displays, microphones and cameras, but won't be used to collect photos and videos, the company insists. Rather, that onboard hardware will be used for things like menu translations or to offer directions to a cafe nearby.

To begin with, these glasses will be publicly trialed by a handful of Google staff and selected testers, with the program to kick off next month.

**EDITOR'S COMMENT:** An interesting product that could be used with PPE in the near future.





## Will the Sun Soon Power First Responders?

Source: <https://www.dhs.gov/science-and-technology/news/2022/07/21/feature-article-will-sun-soon-power-first-responders>

July 21 – Fabric woven to harness solar power recently completed weaving trials. The fabric will ultimately be used to design high-functioning gear that can keep responders' tech charged and ready.

### Shining Solution

Millions of American homes are powered by solar panels, capturing light shining down from above and converting it into electricity. Solar power is a well-established energy resource with enormous potential and countless applications—perhaps limited only by our imaginations. Good thing imagination is an endlessly renewable resource for the [Science and Technology Directorate](#) (S&T).

The idea of clothing that can capture sunlight and turn it into electricity may sound like something out of science fiction, but S&T is working to make it a reality. [Photovoltaic \(PV\) energy harvesting fabric](#) is not only possible, but also a practical solution to a persistent challenge. First responders need light-weight power sources for their sensors, and other body-worn electronic devices. Energy harvesting fabric mitigates risk associated with relying solely on wall outlets to charge equipment. For instance, during a natural disaster and emergency response, the power grids may be compromised. The fabric also eliminates the need to carry extra batteries. “Smart textiles are the future,” said S&T Program Manager Kimberli Jones-Holt. “This energy harvesting fabric project is incredibly innovative. I've been so impressed by the ingenuity of the research team and I look forward to the day that first responders are wearing and benefiting from this product.”

### A Stitch in Time

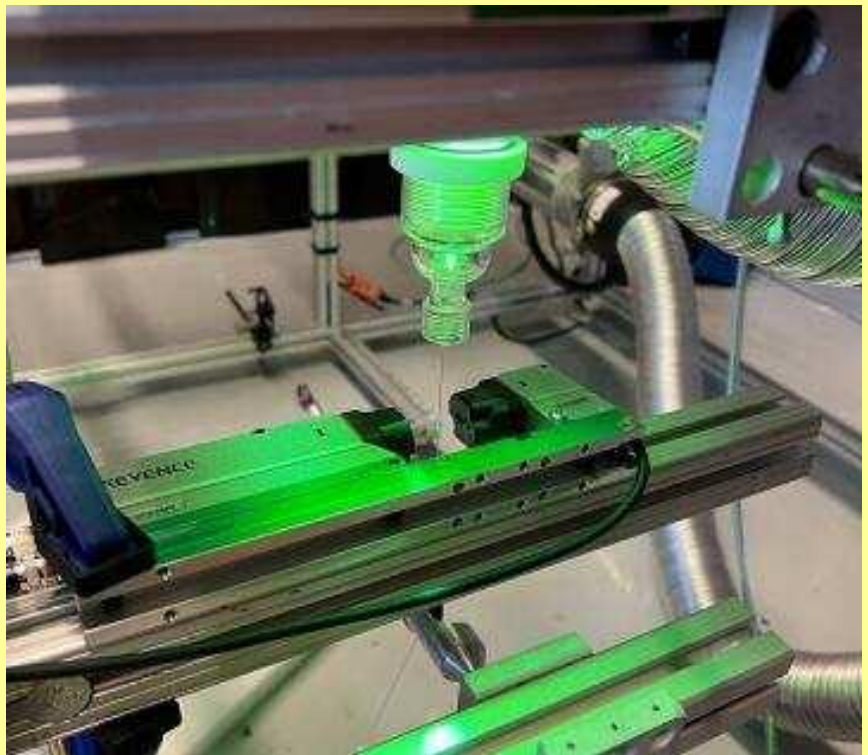
Measuring the stainless steel wire. Photo credit: University of Massachusetts Lowell.

The [First Responder Resource Group](#) initially identified this capability as a high-priority need, and S&T listened. The solution in development now involves creating a PV fiber that can be woven into a power fabric and then integrated onto first responder garments, shelters, and related equipment to provide reliable power for charging batteries to power electronics. The power output of the fabric will be sufficient to charge AA batteries in eight hours. This effort will provide the foundational framework towards the development of commercially viable, textile-integrated, energy-harvesting PV devices that can be tested for direct application in the field.

[S&T awarded \\$199,260 to Boston-based company Protect the Force, LLC](#), in August 2018 to initiate this work through the [Silicon Valley Innovation Program](#). The [University of Massachusetts Lowell](#) (UML) is also partnering on this important project through its world-class Fabric Discovery Center. Together, the team of industry, academic, and S&T experts created an initial prototype fabric with fibers containing an incredibly thin light harvesting coating on smooth stainless-steel wire core that measures only a few hundred nanometers. This allowed the team to successfully demonstrate the proof of concept at small scale (100 cm<sup>2</sup> fabric swatch) in July 2019 and then move on to the next phase of development.

### Work in Progress

“This is innovation in real-time,” said Francisco Martinez, Vice President to the Chief Technology Officer at Protect the Force, LLC. “This is a new technology, so the manufacturing equipment doesn't exist yet. We're constantly adjusting and improving to come up with a product that works and can be scaled up.”







Ultraviolet lamp used for curing the wire cladding. Photo credit: University of Massachusetts Lowell.

A key testament to the team's real-time ingenuity and problem-solving is the way they have been able to adapt and reconfigure their equipment. Their curing process is a prime example of this. They needed an ultraviolet lamp to cure the wire cladding since uncured wire is sticky and thus hard to work with. (Cladding is the application of protective layers for insulation.) Working at the cutting-edge of technology meant there was nothing commercially available for their purposes. The team was able to identify UV curable cladding material and the appropriate UV lamp to ensure uniform, even curing of the wire—and subsequent quality and reliability of the woven fabric.

### A Bright Future

Phase II includes initial production, testing of the PV energy harvesting fabric swatches, and demonstration of integration onto a firefighter garment. While the initial application is planned for wildland firefighting, S&T is exploring compelling opportunities to transition the technology to other Department of Homeland Security agencies and beyond.

"What we learn during this process can be used for a lot of other things," added Dr. Ramaswamy Nagarajan, UML Engineering Professor and Co-

Director of the Center for Advanced Materials' [Harnessing Emerging Research Opportunities to Empower Soldiers \(HEROES\)](#) program. "We need to get this right to enable future applications."

Fabric swatch with various patterns. Photo credit: University of Massachusetts Lowell.

In the Spring of 2022, UML successfully conducted weaving trials. The team integrated the PV nanofibers with hundreds of feet of Nomex® yarn, a flame-resistant textile used in protective apparel, using a Thread Controller 2 digital loom.

Design optimization is now currently underway.

Developers are working on weaving designs for the textile fibers that maximizes exposure to the sun and thus creates peak energy output from the fabric. They are experimenting with various patterns including twill, satin, dobby, and broken twill.

Flexibility and water repellence are other very important factors, and both depend upon proper cladding. Developers will also test resistance to various stressors to ensure compliance with National Fire Protection Association standards and work to make the fabric breathable, which has proven to be a significant scientific challenge.

The project will conclude later this year with the completion of Phase II. "The work that has been done to this point will be used to help determine additional interest from the first responder community for this type of technology," explained Jones-Holt. "The task will closeout with the development of energy harvesting fabric woven into a first responder garment."



## 2022 CBRNe-related conferences

## CBRNe Summit USA 2022

4-6 Oct 2022 | Denver, Colorado USA

<https://intelligence-sec.com/events/cbrne-summit-usa-2021-2-2/>

INTELLIGENCE-SEC

Our 2<sup>nd</sup> annual CBRNe Summit USA will be coming to Denver, CO on the 4<sup>th</sup> – 6<sup>th</sup> October 2022. This event brings together leading officials from the military, civil and scientific agencies to provide you will a full perspective on all CBRNe threats and challenges.

Over the 2-day conference and exhibition you will hear different perspectives on CBRNe preparedness, resilience and response. With the world entering a new chapter with the global COVID pandemic behind us many governments are now seeing the importance to improve CBRNe capabilities to deal with a future pandemic.

CBRNe Summit USA will also focus on Colorado State CBRNe response capabilities and analyse the challenges they face across the State; Chem-Bio countermeasures and emergency response procedures and agency collaboration; First responder techniques and training to allow inter-agency response to CBRNe incidents; International CBRNe threats and response techniques and Military CBRNe capabilities and development.

To take part in our inaugural CBRNe Summit USA conference and exhibition as either a speaker, sponsor, exhibitor or delegate please contact us at [events@intelligence-sec.com](mailto:events@intelligence-sec.com) or call us at +44 7792 47 32 46.



The banner features a dark blue background with a molecular structure on the left. In the center is a white logo of a snake forming a 'C' shape. To the right of the logo is the text 'CBRNe 14th PROTECTION SYMPOSIUM'. Further right, it says 'SCIENCE FOR SAFETY & SECURITY' and 'September 20th – 22nd 2022 Malmö, Sweden'. On the far right is the FOI logo with the text 'Organized by the Swedish Defence Research Agency, FOI, Sweden'.

## CBRNe Protection Symposium

20-22 September 2022 | Malmö, Sweden

<https://cbw.se/>

As an engaged professional within the CBRNe-protection field this symposium is for you! Contribute to the symposium through fruitful meetings, elaborated conversations and sharing of recent research. Visit the exhibition of CBRNe protection equipment, where industry and institutes display their latest products and research in an encouraging environment. The exhibition offers a good opportunity for the symposium participants to make themselves acquainted with commercially available state-of-the-art equipment related to CBRNe-protection.



The banner is divided into three panels. The left panel shows a person in a hazmat suit and a man in a suit, with the text 'NCT PRO Challenge Europe 2022' and a 'VIEW EVENT' button. The middle panel shows a group of men in military uniforms, with the text 'NCT Middle East 2022' and a 'VIEW EVENT' button. The right panel shows a group of people in military uniforms, with the text 'NCT South America 2022' and a 'VIEW EVENT' button.

## NCT Events 2022

<https://nct-events.com/>

NCT is back! After the stop imposed on us by the pandemic, we have a large calendar of events coming up in 2022. We will start in Abu Dhabi, February 7<sup>th</sup> and 8<sup>th</sup>. We will then reach almost every continent:



## ICI C<sup>2</sup>BRNE DIARY – July 2022

NCT is scheduled for Brazil, Germany, Thailand, Croatia, the United States, and South Korea. [Visit our website](#) for the latest news regarding dates and locations!



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**It is always good to have a Plan B.**

Dear colleagues,

I am pleased and honoured to invite you to participate in the first edition of the Cannes International Resilience Forum (CIRF). CIRF is an international conference dedicated to crisis management and resilience, which will take place at the Palais des Festivals et des Congrès in Cannes from Sunday 23rd to Wednesday 26th, October 2022.

IsraTeam Ltd., established in Israel in 1988, has a renowned expertise in the field of emergency management and mitigation, particularly during times of war, natural disasters or terrorist attacks. Its team is comprised of highly qualified experts, including high ranking personnel in the Israel Defence Forces (IDF) and Ministry of Health.

Regarding the prevention and management of major risks, Cannes is a pioneer city as it was certified in 2018 by the Ministry of Europe and Foreign Affairs for its expertise in "preventing terror risk during the organisation of events". In March 2021, the City of Cannes obtained an enlargement of this labelling to "sanitary and natural risk", as part of the Ministry program meant to highlight the expertise of local authorities.

The first edition of the Cannes International Resilience Forum will focus on building resilience strategies to face the consequences of Covid-19 pandemic as well as on sanitary crisis management.

Main issues to be discussed at the conference will be - Building the Resilience today to be ready for the next generation and will dive into such topics as:

1. "COVID-19" – LESSONS LEARNT.
2. "POST – COVID-19 ERA" Health Systems Preparedness.
3. CLIMATE CHANGE EFFECTS ON EMERGENCY PREPAREDNESS
4. The Mayor leadership
5. RADIOLOGICAL DISASTER MANAGEMENT
6. BUILDING RESILIENCE.
7. "THE CYBER WORLD" Threats and responses.
8. The Financial Challenge in a Disaster
9. The Functional Continuity in the Supply of electricity and Water
10. The Activity of First Responses
11. "THE WORLD TERRORISM" Counter terrorism and responses
12. Multidisciplinary Simulation Exercise Simulation systems to emergencies and crises events
13. TECHNOLOGICAL INNOVATION FOR BETTER RESILIENCE
14. The advance methodology to deal with MASS CASUALTY INCIDENT (MC)

Undoubtedly, the lessons learnt from COVID-19 Pandemic would be very useful for any case of mass disaster mitigation; it will be extremely crucial factor in any mitigation planning or crisis management in the future.



Your contribution to the conference will surely lead to a better understanding of the governing powers, the participants' roles, and the possibilities to be properly prepared in the future at the national and global levels.

**General Abraham Bachar**

*Chair of the Cannes International resilience Forum*

Founder and CEO of IsraTeam

Former Chief of Staff, Israeli Home Front Command and

Former Head of the Israeli National Emergency Management Agency.



### 3rd CBRN-E Forensic Course

Dates: 23 September – 02 October 2022

<https://www.cbrndefence.com/yazi/3-adli-kbrn-p-kursu>

**Organized by:**

In cooperation with CBRN Defense Policy Development Association & Forensic Scientists Association

► Deadline for registration: September 25, 2022

Recent events including the Iran-Iraq war in the 1980s, the chemical attack on the Tokyo subway, the bioterrorist attacks after the September 11, 2001 attack, the chemical weapons used numerous times in our neighboring Syria, the nuclear power plant accidents, the misuse of radiation in our daily lives, the recent Russian-Ukrainian war where chemical and nuclear danger's been on agenda, and especially the COVID-19 pandemic, which is claimed to be a biological weapon, have shown that "Chemical Biological-Radiological and Nuclear" threat, called CBRN, will, unfortunately, increase in the coming years, perhaps this unseen dangerous agents will be used conflicts like wars and terrorist events. It shows us that it will increase the possibility of using advanced technological weapons insidiously. However, more importantly, the threat of CBRN weapons, which has evidently increased more in the Middle East geography, including our country, has taken its place in the asymmetric war/terror threat. Defense and protection against these events is a situation that not only the security forces react to but also all civilian citizens should know, and that forces us to increase our awareness and consciousness on this issue.

Based on the reasons mentioned above; As the Chemical Biological Radiological Nuclear (CBRN) Defense Policy Development Association (CBRN Defense Platform) together with the Forensic Scientists Association, we will organize an online 3rd CBRN-E Forensic course between September 23-October 02, 2022 to raise awareness of CBRN threat in our country and to increase the awareness of this danger.

The training of the 3rd of the Forensic CBRN-P course whose first two of which were held in the year 2001 with great attention will be delivered at a very sensitive period when our world is talking about CBRN threat. In this training course, our expert academicians' lectures will cover topics including Forensic Sciences, Food Safety, Food Defense and Agroterrorism, Bioterrorism, Chemical Warfare Agents, Weapons of Mass Destruction, CBRN-P Substances Usage Methods, Targets, Dissemination Devices, Bomb / Dirty Bomb, Radioactive threats, Radionuclear Accidents, and Incidents, Suspicious Biological Package, Crime Scene Investigation and Forensic CBRN (Dirty Evidence) Investigation Laboratory in CBRN-P Attacks, Toxic Industrial Chemicals, Emergency, and Disaster Management in CBRN Incidents, CBRN Crime Scene Management. During this course, applications like scenario-based interactive studies of referee/cross-examination and table-top exercises on CBRN event management will also be performed.

The lessons are 60 hours in total and will be held between 09.00-18.00 on weekends and between 18.00-23.00 on weekdays. Attending at least 70 percent of the courses and being successful in the



## ICI C<sup>2</sup>BRNE DIARY – July 2022

exam is mandatory for certification. It is also mandatory to open the camera during the lesson. Since the course will be given in return for a donation, there is no refund.

### **Sponsorship Registration Procedures:**

Sponsorships from worldwide CBRN companies are kindly welcome for the 60-hour 3rd Forensic CBRN-E Course to be organized by the Chemical Biological Radiological Nuclear (CBRN) Defense Policy Development Association (CBRN Defense Platform) together with the Forensic Scientists Association.

### **GOLD SPONSORSHIP - 2000 USD**

DURING THE 60-HOUR COURSE, THE SPONSORING COMPANY LOGO WILL BE PUBLISHED DURING THE ENTIRE PANEL PRESENTATIONS. THE SPONSORING COMPANY WILL ALSO BE PROMOTED AS ONE COURSE HOUR COMPANY PRESENTATION.

### **SILVER SPONSORSHIP - 1500 USD**

DURING THE 60-HOUR COURSE, THE SPONSORING COMPANY LOGO WILL BE PUBLISHED DURING THE ENTIRE PANEL PRESENTATIONS.

### **BRONZE SPONSORSHIP - 1000 USD**

THE SPONSORING COMPANY WILL MAKE A ONE-HOUR PRESENTATION ABOUT THE COMPANY

Sponsorship fees will be deposited to the account of the Forensic Scientists Association, with the explanation of "Forensic CBRN Education Donation Gold/Silver/Bronze Sponsorship" to the IBAN address. Please contact us by e-mail or telephone before depositing. After the sponsorship process, Training materials will start to be sent to you and if you submit your mobile phone number, you will be registered to the 3rd Forensic CBRN-P whatsapp group.

**Account Name:** KİMYASAL BİYOLOJİK RADYOLOJİK NÜKLEER, QNB Finansbank Batıkent Şubesi (USD account)

IBAN No: 12001110000000095144488

**Contact Number:** +90 532 282 67 59

Turkish Chemical Biological Radiological Nuclear (CBRN) Defense Policy Development Association (CBRN Defence Platform)



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# BIO NEWS



## An Ancient Killer Is Rapidly Becoming Resistant to Antibiotics, Scientists Warn

Source: <https://www.sciencealert.com/a-medieval-killer-is-rapidly-becoming-resistant-to-more-antibiotics>



June 23 – Typhoid [fever](#) might be rare in developed countries, but this ancient threat, thought to have [been around for millennia](#), is still very much a danger in our modern world.

According to new research, the bacterium that causes typhoid fever is evolving extensive drug resistance, and it's rapidly replacing strains that aren't resistant.

Currently, antibiotics are the only way to effectively treat typhoid, which is caused by the bacterium **Salmonella enterica serovar Typhi** (S Typhi). Yet over the past three decades, the bacterium's resistance to oral antibiotics has been growing and spreading. Sequencing the genomes of 3,489 S Typhi strains contracted from 2014 to 2019 in Nepal, Bangladesh, Pakistan, and India, researchers found a recent rise in extensively drug-resistant (XDR) Typhi.

XDR Typhi is not only impervious to frontline antibiotics, like ampicillin, chloramphenicol, and trimethoprim/sulfamethoxazole, but it is also [growing resistant](#) to newer antibiotics, like fluoroquinolones and third-generation cephalosporins.

Even worse, these strains are spreading globally at a rapid rate.

While most XDR Typhi cases stem from south Asia, researchers have identified nearly 200 instances of international spread since 1990.

Most strains have been exported to Southeast Asia, as well as East and Southern Africa, but typhoid superbugs have also been found in the United Kingdom, the United States, and Canada.

"The speed at which highly-resistant strains of S. Typhi have emerged and spread in recent years is a real cause for concern, and highlights the need to urgently expand prevention measures, particularly in countries at greatest risk," [says](#) infectious disease specialist Jason Andrews from Stanford University.

Scientists have been warning about drug-resistant typhoid for years now, but the new research is the largest genome analysis on the bacterium to date.

In 2016, the first XDR typhoid strain was identified in Pakistan. By 2019, it had become the dominant genotype in the nation.

Historically, most XDR typhoid strains have been fought with third-generation antimicrobials, like quinolones, cephalosporins, and macrolides.

But by the early 2000s, mutations that confer resistance to quinolones accounted for more than 85 percent of all cases in Bangladesh, India, Pakistan, Nepal, and Singapore. At the same time, cephalosporin resistance was also taking over.

Today, [only one oral antibiotic is left](#): the macrolide, azithromycin. And this medicine might not work for much longer.

The new study [found](#) mutations that confer resistance to azithromycin are now also spreading, "threatening the efficacy of all oral antimicrobials for typhoid treatment". While these mutations have not yet been adopted by XDR S Typhi, if they are, we are in serious trouble.

If untreated, up to 20 percent of typhoid cases can be fatal, and today, there are 11 million cases of typhoid a year.

Future outbreaks can be prevented to some extent with typhoid conjugate vaccines, but if access to these shots is not expanded globally, the world could soon have another health crisis on its hands.



"The recent emergence of XDR and azithromycin-resistant S Typhi creates greater urgency for rapidly expanding prevention measures, including use of typhoid conjugate vaccines in typhoid-endemic countries," the authors [write](#).

"Such measures are needed in countries where antimicrobial resistance prevalence among S Typhi isolates is currently high, but given the propensity for international spread, should not be restricted to such settings."

South Asia might be the main hub for typhoid fever, accounting for 70 percent of all cases, but if [COVID-19](#) has taught us anything, it is that disease variants in our modern, globalized world are easily spread.

To prevent that from happening, health experts argue nations must expand access to typhoid vaccines and invest in new antibiotic research. One recent [study](#) in India, for instance, estimates that if children are vaccinated against typhoid in urban areas, it could prevent up to 36 percent of typhoid cases and deaths.

Pakistan is currently leading the way on this front. It is the first nation in the world to offer routine immunization for typhoid. Last year, [millions of children were administered the vaccine](#), and health experts argue more nations need to follow suit.

Antibiotic resistance is one of [the world's leading causes of death](#), claiming the lives of more people than [HIV/AIDS](#) or [malaria](#). Where available, vaccines are [some of the best tools](#) we have to prevent future catastrophe.

We don't have time to waste.

●► The study was published in [The Lancet Microbe](#).

## Can SARS-CoV-2 vaccine increase the risk of reactivation of Varicella zoster? A systematic review

By Hardik D Desai, Kamal Sharma, Anchal Shah, et al

*J Cosmet Dermatol.* 2021 Nov;20(11):3350-3361.

Source: <https://pubmed.ncbi.nlm.nih.gov/34719084/>

### Abstract

**Introduction:** Although the COVID-19 vaccination is deemed safe, exact incidence and nature if adverse effects, particularly dermatological ones, are still unknown.

**Objective:** To describe the demographic, clinical, morphological characteristics, outcomes, and timing of development of herpes zoster to the various COVID-19 vaccines. And to identify on whether COVID-19 vaccine has temporal relationship between development of herpes zoster (HZ).

**Methods:** We have performed a systemic review of articles from PubMed and Embase using MeSH and keywords like "Shingles," "Herpes zoster," "Varicella zoster," "COVID-19," "Vaccine," "SARS-CoV-2." No filters including country of publication, language, type of articles were applied. Individual case report references were filtered for any pertinent cases.

**Results:** A total of 54 cases consisting of 27 male and 27 female patients have been reported. There were cases with known risk factors for herpes zoster, which included age more than 50 years (n = 36),

immunological disorders (n = 10), chronic disease (n = 25), metabolic disorder (n = 13), malignancy (n = 4), and psychiatric disorder (n = 2). The mean (SD) period between development of herpes zoster and COVID-19 vaccination was 7.64 (6.92) days. Majority of the cases were from the high-income and/or middle-income countries. 86.27% of the cases of HZ were reported due to mRNA vaccine. Thirty-six patients 36/45 (80%) developed herpes zoster following the priming dose of COVID-19 vaccine among those who received mRNA vaccine.

**Conclusion:** We could not establish definite link but there may be possible association between COVID-19 vaccine and shingles. Large-scale studies may help to understand the cause-effect relationship.







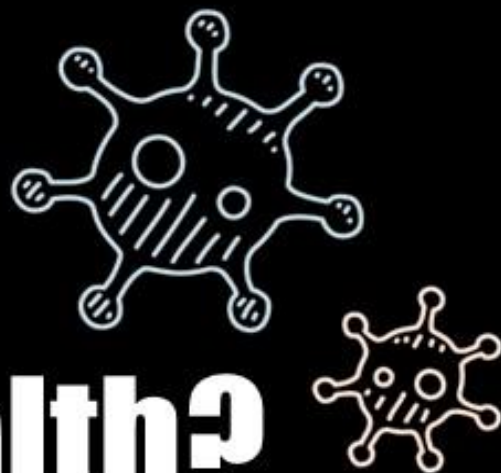
**Is**

**mass entertainment**

**more important**

**than**

**public health?**



## COVID-19 vaccines didn't cause monkeypox outbreak

May 24, 2022

Source: <https://apnews.com/article/Fact-Check-Monkeypox-AstraZeneca-Vaccine-139032138448>

**CLAIM:** The chimpanzee adenovirus vector used in AstraZeneca's COVID-19 vaccine is causing the monkeypox outbreak.

**AP'S ASSESSMENT: False.** Adenoviruses and poxviruses are unrelated, and monkeys and chimpanzees are different species. Monkeypox is a poxvirus that originates in wild animals and occasionally jumps to people. The chimpanzee adenovirus causes the common cold in chimps. While the AstraZeneca COVID-19 vaccine uses a harmless, weakened chimp adenovirus to trigger an immune response, the strain has been altered so it cannot infect humans with an adenovirus, nor could it cause monkeypox.

**THE FACTS:** As global health authorities investigate an outbreak of [monkeypox](#) in recent weeks, some social media users are spreading unfounded claims about the origin of the unprecedented outbreak, including the baseless theory that monkeypox emerged from certain COVID-19 vaccines. "Oh, they put Monkey Pox in the vaccines," suggested one Twitter user, sharing an image of an AstraZeneca vaccine pamphlet that listed "recombinant, replication-deficient chimpanzee adenovirus" as an ingredient. The post gained thousands of shares and likes. "The Covid jabs contained Chimpanzee adenovirus, now we have Monkey Pox. It probably is that simple," said another. But experts say it is not possible for the chimpanzee adenovirus vector used in the AstraZeneca shot to cause monkeypox for a number of reasons, including that the two illnesses are unrelated, the [viral vector vaccines cannot infect humans](#) and chimpanzees and monkeys are different species. "On three different levels there are issues with this theory," said Dr. Mark Slifka, a microbiology and immunology expert and professor at the Oregon National Primate Research Center. Dr. Andrea McCollum, an epidemiologist with the Centers for Disease Control and Prevention's [Poxvirus and Rabies Branch](#) also told The Associated Press that "there is no data to support this claim." Adenoviruses are a common group of viruses that can cause cold-like symptoms, among other issues, in humans and animals. Viral vector vaccines, such as the AstraZeneca and Johnson & Johnson COVID-19 vaccines, use dead, nonreplicable strains of such adenoviruses to generate an immune response that can in turn help fight the novel coronavirus, [according to the CDC](#). Monkeypox is a virus that belongs to the same virus family as smallpox, but causes milder symptoms. Most patients experience fever, body aches, chills and fatigue, and some more severe cases can cause rashes and lesions. "Adenoviruses are adenoviruses, they are not poxviruses. They are completely different families and have no relationship whatsoever to each other," Slifka said, adding, "there's no cross-reactivity in terms of antibody responses between an adenovirus and a poxvirus." Dr. David Freedman, a professor of infectious diseases at the University of Alabama at Birmingham, confirmed that the adenovirus used in the AstraZeneca vaccine, and other similar vaccines, is not capable of making humans sick with either illness. "The adenovirus cannot multiply as that adenovirus has had the gene that would enable it to multiply and cause any infection in humans completely excised," said Freedman, who is also the [president-elect](#) of the American Society of Tropical Medicine and Hygiene. Freedman and Slifka explained that the claims incorrectly compare chimpanzees and monkeys, and also clarified that even though the virus is named monkeypox, it is not specific to monkeys.

"One of the misnomers is that monkeypox is spread by monkeys," Slifka said. "In reality, monkeypox is very rarely spread by monkeys, it's spread by rodents. It was described as monkeypox because it was identified in a monkey once upon a time when they first named it, but it's actually mainly spread by rodents." Freedman added that neither monkeys, nor chimps, are a natural host for monkeypox. [In an interview with the AP](#), Dr. David Heymann, a leading adviser to the World Health Organization who formerly headed the agency's emergencies department, described the origins of the recent monkeypox outbreak as "a random event" that appears to have been caused by sexual activity at two recent raves in Europe.

To date, WHO has recorded more than 90 cases of monkeypox in a dozen countries including Canada, Spain, Israel, France, Switzerland, the U.S. and Australia. The cases so far have been mild, with no deaths reported.

## New coronavirus subvariants **escape** antibodies from vaccination and prior Omicron infection, studies suggest

By Jacqueline Howard (CNN)

Source: <https://edition.cnn.com/2022/06/22/health/ba4-ba5-escape-antibodies-covid-vaccine/index.html>

June 23 – [Omicron subvariants](#) BA.4 and BA.5 appear to escape antibody responses among both people who had previous Covid-19 infection and those who have been fully vaccinated and boosted, according to new data from researchers at Beth Israel Deaconess Medical Center, of Harvard Medical School.



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However, Covid-19 vaccination is still expected to provide substantial protection against severe disease, and vaccine makers are working on updated shots that might elicit a stronger immune response against the variants.

The levels of neutralizing antibodies that a previous infection or vaccinations elicit are several times lower against the BA.4 and BA.5 subvariants compared with the original coronavirus, according to the new research published in the [New England Journal of Medicine](#) on Wednesday.

"We observed 3-fold reductions of neutralizing antibody titers induced by vaccination and infection against BA4 and BA5 compared with BA1 and BA2, which are already substantially lower than the original COVID-19 variants," Dr. Dan Barouch, an author of the paper and director of the Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center in Boston, wrote in an email to CNN.

"Our data suggest that these new Omicron subvariants will likely be able to lead to surges of infections in populations with high levels of vaccine immunity as well as natural BA1 and BA2 immunity," Barouch wrote. "However, it is likely that vaccine immunity will still provide substantial protection against severe disease with BA4 and BA5."

The newly published findings echo separate research by scientists at Columbia University.

They recently found that the BA.4 and BA.5 viruses were more likely to escape antibodies from the blood of fully vaccinated and boosted adults compared with other Omicron subvariants, raising the risk of vaccine-breakthrough Covid-19 infections.

The authors of that separate study say their results point to a higher risk for reinfection, even in people who have some prior immunity against the virus. The US Centers for Disease Control and Prevention estimates [94.7% of the US population](#) ages 16 and older have antibodies against the coronavirus that causes Covid-19 through vaccination, infection, or both.

BA.4 and BA.5 caused an estimated 35% of new Covid-19 infections in the United States last week, up from 29% the week before, according to [data shared by the US Centers for Disease Control and Prevention](#) on Tuesday.

BA.4 and BA.5 are the fastest spreading variants reported to date, and they are expected to dominate Covid-19 transmission in the United States, United Kingdom and the rest of Europe within the next few weeks, according to the European Centre for Disease Prevention and Control.

### 'COVID-19 still has the capacity to mutate further'

In the New England Journal of Medicine paper, among 27 research participants who had been vaccinated and boosted with the Pfizer/BioNTech coronavirus vaccine, the researchers found that two weeks after the booster dose, levels of neutralizing antibodies against Omicron subvariants were much lower than the response against the original coronavirus.

The neutralizing antibody levels were lower by a factor of 6.4 against BA.1; by a factor of 7 against BA.2; by a factor of 14.1 against BA.2.12.1 and by a factor of 21 against BA.4 or BA.5, the researchers described.

Among 27 participants who had previously been infected with the BA.1 or BA.2 subvariants a median of 29 days earlier, the researchers found similar results.

In those with previous infection -- most of whom also had been vaccinated -- the researchers described neutralizing antibody levels that were lower by a factor of 6.4 against BA.1; by a factor of 5.8 against BA.2; by a factor of 9.6 against BA.2.12.1 and by a factor of 18.7 against BA.4 or BA.5.

More research is needed to determine what exactly the neutralizing antibody levels mean for vaccine effectiveness and whether similar findings would emerge among a larger group of participants.

"Our data suggest that COVID-19 still has the capacity to mutate further, resulting in increased transmissibility and increased antibody escape," Barouch wrote in the email. "As pandemic restrictions are lifted, it is important that we remain vigilant and keep studying new variants and subvariants as they emerge."

A separate study, [published in the journal Nature](#) last week, found that Omicron may evolve mutations to evade the immunity elicited by having a previous BA.1 infection, which suggests that vaccine boosters based on BA.1 may not achieve broad-spectrum protection against new Omicron subvariants like BA.4 and BA.5.

As for what all this means in the real world, Dr. Wesley Long, an experimental pathologist at Houston Methodist Hospital, told CNN that people should be aware that they could get sick again, even if they've had Covid-19 before.

"I think I'm a little bit worried about people who've had it maybe recently having a false sense of security with BA.4 and BA.5 on the increase, because we have seen some cases of reinfection and I have seen some cases of reinfection with people who had a BA.2 variant in the last few months," he said.

Some vaccine makers have been developing variant-specific vaccines to improve the antibody responses against coronavirus variants and subvariants of concern.

"Reinfections are going to be pretty inevitable until we have vaccines or widespread mandates that are going to prevent cases rising again. But the good news is that we are in, I think, a much better spot



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than we were without the vaccines," said Pavitra Roychoudhury, an acting instructor at the University of Washington's Department of Laboratory Medicine and Pathology, who was not involved in the New England Journal of Medicine paper.

"There's so much of this virus out there that it seems inevitable," she said about Covid-19 infections. "Hopefully the protections that we have in place are going to lead to mostly mild infection."

### Efforts underway to update Covid-19 vaccines

Moderna's bivalent Covid-19 vaccine booster, named mRNA-1273.214, elicited a "potent" immune responses against the Omicron subvariants BA.4 and BA.5, [the company said Wednesday](#).

This bivalent booster vaccine candidate contains components of both Moderna's original Covid-19 vaccine and a vaccine that targets the Omicron variant. The company said it is working to complete regulatory submissions in the coming weeks requesting to update the composition of its booster vaccine to be mRNA-1273.214.

"In the face of SARS-CoV-2's continued evolution, we are very encouraged that mRNA-1273.214, our lead booster candidate for the fall, has shown high neutralizing titers against the BA.4 and BA.5 subvariants, which represent an emergent threat to global public health," Stéphane Bancel, chief executive officer of Moderna, said in Wednesday's announcement. SARS-CoV-2 is the coronavirus that causes Covid-19.

"We will submit these data to regulators urgently and are preparing to supply our next generation bivalent booster starting in August, ahead of a potential rise in SARS-CoV-2 infections due to Omicron subvariants in the early fall," Bancel said.

The US Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee is [meeting next week](#) to discuss the composition of Covid-19 vaccines that could be used as boosters this fall.

The data that Moderna released Wednesday, which has not been published in a peer-reviewed journal, showed that one month after a 50-microgram dose of the mRNA-1273.214 vaccine was administered in people who had been vaccinated and boosted, the vaccine elicited "potent" neutralizing antibody responses against BA.4 and BA.5, boosting levels 5.4-fold in all participants regardless of whether they had a prior Covid-19 infection and by 6.3-fold in the subset of those with no history of prior infection. These levels of neutralizing antibodies were about 3-fold lower than previously reported neutralizing levels against BA.1, Moderna said.

These findings add to the data that Moderna previously released earlier this month, showing that the 50-microgram dose of the bivalent booster generated a stronger antibody response against Omicron than the original Moderna vaccine.

Moderna's data suggest that "the bivalent booster might confer greater protection against the BA.4 and BA.5 omicron strains than readministering the original vaccine to increase protection across the population. Although the information is based on antibody levels, the companies comment that similar levels of antibody protected against clinical illness caused by other strains is the first suggestion of an emerging 'immune correlate' of protection, although it is hoped that this ongoing study is also assessing rates of clinical illness as well as antibody responses," Penny Ward, an independent pharmaceutical physician and visiting professor in pharmaceutical medicine at King's College London, said in a [statement released by the UK-based Science Media Centre](#) on Wednesday. She was not involved in Moderna's work.

"It has been reported previously that the bivalent vaccine is well tolerated with temporary 'reactogenic' effects similar to those following the univalent booster injection so we can anticipate that this new mixed vaccine should be well tolerated," Ward said in part. "As we head towards the autumn with omicron variants dominating the covid infection landscape, it certainly makes sense to consider use of this new bivalent vaccine, if available."

## WHO says monkeypox is not yet a health emergency

Source: <https://www.reuters.com/business/healthcare-pharmaceuticals/who-says-monkeypox-is-not-yet-health-emergency-2022-06-25/>

June 25 – Monkeypox is not yet a global health emergency, the World Health Organization (WHO) ruled on Saturday, although WHO Director-General Tedros Adhanom Ghebreyesus said he was deeply concerned about the outbreak.

"I am deeply concerned about the monkeypox outbreak, this is clearly an evolving health threat that my colleagues and I in the WHO Secretariat are following extremely closely," Tedros said in a statement.

WHO said in a separate statement that although there were some differing views within the committee, they ultimately agreed by consensus that **at this stage the outbreak is not a Public Health Emergency of International Concern (PHEIC)**.

The "global emergency" label currently only applies to the coronavirus pandemic and ongoing efforts to eradicate polio, and the U.N. agency has stepped back from applying it to the monkeypox outbreak after advice from a meeting of international experts.



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There have been more than 3,200 confirmed cases of monkeypox and one death reported in the last six weeks from 48 countries where it does not usually spread, according to WHO.

So far this year almost 1,500 cases and 70 deaths in central Africa, where the disease is more common, have also been reported, chiefly in the Democratic Republic of Congo.

Monkeypox, a viral illness causing flu-like symptoms and skin lesions, has been spreading largely in men who have sex with men outside the countries where it is endemic.

There are vaccines and treatments available for monkeypox, although they are in limited supply.

Some global health experts said WHO may have been hesitant to make a declaration because its January 2020 declaration that the new coronavirus represented a public health emergency was largely met with skepticism around the world. [read more](#)

But others said the outbreak met the criteria to be called an emergency.

Gregg Gonsalves, an associate professor of epidemiology at Yale University who advised the committee but who is not a member of WHO, told Reuters by email on Saturday that he thought the decision was "misguided".

"It met all the criteria but they decided to punt on this momentous decision," he said.

**EDITOR'S COMMENT:** How many confirmed cases and deaths justify the declaration of a PHEIC?

## Monkeypox Has Evolved at an 'Accelerated' And Unexpected Rate, Study Finds

Source: <https://www.sciencealert.com/monkeypox-has-evolved-at-an-accelerated-and-unexpected-rate-study-finds>

June 26 – The monkeypox virus has mutated at a far faster rate than would normally be expected and likely underwent a period of "accelerated evolution," a new study suggests.

The virus, which has infected more than [3,500 people in 48 countries](#) since its detection outside Africa in May, may be more infectious due to dozens of new mutations. In all, the virus carries 50 new mutations not seen in previous strains detected from 2018 to 2019, according to a new study published June 24 in the journal [Nature Medicine](#).

Scientists usually don't expect [viruses](#) like monkeypox to gain more than one or two mutations each year, the study authors noted. Monkeypox is a rare disease that virologists think may naturally circulate in monkeys and rodents. An orthopoxvirus, it comes from the same family and genus as the variola virus, which causes smallpox, and doesn't usually spread far beyond West and Central Africa, where it is endemic.

This year, however, the first widespread outbreak of the disease spread beyond Africa, surprising scientists and leading the [World Health Organization](#) (WHO) to begin considering whether to classify the outbreak as a [global health emergency](#).

Monkeypox virus strains can be sorted into two clades, or lineages, known as the West African and Congo Basin clades, [according to STAT](#). The [viruses](#) in each clade carry different fatality rates; the West African clade has a roughly 1 percent fatality rate, while the Congo Basin clade kills an estimated 10 percent of those it infects.

The ongoing outbreak appears to be driven by the West African clade, STAT reported.

As a large double-stranded [DNA](#) virus, monkeypox is much more able to correct replication errors than an [RNA](#) virus such as [HIV](#), meaning that the current monkeypox strain should have really only accumulated a handful of mutations since it first started circulating in 2018.

**But, after collecting DNA from 15 monkeypox viral samples and reconstructing their genetic information, the researchers found that the real mutation rate was six to 12 times higher than they expected.**

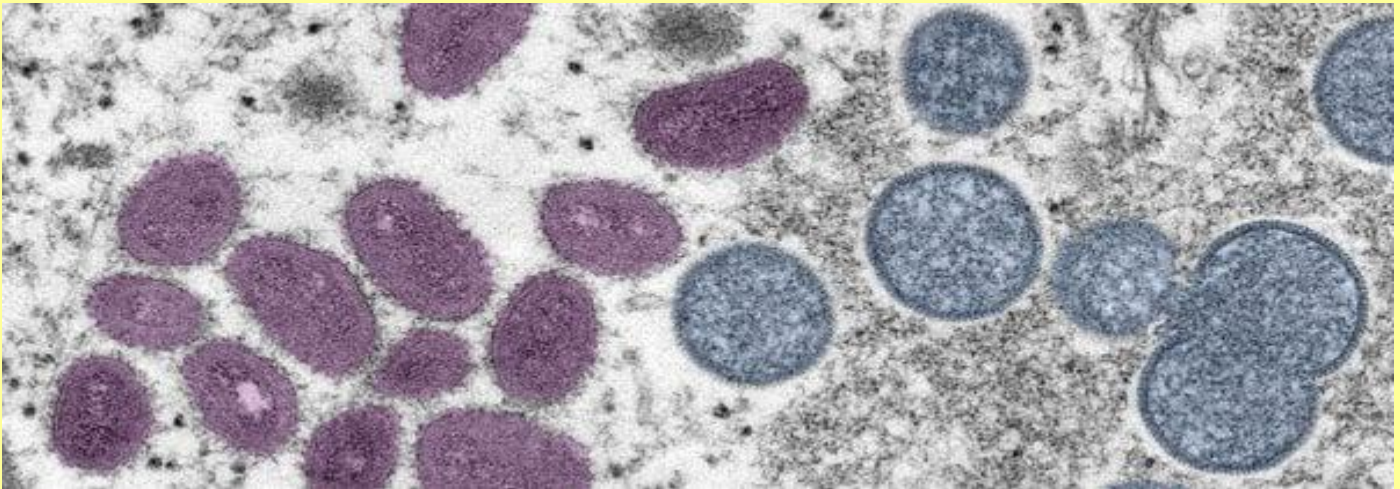
The massive jump in the monkey virus's rate of mutation "is far more than one would expect considering previous estimates of the substitution rate for Orthopoxviruses," the researchers [wrote](#) in the paper. "Our data reveals [sic] additional clues of ongoing viral evolution and potential human adaptation."

Historically, monkeypox is transmitted from person to person by close skin contact with open skin lesions, bodily fluids, contaminated material or respiratory droplets coughed into the air.

But the unprecedented speed of new infections could suggest that something may have changed about how the virus infects its hosts – and the new mutations could be a possible cause.

**Many of the mutations identified by the researchers also carry telltale clues that they may have emerged due to the virus's contact with the human [immune system](#), specifically a family of the virus-fighting enzymes called APOBEC3. These enzymes attack viruses by forcing them to make mistakes when they copy their genetic code, an act which usually causes the virus to break apart.**





Mature (left) and immature (right) monkeypox virus particles. (Cynthia S. Goldsmith & Russell Regnery/CDC)

However, sometimes, the virus survives the encounter and simply picks up a few mutations in its genetic code, [according to STAT](#). It may be that these sorts of battles happened repeatedly and caused the virus to pick up many mutations in a short span of time, the researchers theorized.

The virus's mutation rate ramped up in 2018, and there's a few explanations as to why it did so.

It's possible that the virus has been circulating in humans, at low levels, since then, picking up a slew of new mutations through its battles with enzymes.

Alternatively, the virus may have been spreading among animals in non-endemic countries without us noticing for quite some time, and then this year, it suddenly leapt back over to humans.

Or it's possible that, after a monkeypox outbreak hit Nigeria in 2017, the virus mostly spread in African countries – rapidly evolving as it moved between smaller communities before mounting a resurgence in non-endemic countries this year.

Despite its name, monkeypox is most commonly transmitted to humans from rodents, of which African rope squirrels, striped mice, giant-pouched rats, and brush-tailed porcupines are the species believed to be the main reservoirs of the disease, [according to the Centers for Disease and Prevention](#). The last time monkeypox was this widespread in the United States was in 2003, when 71 people became infected with the West African clade after a shipment of infected Gambian pouched rats, imported to Texas from Ghana, passed on the disease to local prairie dogs. A direct treatment for monkeypox has yet to be tested, but doctors are administering antiviral drugs and [antibodies](#) taken from people immunized with the smallpox vaccine to patients. Transmission is also reduced if people have the monkeypox or smallpox vaccine, enabling scientists to prevent onward infections by inoculating the close contacts of an initial case – a strategy known as "ring vaccination" that led to the eradication of smallpox in 1980.

#### Related content:

[Going Viral: 6 New Findings about Viruses](#)

[The deadliest viruses in history](#)

[Do other viruses have as many variants as SARS-CoV-2?](#)

## COVID-19 increases **risk** of Alzheimer's, Parkinson's & stroke, study finds

Source: <https://newatlas.com/health-wellbeing/covid19-increased-risk-alzheimers-parkinsons-stroke-study/>

June 26 – New research presented recently at the European Academy of Neurology Congress in Vienna has found an increased risk of several neurological disorders in patients following a bout of COVID-19. The study found the risk of Alzheimer's, Parkinson's and stroke all increased in COVID-positive subjects compared to those uninfected.

"More than two years after the onset of the COVID-19 pandemic, the precise nature and evolution of the effects of COVID-19 on neurological disorders remained uncharacterized," said lead author on the new study, Pardis Zarifkar, from the Copenhagen University Hospital. "Previous studies have established an association with neurological syndromes, but until now it is unknown whether COVID-19 also influences the incidence of specific neurological diseases and whether it differs from other



respiratory infections.” The researchers analyzed electronic health records from almost half of Denmark’s total population, spanning 2020 and 2021. Across the study period those who tested positive for COVID-19 were found to be 3.5 times more likely to be diagnosed with Alzheimer’s disease; 2.6 times more likely to be diagnosed with Parkinson’s; 4.8 times more likely to experience bleeding in the brain; and 2.7 times more likely to develop ischemic stroke. Zarifkar does note the increased risk of these neurological conditions following COVID-19 does mirror what has previously been reported following cases of influenza or bacterial pneumonia. However, due to the sheer prevalence of COVID-19 infections, it is likely baseline rates of these neurodegenerative diseases will rise around the world over the coming years. “We found support for an increased risk of being diagnosed with neurodegenerative and cerebrovascular disorders in COVID-19 positive compared to COVID-negative patients, which must be confirmed or refuted by large registry studies in the near future,” added Zarifkar. “Reassuringly, apart for ischemic stroke, most neurological disorders do not appear to be more frequent after COVID-19 than after influenza or community-acquired bacterial pneumonia.”

For decades researchers [have seen a correlation](#) between certain viral infections and neurodegenerative disease. Perhaps most well-known was the increase in rates of Parkinson’s disease following the Spanish Flu pandemic in the early 20th century. Since the beginning of the pandemic in 2020 [researchers have warned](#) of potential spikes in [conditions such as Parkinson’s](#), and this new data offers early signals these predictions may be coming true. Other more recent studies have [started digging into exactly what mechanisms](#) could be contributing to this increased risk of neurodegenerative disease following COVID-19. For years the most prominent hypothesis to explain the link between viral infections and neurodegeneration has been that inflammation triggered by an infection may either initiate, or accelerate, the development of neurological disease. A review article [published back in 2012](#) suggested repeated viral infections may increase this risk of neurological disease by activating a “cascade of events” corresponding with what is seen in the earliest stages of neurodegeneration. “We suggest that neurodegeneration can be triggered and then propagated by repeated inflammatory reactions (such as local production of cytokines) over time,” [the 2012 review indicated](#). “Indeed, there is evidence for both microglial and astrocytic (star-shaped glial cells in the brain) activation and reactions that track existing neuronal circuits in the CNS [central nervous system] and PNS [peripheral nervous system]. These inflammatory sequences combined with regional and cell type–dependent neuronal vulnerability could cause the specific structural and functional neurodegenerative patterns that define individual neurodegenerative diseases.”

A number of recent studies have found [brain inflammation to be a characteristic](#) of [some COVID-19 infections](#). But it [still isn’t clear how the virus](#) may be causing this neuroinflammation or whether this autoimmune response will [cause long-term problems](#). Commenting on the new COVID-19 findings, [Sara Imarsio from Alzheimer’s Research UK](#) said it is important to remember that dementia-causing neurological diseases are caused by a constellation of factors, from genetic susceptibility to age and environment. So COVID-19 is potentially only playing a small role in a person’s total risk of developing these diseases. Imarsio also pointed out a number of other factors could explain why rates of neurodegenerative disease are higher in those infected with COVID-19. And, it certainly is too soon to know the long-term impact of COVID-19 on certain brain diseases that can take decades to develop.

“Diseases like Alzheimer’s develop in the brain over many years and COVID-19 has only been present in Europe since early 2020,” [added Imarsio](#). “It may be that people in the very early stages of Alzheimer’s are more susceptible to catching diseases like COVID-19. While the announcement of these findings is potentially concerning, we will need to see results of this study in a peer-reviewed publication before we can draw any real conclusions from this research.”

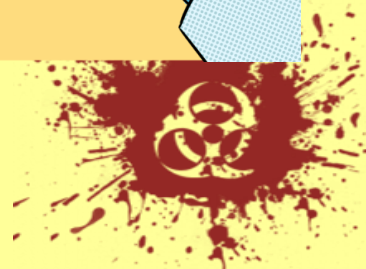
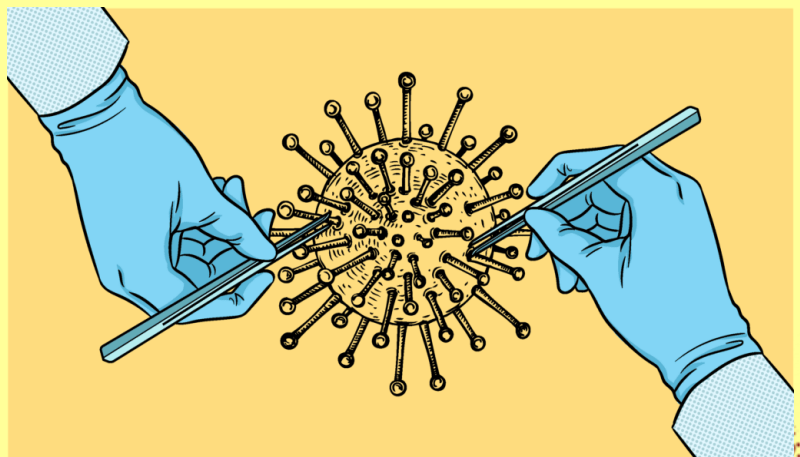
●► The new study was published in the journal [Frontiers in Neurology](#).

## Gain-of-function research can’t deliver pandemic predictions. Are there alternatives?

By Simon Wain-Hobson

Source: <https://thebulletin.org/2022/06/gain-of-function-research-cant-deliver-pandemic-predictions-are-there-alternatives/>

June 27 – Science is about fathoming how the natural world works and dreaming up machines, drugs, and vaccines that make life on the planet a little easier. Understanding and imagination allow scientists to make



predictions, which then need to be confirmed through experiment. Yet in dynamic situations that involve multiple variables, as in biology, this can be extraordinarily difficult. As Yogi Berra famously said: “It’s tough to make predictions, especially about the future.” Many virologists endorse so-called gain-of-function experiments which they claim enable predictions about future pandemics and pro-active preventive drug and vaccine development. This research gained notoriety in 2011 when two groups [adapted](#) avian influenza viruses so that they could transmit efficiently through the air between ferrets. If ever released, these novel pathogens could spark a human pandemic. The pandemic potential of these viruses was no accident, it was the desired end game.

Such experiments can pinpoint mutations that can affect pathogen characteristics, yet there is no guarantee that the next pandemic virus will follow any of the genetic roadmaps gain-of-function research has mapped out. A potentially [large number](#) of genetic mutations could affect how viruses behave, changing viral traits in a way that could prove hard to predict. While the high bar of scientific proof demanded by today’s science means that reliable results can only be obtained by the unethical inoculation of humans, it would be wise to consider these man-made viruses capable of phenomenal virulence. Gain-of-function research comes at a great cost: making the world a more dangerous place.

Alternative approaches exist. While methods such as causing a “loss” of function of a suspicious mutation are also imperfect from the standpoint of predicting the next pandemic, at least they don’t present the risk of starting one.

### A risky way to predict pandemics

To conceptualize the potential harm of gain-of-function research on enhancing pathogens, there is one particularly illustrative example: [a 2014 study](#) in which researchers once again morphed an avian influenza virus into one that was highly transmissible between ferrets, this time an ostrich H7N1 strain. It is generally accepted that if a flu virus transmits between ferrets it will do so between humans. So it is worth noting that this presumably human to human transmissible virus did not lose virulence. Around 70 percent of ferrets infected with the novel H7N1 virus by the airborne route had to be euthanized due to their failing condition.

Such a percentage would dwarf the mortality of the 1918 Spanish influenza pandemic, which is thought to have killed [around 2](#) percent of those infected; 70 percent mortality is on par with Ebola. Yet the information about this novel virus is out there on the web; the pdf can be downloaded free of charge.

Gain-of-function experiments, like legitimate work on highly virulent human pathogens, are not without inherent biosafety risks. Lab accidents do happen. Many researchers believe the influenza pandemic in 1977, caused by an H1N1 virus that had not been seen in decades, emerged from a lab somewhere in East Asia. (Others suspect a vaccine-trial mishap.) It then shifted to becoming seasonal influenza and circulated for the next 45 years. If ever there was a lab leak or willful release of a lab-enhanced virus reconstructed from published data, the consequences could be a pandemic.

Despite its risks, the vast majority of virologists have not criticized gain-of-function research for at least three reasons. First, some top-level science administrators have overtly backed it with tax monies. Second, nobody wants to talk about the dark side of science for fear of getting labeled as whistleblowers. As a poet [once wrote](#), “Laugh and the world laughs with you, weep and you weep alone.” Thirdly, many virologists feel that the line between gain-of-function research and basic virology is a fine one, and any regulation would hinder the field. It is true, legislation in science is a blunt tool unless the question at hand is crystal clear, such as with gene editing of human embryos.

### Alternative approaches to predicting risky viruses

While gain-of-function research can’t deliver pandemic predictions—there are just too many ways new mutations could impact viral characteristics—what experiments could be performed that would give virologists the information they seek? In present parlance, it comes down to identifying mutations in the genes of an animal virus that allow them to grow well in and transmit efficiently among mammals.

For avian influenza viruses or bat coronaviruses, scientists can engineer mutations in isolated genes for key proteins on the viral surface (hemagglutinin for influenza and spike for coronaviruses) and [generate](#) viral pseudotypes. This basically means grafting the surface proteins onto a virus with a harmless track record in humans. Through this method, researchers can identify a catalogue of mutations that can help the pseudotypes infect human cells. Another method involves using single-cycle virus derivatives—viruses harboring a genetic lesion that limits them to a [single round of growth](#). The single-cycle derivatives allow researchers to identify mutations in genes other than hemagglutinin or spike that might help the virus adapt to a new host cell.

Chicken influenza viruses from 13 distinct groups have jumped across to humans several thousand times, although none of these unique events has set up an epidemic. Current virology is capable of analyzing a large number of genes from these viruses without resorting to gain-of-function methods. Recurrent mutations would probably turn up, and researchers could generalize about their effect on viral transmissibility.





What about studying whole viruses? Indeed, virologists should isolate animal viruses from huge numbers of field samples, sequence their genomes, and test their growth on human cells. So long as they are not grown endlessly, which would lead to better adaptation to human cells, or in large quantities, these experiments would provide very useful data. Researchers who found a virus with unique genetic changes could mutate them so that they match a consensus sequence among animal viruses for the viral lineage. That way they would see if the ability to infect and grow well in human cells is lost. Such work is called loss-of-function virology and raises no problems. It has been going on for ages, and is akin to developing attenuated virus vaccines.

Through such experiments, virologists would learn about what was out in the real world and develop some idea as to viruses that could pose a danger to humans. The data could be overlapped with that from viral pseudotypes or single-cycle virus experiments, which would help to further understanding of natural viruses.

That said, there is a “but.”

Across biology, gene background is important. The same mutation can yield different results in different strains. This indicates that the impact of some of these mutations cannot be easily extrapolated. In turn, this suggests the pool of mutations that could make a virus a pandemic threat could be large, a problem for both gain-of-function research and alternative approaches. There are [a host](#) of other highly detailed [virological arguments](#) about why pandemic prediction is virtually impossible.

The gain-of-function thesis has been characterized by a belief that virology is akin to engineering; just define the (obviously small) numbers of permutations of mutations allowing a virus to cross over and transmit between humans, and “we’ll figure it out.” Biology and evolution were forgotten.

Viral evolution is not an exercise in engineering. From an evolutionary perspective, the idea that “you don’t win silver, you lose gold” is meaningless; there is more than one adaptation that can allow a species, or a virus to thrive. Even if gain-of-function research finds a mutation that confers some dangerous attribute to a virus, that doesn’t mean that researchers have found the next pandemic killer. Exploring another complex issue, Paul Simon came up with *50 Ways to Leave Your Lover*.

It looks like the world is coming out of the COVID pandemic. Billions of dollars will be spent over the next decade on pandemic preparedness, and while we’d love to know the next pandemic virus strain, don’t bank on learning it anytime soon.

Ron Fouchier, a virologist in the Netherlands and one of the gain-of-function influenza protagonists, said in a 2014 conference that it might take him 30 years to work out the genetics of avian influenza transmission to humans. As most of us cannot see beyond two, 30 years was a euphemism for “don’t know.” Gain-of-function research can never deliver on its promise, which is the prediction of the next pandemic flu strain to allow the preparation of preventive drugs and vaccines.

Virologists must stop crystal ball-gazing and get on with the relentless job of understanding and fighting viruses. In collaboration with industry, they’ve already done a fantastic job with SARS-CoV-2 in terms of rapid diagnostics, drugs, and vaccines.

It was never virologists’ brief to make the world a more dangerous place.

[Simon Wain-Hobson](#) is an emeritus professor at the Institute Pasteur, Paris, from which he retired in 2021. He and his colleagues were the first to sequence the genome of HIV, and Wain-Hobson has published more than 230 papers on virology and cancer. Wain-Hobson is the co-founder of two biotech companies working to develop countermeasures against cancer.

## Would Russia use bioweapons in Ukraine?

Source: <https://www.aspistrategist.org.au/would-russia-use-bioweapons-in-ukraine/>

June 28 – In March, not long after Russia’s invasion of Ukraine began, claims from the Kremlin of [a US-funded bioweapon program](#) in Ukraine flooded global media. Those reports were [amplified by China](#) and picked up by [conservative news outlets](#) and [conspiracy groups](#) in the US. Although the US and Ukraine denied Russia’s claims, and they were deemed false by the [United Nations](#) and the [World Health Organization](#), this piece of disinformation raises questions about the Kremlin’s strategy in the current war and beyond.

When the reports first appeared, the [US warned](#) that Russia could be using this thread of disinformation to [stage a false-flag incident](#) using bioweapons, or to justify the use of its own bioweapons against Ukraine. It [wouldn’t have been the first time](#) Russia used false-flag tactics, and the threat of Russia using bioweapons in either scenario isn’t an outlandish prospect.

The Soviet Union’s bioweapon program [began in the 1920s](#) and was the [largest and most sophisticated](#) undertaken by any nation in the world. Despite joining the [Biological Weapons Convention](#) in 1972, the Soviets, and then the Russian Federation, continued the program into the 1990s. In **2021, the US** concluded that Russia still [possessed an offensive bioweapon program](#), or, at the very least, [stockpiles of bioweapons and prevailing production capacities](#), in violation of the convention.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

Russia has a [history of deploying chemical weapons](#) that includes [using them in assassination plots](#) and [in the wars in Syria and Chechnya](#). Moscow neither follows international law prohibiting the use of chemical weapons nor adheres to international norms that proscribe their use as inhumane and abhorrent. It's not clear that Russia's mentality towards the use of bioweapons is any different. An alternative explanation for the bioweapon disinformation campaign is that it was undertaken in part to [justify](#) Russian President Vladimir Putin's decision to invade Ukraine. The invasion has been accompanied by a concerted disinformation campaign and [internal propaganda](#) tactics that [originated long before](#) 24 February.

A flood of disinformation narratives has emerged from Russia about the West over the [past few years](#). The main theme since the start of the invasion has continued to be that the former Soviet nation is an innocent victim strong-armed into aggression to stave off [NATO encroachment](#). The invasion has also been framed as a necessary '[denazification](#)' of Ukraine. The bioweapon disinformation narrative has also played into this strategy and could be just another narrative spread by Russia to justify its unprompted invasion of Ukraine.

If Russia's intent isn't to use the bioweapon disinformation to escalate the war via military means, the Kremlin's strategy could be to use this narrative to [erode trust in the US](#), or to endanger the [Cooperative Threat Reduction Program](#), a post-World War II initiative that converted the Soviet Union's offensive bioweapon laboratories into safe public-health research facilities.

Russia's use of bioweapon disinformation [isn't a new phenomenon](#); it's a [70-year old strategy](#) that has simply been ramped up since the invasion in Ukraine. The Soviet Union carried out [major international bioweapon disinformation campaigns](#) against the US in the past, including one declaring that the US used bioweapons against North Korea and China [during the Korean War](#). Another accused the US of synthesising the HIV virus to deliberately wipe out African populations.

Russia also [used the Covid-19 pandemic](#) to undermine social cohesion and sow mistrust in rival nations' governments by circulating conspiracy theories about the virus, particularly the Chinese narrative that it was a bioweapon engineered by the US. Covid-19 disinformation has [undoubtedly played into](#) the Kremlin's claims about a US-Ukrainian bioweapon program, [using scepticism](#) surrounding the virus to provide credibility to its false narrative. Russia has also [used the current monkeypox outbreak](#) to target the US, saying that the virus was spread from US-operated laboratories in Nigeria.

It's unclear at this stage whether Russia intends to use bioweapons in its war against Ukraine, but we shouldn't rule out the possibility. Russia has a history of chemical weapons use that indicates a lack of adherence to international norms and laws prohibiting the use of weapons of mass destruction in conflict. And it is believed to possess offensive bioweapon capabilities. If Russia's plan isn't to use bioweapons, we should still be concerned about the Kremlin's use of bioweapon disinformation as a tactic to sow mistrust in the US and NATO, for example, and to undermine initiatives that aid bioweapon non-proliferation.

[Jasmine Latimore](#) is a research intern at the Australian Strategic Policy Institute (ASPI).

**EDITOR'S COMMENT:** An article based on speculations blaming Russia for speculations, and fake news! Propaganda was always an ingredient of war and current conflict is not an exception. By the way, who still has chemical weapons and who declared the elimination of its chemical arsenal. Who keeps a collection of deadly pathogens? Russia is one of the two countries possessing samples of bio-weapons. As for production capabilities, any country with advanced biotechnologies can produce deadly pathogens and even weaponize them. I think that researchers should be objective when touching sensitive issues.

## Epigenetics Links Severe Inflammatory Syndrome in Children to COVID Infection

Multisystem Inflammatory Syndrome in Children (MIS-C) is related with the epigenetic deregulation of a set of immune-controlling genes. A new study in *eClinicalMedicine* shows that the epigenetic signature of MIS-C and Kawasaki Syndrome, both immune hyperactivation conditions, are similar. Knowing this epigenetic signature may help anticipate, diagnose, and treat children with MIS-C and potentially Kawasaki Syndrome in the future. **+ MORE**

## FDA to review Emergent's adjuvanted **anthrax vaccine** for adults

Source: <https://www.cidrap.umn.edu/news-perspective/2022/06/news-scan-jun-27-2022>

Emergent BioSolutions said in a news release late last week that the US Food and Drug Administration (FDA) has accepted for review an adjuvanted version of its anthrax vaccine for post-exposure prophylaxis (prevention) of anthrax. The product, called **AV7909—or Anthrax Vaccine Adsorbed, Adjuvanted**—is designed to prevent disease caused by exposure to *Bacillus anthracis*, the bacterium



## ICI C<sup>2</sup>BRNE DIARY – July 2022

that causes anthrax, in adults 18 to 65 years old. An adjuvant is a substance in a vaccine that boosts the body's immune response, and the US government stockpiles anthrax vaccine in the event of a bioterrorism event. The FDA will review Emergent's Biologics License Application (BLA) in the coming months.

Kelly Warfield, PhD, senior vice president of research and development at Emergent, said, "As we progress toward licensure of AV7909, which is designed to follow a two-dose immunization schedule and to elicit a faster immune response, we redouble our efforts to support the government's overall preparedness and response strategy for large-scale emergencies involving anthrax and other threats to public health."

The BLA submission, completed in April 2022, includes data from a phase 3 clinical study of AV7909 that evaluated vaccine lot consistency, immunogenicity, and safety following two shots in healthy adults. It also included data from a phase 2 study that evaluated non-interference between AV7909 and antibiotics approved for post-exposure prophylaxis of anthrax.

Advanced development and delivery of AV7909 is funded by the Biomedical Advanced Research and Development Authority (BARDA), within the Office of the Assistant Secretary for Preparedness and Response in the Department of Health and Human Services. Three years ago BARDA bought 50 million doses of AV7909 for the Strategic National Stockpile.

### Universal Influenza Vaccine, Developed at NIAID, Starts Clinical Trial

A Phase I clinical trial of a novel influenza vaccine has begun at the National Institutes of Health Clinical Center in Bethesda, MD. The placebo-controlled trial is inoculating healthy, adult, volunteers to test the safety of a candidate vaccine, BPL-1357, and its ability to prompt immune responses. BPL-1357 is a whole-virus vaccine made up of four strains of non-infectious, chemically inactivated, low-pathogenicity avian flu virus. [+ MORE](#)

### Novavax COVID vaccine **surprisingly** effective against all Omicron variants

Source: <https://newatlas.com/science/novavax-covid19-vaccine-omicron-booster/>

June 29 – Biotech company Novavax has revealed its COVID-19 vaccine can generate effective immune responses against all circulating Omicron variants. The unexpected data was delivered to an advisory panel convened by the US Food and Drug Administration (FDA) to recommend booster vaccine plans for later this year.

The newly revealed data came as a surprise in a meeting ostensibly focused on presentations from Pfizer and Moderna surrounding their mRNA COVID-19 vaccine studies targeting new Omicron-specific formulations. Peter Marks, director of the FDA's vaccine department, [said although Novavax's vaccine](#) has yet to be authorized for use in the United States it was important to have the company present this data to help the panel understand how it could fit into booster plans for later this year.

Novavax's COVID-19 vaccine has faced a rocky road to authorization in the United States. It was initially part of Operation Warp Speed in early 2020, the first wave of US government funding pushing development for a COVID-19 vaccine. Development challenges and manufacturing hurdles slowed things down in 2021 but [by the end of the year](#) the novel vaccine began to be distributed around the world.

In the US authorization for Novavax's vaccine has been slow. The company [reportedly submitted data](#) to the FDA back in January but manufacturing issues continued to hold back authorization. In early June an FDA advisory panel recommended emergency use authorization for the vaccine and again questions were raised over manufacturing standards, leading to a pause in final approval.



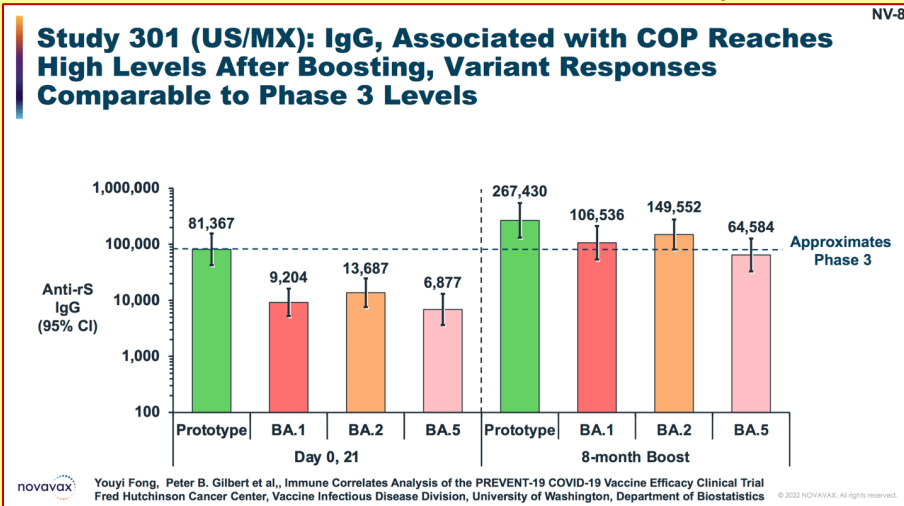
"We take manufacturing very seriously," [Marks recently said](#). "We don't benchmark ourselves against other countries when it comes to manufacturing, we consider that we have a very high standard, and it's why we're often considered a gold standard for our manufacturing, and particularly in the area of vaccines."

The new data revealed by Novavax indicates its original vaccine formulation seems to generate broad immune responses, resulting in antibodies that display effective responses to all new Omicron variants, **including the most immune-evasive BA.5 subtype**. In particular, the data indicates a booster shot of Novavax's vaccine generates neutralizing antibody responses to Omicron variants

comparable to what was seen against the original strain of SARS-CoV-2 at the peak of its initial Phase 3 trial.

The data supplied by Novavax shows a booster shot, delivered eight months beyond the primary series, generates a strong immune response against all Omicron subtypes (Novavax)

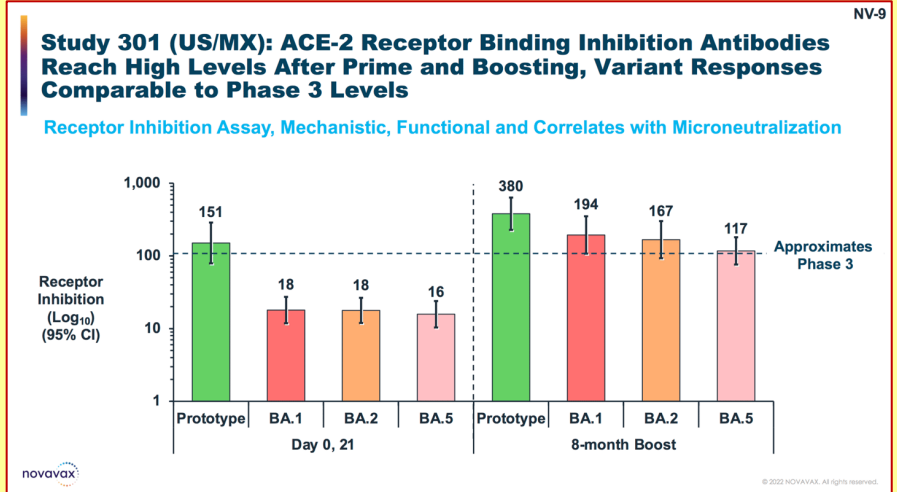
Novavax believes its vaccine is likely more effective against emerging SARS-CoV-2 variants compared to mRNA vaccines because it uses a different kind of vaccine technology. This vaccine is known as a



**protein subunit vaccine** and its production involves initially cultivating the infamous coronavirus spike proteins in large manufacturing facilities. The proteins are the assembled into nanoparticles designed to mimic the structure of the virus. These nanoparticles are paired with adjuvants, molecules that help boost the body's immune response.

This data has yet to be peer-reviewed and published in a journal (Novavax)

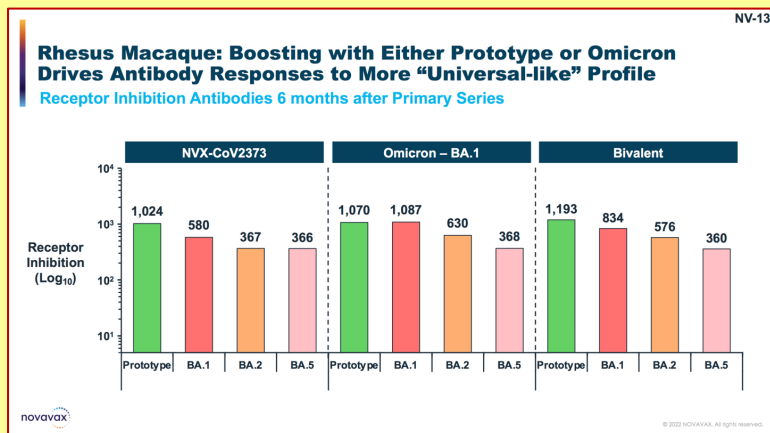
Novavax claims the unique structural features of its vaccine lead to the generation of broad



cross-neutralizing antibodies that can better detect emerging SARS-CoV-2 variants. Backing up this hypothesis, Novavax presented data from its newest vaccine formulation designed to more directly target the Omicron BA.1 variant.

Animal studies testing a newer formulation more specifically targeting Omicron BA.1 revealed little difference in antibody responses compared to the original formulation (Novavax)

The data suggests little difference in antibody responses to Omicron



variants when comparing the original vaccine to a newer formulation. Novavax argues this means booster programs using the original formulation could likely be an effective strategy for later this year.



However, ongoing trials with the Omicron-specific formulation should deliver results soon and Novavax says it is able to supply this iteration of the vaccine if necessary.

"We are confident that our prototype COVID-19 vaccine generates broad levels of antibodies as a primary series, and that boosting with this prototype vaccine increases the magnitude of the breadth of response," said Gregory Glenn, Novavax's head of research and development. "While we believe in the strength of our prototype vaccine data, we are prepared to supply an Omicron-based vaccine this fall in accordance with health authority recommendations."

**To date, Novavax's COVID-19 vaccine has been authorized and distributed in more than 40 countries around the world, including Europe, Canada and Australia.** The company indicates its supply lines are strong enough to begin supplying the US with boosters of its original formulation immediately and Omicron-targeted doses by the end of the year.

**EDITOR'S COMMENT:** I am a bit cautious about the word "surprisingly" in the title of this article. It means that the company was not exactly aware of what the vaccine was about to block and it just happened and most probably now they are trying to establish the mechanism (-s) of protection.

## Synthetic Bioweapons after COVID: Coming Armageddon or Detrimental Hype?

By Mr. Stijn Kuipers

*NCT Magazine 10/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/synthetic-bioweapons-after-covid-coming-armageddon-or-detrimental-hype>

COVID-19 has reinvigorated concerns, if not panic, about the dangers of synthetic bioweapons. Yes, COVID-19 may not have been created in a lab, but it was able to kill approximately 6,5 million people and paralyze societies for up to 2 years (and is still going strong in some places). Just imagine what a pathogen engineered for such a task could do. Academic journals and famous media outlets such as the Economist have not scrimped on spelling out the disaster scenarios.

This article is not aimed at dispelling all concerns about synthetic bioweapons; they are indeed dangerous. It does try to dispel the hype. The narrative about the "synthetic revolution" in bioengineering of the last 2 decades has tended to diminish technical and socio-political factors which limit the potential of synthetic bioweapons to transform public health safety or "the future of warfare" for the worse. In contrast, the overtly alarmist tone in the debate carries potentially detrimental implications for policy making and defence planning if it leads to over-regulation of labs, academic research and/or misguided resource allocation.

All concerns revolve around 1 simple assertion: the rapid developments in synthetic biology over the last 2 decades have made it much easier for everyone to alter pathogens, bringing bioweapons within reach of terrorist groups and (rogue) nations as a "poor man's atomic bomb". There are however 2 serious reasons to doubt this scenario.

Firstly, in contrast to the "now anyone can hack DNA"-newspaper articles, synthetic biology is (still) incredibly difficult, even for experts. Top-notch labs struggle with many of the stages required to achieve desired functions in live organisms, let alone attempts to build biosynthetic entities from scratch. The most heard sentence in a microbiology lab is "my cells have died". And when things go right, there are still many challenges to be overcome. For example, attempts to improve the characteristics of agents on their own often lead to the diminishment of other desirable characteristics, because a single gene can affect multiple (and on the surface unrelated) traits. This is known as pleiotropy and presents both a measure of uncertainty and the necessity of trade-off in pathogen manipulation.

Synbio has not "solved" such challenges, as it also heavily relies on the ability to predict the biological function of genes from nucleic acid or protein structures. It has therefore remained very difficult to predict how specific genes, especially foreign strands inserted into a genome, will interact with other genes and the organism as a whole by primarily looking at the structure of the genes in question. When entities have less resemblance to natural organisms, such as when they would be created "from scratch", the effects can be even harder to predict. These inherent challenges even leave out recent complications within synbio, such as certain techniques deleting too large strands and unintentionally shuffling genes.

●► **Read the full text at the source's URL.**

**Stijn Kuipers** has studied the security implications of synthetic bioweapons at the Department of War Studies, King's College London. He holds degrees from Radboud University Nijmegen, Leiden University, King's College and the University of Cambridge, and currently works within the Dutch



Ministry of Economics and Climate Policy on industrial strategy, business & human rights and “Vision 2050”, a project to visualise goals and ideals for the Dutch economy and society in 2050.

## Be better prepared for the unknown: work together and learn from COVID

By Dr. David C. Hassell, and Dr. Christopher R. Houchens

*NCT Magazine 08/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/be-better-prepared-for-the-unknown-work-together-and-learn-from-covid>

For those of us focused on combatting threats from infectious diseases, the last five years have brought a real-world test of preparedness in the form of the worldwide COVID-19 pandemic, creative thinking about biodefense, and useful new tools from synthetic biology. Although many in government have been focused on COVID-19 since March 2020, we should not begin anew with our thinking as we consider preparedness going forward. Of course, we must consider lessons from the pandemic, but we also have pre-existing plans, reports, and science that will still serve us well moving forward.

Two documents were published in the US in 2018 that are still very relevant today. The National Academy of Sciences, Engineering and Medicine (NASEM) issued the report *Biodefense in the Age of Synthetic Biology*, and the U.S. Government (USG) published the *National Biodefense Strategy (NBS)*. The NASEM Report emphasized the need to be better prepared for unknown biological pathogens, and that efforts need to go beyond lists of threat pathogens; it also promoted the idea that synthetic biology and other advanced biotechnologies are themselves effective defenses against nefarious use of synthetic biology. The NBS emphasized the need to assess, prevent, protect against, respond to, and recover from biological threats— whether naturally-occurring, accidental or intentional— and to consolidate efforts across institutional boundaries.

More recently, the SARS-CoV-2 virus has demonstrated the devastating impact a single pathogen can have on individuals, broader society, and the world economy. Government departments across the U.S. (including federal, state, local tribal and territorial) have worked together with the private sector to confront COVID-19 and to rapidly develop, distribute and administer effective vaccines, therapeutic drugs, and diagnostics. The science behind these medical countermeasures (MCMs) has employed many aspects of advanced biotechnology, thus demonstrating one key aspect of the NASEM Report. Likewise, the response effort has involved U.S. federal departments working together with private sector partners, which was a tenet of the NBS.

Early in the COVID-19 pandemic, the USG established Operation Warp Speed (OWS) to rapidly develop effective MCMs in historically unprecedented timeframes. OWS leveraged earlier investments in biotechnology research and brought together the strengths of respective departments, including the scientific and medical expertise of the U.S. Department of Health and Human Services, and the logistics and acquisition capabilities of the U.S. Department of Defense. The success of OWS, which delivered FDA-authorized vaccines and therapeutics in less than one year, relied heavily on three major elements:

- First was the use of proven platform technologies in which the USG had previously invested for the discovery, development, and manufacturing of mRNA-based vaccines and monoclonal antibody-based therapeutics. The ability to rapidly pivot existing, proven technologies to new threats will surely become the paradigm to expedite availability of MCMs during future responses.
- The second key aspect was the decision to invest in a portfolio of MCMs being developed using different platform technologies to reduce the risk that any specific technology would fail to deliver a safe and effective product. For vaccines, the result was a portfolio of two candidates each of mRNA, viral vector and adjuvanted protein vaccines, each of which has proven to be safe and effective.
- The last critical element that accelerated the delivery of effective MCMs was leveraging pre-existing relationships with industry partners. Long before SARS-CoV-2 emerged, the USG developed strong, collegial, and collaborative working relationships with various industry partners so that when the pandemic arrived, we already had willing and able partners eager to quickly work together to address the threat.

●► **Read the full text at the source’s URL.**

**Dr. David Christian “Chris” Hassell** serves as the Acting Principal Deputy Assistant Secretary and Senior Science Advisor to the Assistant Secretary for Preparedness and Response in the U.S. Department of Health and Human Services. He most recently served as the Deputy Assistant Secretary of Defense for Chemical and Biological Defense, where he led research, development, testing, and acquisition of technical solutions to counter chemical and biological threats. Dr. Hassell is an analytical chemist and a Fellow of the



Society for Applied Spectroscopy. He is a recipient of the Defense Medal for Exceptional Civilian Service (US) and the Médaille de la Défense Nationale (France).

**Dr. Christopher Houchens**, Ph.D., is the Director of the Division of Chemical, Biological, Radiological and Nuclear Countermeasures within the Biomedical Advanced Research and Development Authority (BARDA), a component of the Office of the Assistant Secretary for Preparedness and Response in the U.S. Department of Health and Human Services.

## Playing with Pandora: Biotechnology, Synthetic Biology and Global Security

By Mr. Frank Rando and Ms. Dee Ruelas

*NCT Magazine 15/20*

Source: <https://nct-magazine.com/nct-magazine-june-2022/playing-with-pandora-biotechnology-synthetic-biology-and-global-security>

In 1944, the Journal of Experimental Medicine, published the groundbreaking discovery that DNA is the molecule holding genetic information.

Later, after additional intense research had been conducted by scientists such as Oswald T. Avery, Colin MacLeod and Maclyn McCarthy, proving that DNA instead of protein is the “hereditary molecule”, scientist Friedrich Miescher pursued the study of proteins, histochemistry, the chemical composition of cells and the cells’ nuclei. Hence, Miescher was able to discover a substance dubbed “nuclein” from the nucleus of human white blood cells.

What Miescher had actually isolated were nucleic acids, among which deoxyribonucleic acid (DNA) was derived.

●► **Read the full text at the source’s URL.**

**Mr. Frank Rando** currently serves as an allied health programs educator / lead instructor and healthcare emergency preparedness/medical readiness /public health preparedness and tactical, operational - disaster medicine and homeland security Subject Matter Expert, educator, instructor and curriculum designer. He has served in instructional, guest speaker and consultative roles for DHS-FEMA, various components of the National Domestic Preparedness Consortium, DoD, industry, academia, health, safety and regulatory entities, emergency services organizations and healthcare.

**Ms. Dee Ruelas** possesses over 35 years of dedicated professional experience in various roles in public safety/ emergency services, teaching and instruction, healthcare, environmental health and safety, emergency preparedness, community resiliency and Christian ministry. Dee was also a decorated public safety-emergency medical communications specialist for the City of Tucson Fire Department and worked for the Tucson Municipal Court, where one of her roles was serving as the Fire Prevention and General Safety Officer for the municipal court’s system. Currently, Dee has been serving as a clinical specialist in COVID-19 testing and vaccination services and served as a medical and healthcare support specialist for US Customs and Border Protection.

## A Viral Reprise: When COVID-19 Strikes Again and Again

Source: <https://www.medscape.com/viewarticle/976393>

June 29 – For New York musician Erica Mancini, COVID-19 made repeat performances.

March 2020. Last December. And again this May.

"I'm bummed to know that I might forever just get infected," said the 31-year-old singer, who is vaccinated and boosted. "I don't want to be getting sick every month or every 2 months."

But medical experts warn that repeat infections are getting more likely as the pandemic drags on and the virus evolves — and some people are bound to get hit more than twice. Emerging research suggests that could put them at higher risk for health problems.

There's no comprehensive data on people getting COVID-19 more than twice, although some states collect information on reinfections in general. New York, for example, reports around 277,000 reinfections out of 5.8 million total infections during the pandemic. Experts say actual numbers are much higher because so many home COVID-19 tests go unreported.

Several public figures have recently been reinfected. US Health & Human Services Secretary Xavier Becerra and Canadian Prime Minister Justin Trudeau said they got COVID-19 for the second time, and US Sen. Roger Wicker of Mississippi said he tested positive a third time. All reported being fully vaccinated, and Trudeau and Becerra said they'd gotten booster shots.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

"Until recently, it was almost unheard of, but now it's becoming more commonplace" to have COVID-19 two, three, or even four times, said Dr Eric Topol, head of Scripps Research Translational Institute. "If we don't come up with better defenses, we'll see much more of this."

Why? Immunity from past infections and vaccination wanes over time, experts say, leaving people vulnerable.

Also, the virus has evolved to be more contagious. The risk of reinfection has been about seven times higher with Omicron variants compared with when Delta was most common, research out of the United Kingdom shows. Scientists believe the Omicron mutants now causing the vast majority of US cases are particularly adept at getting around immunity from vaccination or past infection, especially infection during the original Omicron wave. US health officials are mulling whether to modify boosters to better match recent changes in the coronavirus.

The first time Mancini got COVID-19, she and her fiancé spiked fevers and were sick for 2 weeks. She couldn't get tested at the time but had an antibody test a couple months later that showed she had been infected.

"It was really scary because it was so new and we just knew that people were dying from it," said Mancini. "We were really sick. I hadn't been sick like that in a long time."

She got vaccinated with Pfizer in the spring of 2021 and thought she was protected from another infection, especially since she was sick before. But though such "hybrid immunity" can provide strong protection, it doesn't guarantee someone won't get COVID-19 again.

Mancini's second bout, which happened during the huge Omicron wave, started with a sore throat. She tested negative at first, but still felt sick driving to a gig 4 hours away. So she ducked into a Walgreens and did a rapid test in her car. It was positive, she said, "so I just turned the car around and drove back to Manhattan."

This bout proved milder, with "the worst sore throat of my life," a stuffy nose, sneezing, and coughing.

The most recent illness was milder still, causing sinus pressure, brain fog, a woozy feeling, and fatigue. That one, positive on a home test and confirmed with a PCR test, hit despite her Moderna booster shot.

Mancini doesn't have any known health conditions that could put her at risk for COVID-19. She takes precautions like masking in the grocery store and on the subway. But she usually doesn't wear a mask on stage.

"I'm a singer, and I'm in these crowded bars and I'm in these little clubs, some of which don't have a lot of ventilation, and I'm just around a lot of people," said Mancini, who also plays accordion and percussion. "That's the price that I've paid for doing a lot throughout these past few years. It's how I make my living."

Scientists don't know exactly why some people get reinfected and others don't, but they believe several things may be at play: health and biology, exposure to particular variants, how much virus is spreading in a community, vaccination status, and behavior. British researchers found people were more likely to be reinfected if they were unvaccinated, younger, or had a mild infection the first time. Scientists also aren't sure how soon someone can get infected after a previous bout. And there's no guarantee each infection will be milder than the last. "I've seen it go both ways," said Dr Wesley Long, a pathologist at Houston Methodist. In general, though, breakthrough infections that happen after vaccination tend to be milder, he said. Doctors said getting vaccinated and boosted is the best protection against severe COVID-19 and death, and there's some evidence it also lessens the odds of reinfection.

At this point, there haven't been enough documented cases of multiple reinfections "to really know what the long-term consequences are," said Dr Peter Hotez, dean of Baylor University's tropical medicine school.

But a large, new study using data from the US Department of Veterans Affairs, which hasn't yet been reviewed by scientific peers, provides some insight, finding that reinfection increases the risk for serious outcomes and health problems such as lung issues, heart disorders and diabetes compared with a first infection. The risks were most pronounced when someone was ill with COVID-19 but persisted past the acute illness as well.

After Mancini's last bout, she dealt with dizziness, headaches, [insomnia](#), and sinus issues, though she wondered if that was more due to her busy schedule. In a recent week, she had 16 shows and rehearsals — and has no room for another COVID-19 reprise.

"It was not fun," she said. "I don't want to have it again."

## Iranian Weapons of Mass Destruction: Biological Weapons Programs

By Adam C Seitz

Source: [https://d1wqtxts1xzle7.cloudfront.net/32458631/081028\\_iranbw\\_chapterrev-libre.pdf](https://d1wqtxts1xzle7.cloudfront.net/32458631/081028_iranbw_chapterrev-libre.pdf)

2008 – Iranian Weapons of Mass Destruction Part III: Biological Weapons Programs by Anthony H. Cordesman and Adam C. Seitz October 28, 2008 Iran's nuclear ambitions and missile programs, and their interactions with its growing capabilities for asymmetric warfare, are becoming steadily more





critical security issues for the US, Iran's neighbors, and the international community. The foreign and domestic policy implications for the US will be a major issue that the next administration must address during its first months in office. Iran's actions, and the Iraq War, have already made major changes in the military balance in the Gulf and the Middle East. Iran may still be several years to half a decade away from becoming a meaningful nuclear power, but even a potential Iranian nuclear weapon has already led Iran's neighbors, the US, and Israel to focus on the nuclear threat it can pose and its long-range missile programs. The Burke Chair has prepared a new set of briefs, prepared by Anthony H. Cordesman with the assistance of Adam C. Seitz, that summarize Iran's actions, current and potential capabilities, and the possible outcome of a nuclear exchange. This briefing draws on official statements, US intelligence judgments, work by the IAEA, and material provided by a number of other research centers, including the Nuclear Threat Initiative, ISIS, the Federation of American Scientists, Global Security, and the Brookings Institution. The Burke Chair is releasing these documents in a series of working drafts in an effort to obtain outside views, comments, criticisms, and additions. We hope to use such comments to provide a more comprehensive and more accurate picture of Iran's controversial and destabilizing WMD programs despite the uncertainty surrounding these foreign policy nightmares. The third working draft in the series is also now available on the CSIS web site at: [http://www.csis.org/files/media/csis/pubs/081028\\_iranbw\\_chapterrev.pdf](http://www.csis.org/files/media/csis/pubs/081028_iranbw_chapterrev.pdf) It covers the capabilities and uncertainties of Iran's biological weapons program, as well as the problems posed by the ease of access to dual-use technology.

**Adam C. Seitz** is a Foreign Affairs Specialist at the Office of the Under Secretary of Defense of Secretary of Defense (OUSD) for Policy. Prior to joining the OUSD for Policy in 2020, Mr. Seitz served as Research Assistant Professor for Middle East Studies at the Marine Corps University (MCU) Brute Krulak Center, providing the MCU with a resident scholar with expertise in Middle East security and conflict studies, representing the Marine Corps at various academic and professional forums, and providing subject matter expert support and advice to Professional Military Education (PME) programs. Mr. Seitz continues to serve as adjunct faculty for the MCU Command and Staff College Distance Education Program (CSCDEP), teaching the online enhanced scholarly elective "The Yemen Quagmire: Great Power Competition, Internal Wars, and the Gray Zone" for the MCU College and Distance Education and Training (CDET) Continuing Education Program (CEP). From 2001-2005, Mr. Seitz served in the U.S. Army as an Intelligence Analyst and is a veteran of Operation Iraqi Freedom. Mr. Seitz earned his B.A. in International Affairs from the University of Colorado at Boulder and his M.A. in International Relations and Conflict Resolution from American Military University.

## What Are the Benefits of a **Fourth** Vaccination Against COVID?

Source: <https://www.medscape.com/viewarticle/976436>



June 30 – The fourth vaccination against COVID-19 is the subject of intense discussion. Immunity against new Omicron variants (currently BA.4 and BA.5) is getting weaker and weaker. Is another vaccination with the available vaccines worth it?

For Leif Erik Sander, MD, director of infectious diseases and pneumology at Charité University Medicine in Berlin, Germany, the latest data send a clear message. "The COVID-19 vaccination is still effective against Omicron. After three doses of the vaccine, it continues to prevent severe diseases, respiratory failures, and death," he reported at the 62nd Congress of the German Pneumology and Respiratory Medicine Society in Leipzig.

The most recent data from the United Kingdom show that the vaccine's effectiveness against Omicron decreases after just a few months, which speaks in favor of a fourth vaccination. "Omicron is a development that we did not anticipate occurring so early on," said Sander.

In terms of phylogenetics, Omicron is far removed from the previous variants of concern. More than 30 mutations to the spike protein (the antigen that is vaccinated against) foster the loss of immunity.

### Boosters Broaden Immunity

"The booster makes all the difference here," emphasized Sander. Experiments at the Charité Berlin show that after double vaccination, the vaccination sera from healthy young people no longer neutralizes Omicron. But a third vaccination confers a very good neutralizing titer, even against Omicron.

"The third vaccination broadens the humoral immune response against the spike protein so that conserved epitopes that are unchanged, even in Omicron, are addressed, with the result that you have neutralization capacity again," the infectious diseases specialist explained.



### Continued Protection

However, data from the **United Kingdom on vaccine effectiveness show where the limit lies. Initially, after three doses, vaccine effectiveness against symptomatic disease after Omicron infection is very good.** This effectiveness decreases significantly over the course of the next few months. "Lots of people experience an Omicron infection despite the booster," said Sander.

Nonetheless, the high incidence of Omicron infections in the recent past has not overwhelmed the healthcare system. "This is because the vaccine's effectiveness against severe diseases that require hospitalization and against respiratory failure is still good in the at-risk population **over the age of 65, once they have had their three vaccinations," said Sander. The data also show that there is good protection of over 90%, even against mortality.**

### Waning Observed

It could be said that currently, vaccination even continues to work against Omicron, says Sander. It prevents severe disease, respiratory failure, and death. Nonetheless, after just 3 months, a slight waning of immune protection can be observed in all three endpoints.

Therefore, the question arises as to whether a fourth vaccination is worthwhile. In Israel, "Delta was successfully eradicated with the third vaccination," and now they are trying this again for Omicron with a fourth vaccination, reported Sander.

### Fourth Vaccination Protective

The first investigations show that protection against severe disease can be increased once more. "For the over-60s, protection is almost quadrupled through the fourth vaccination," says Sander. "However, this is still plagued with a lot of uncertainty; it is still not known how stable it is."

There is hope on the basis of results of an as yet non-peer-reviewed study from Sweden, which is currently available only as a preprint. That study shows that a fourth vaccination in a high-risk population of care-home residents and people older than 80 years can halve overall mortality. "If this can be confirmed and replicated, it must be recommended quite extensively for this high-risk group," said Sander. The Standing Committee on Vaccination in Germany is currently recommending that high-risk groups be vaccinated against COVID-19 for the fourth time. To date, though, this has only been implemented halfheartedly.

### Propensity for Mutation

Omicron keeps developing. Following BA.1 and the more infectious subvariant BA.2, BA.4 and BA.5 are spreading in Germany. "To date, there is no evidence that vaccine protection against severe diseases has changed as a result of BA.2 emerging," said Sander. However, the loss of immunity against BA.4 and BA.5 is more strongly pronounced. "If you were infected with BA.1, you are not immune to BA.5," says Sander. Lessened immunity from BA.4 and BA.5 is even more pronounced. "Anyone who was infected with BA.1 is not immune to BA.5," says Sander. The two clades not only have spike protein mutations shared by BA.2 but also additional spike protein mutations. According to the expert, it could well be that these strains will prevail because they are best able to avoid the immunity of the population.

### Adapted Vaccines Feasible?

"Vaccines adapted to BA.1 were developed very early on and were also part of clinical research," said Sander. The initial data indicate that additional antibody responses are being mobilized that may neutralize the new variants.

It was deduced from trials on monkeys that the available vaccines were so good that only small improvements were to be expected, said Sander.

### Moderna's Adapted Vaccine

The US pharmaceutical company Moderna recently submitted the first results regarding its bivalent Omicron vaccine mRNA-1273.214, which is adapted to Omicron BA.1. Data from BioNTech are expected soon.

Moderna tested a booster that contains both the spike mRNA from the original vaccine and a new mRNA adapted to the Omicron variant BA.1. The experimental vaccine mRNA-1273.214 exhibited an eightfold increase in geometric mean neutralization titer against Omicron in study participants who were seronegative at the start, compared with the already-approved vaccine.

In its latest notice, Moderna did not publish any data on how effective the updated vaccine is against the virus variants BA.4 or BA.5. Data on clinical endpoints, such as hospitalization or mortality, are also not available.



### Conservative Epitopes

Should it be assumed that the development of vaccines will always lag the emergence of new subvariants? In this respect, Sander appears optimistic. "The immunological mechanism is clear, that various B cells and antibodies will be formed that are directed against conservative epitopes that have various variants. This is good news, since we do not want to protect against BA.1 now, just for BA.8 to emerge when the vaccine goes to market. We want to protect ourselves as broadly as possible, and it seems like it may be possible to do so with this vaccine."

### Double Vaccination?

Sander anticipates that a fourth vaccination against COVID-19 will occur with the next wave of the coronavirus in September or October. He remarked that coupling it with the [influenza](#) vaccination should be considered.

The coronavirus pandemic has led to shifts in other seasonal waves of pathogens. In the summer, pediatric departments were unexpectedly inundated with children suffering from RSV infections. And while the flu season over the past 2 years has been almost absent, the influenza wave may occur significantly earlier than usual this year.

"In Australia, the influenza wave arrived much earlier this year than usual, which may of course also be fruitful for us," said Sander. "Perhaps we will also get influenza as early as in September or October. I would then plead for vaccine centers to be allowed to vaccinate against both influenza and COVID-19 at the same time. Maybe then we will also have a reasonable influenza vaccination rate," he added.

## New Imaging Technique Starkly Reveals The Source of Long COVID in The Lungs

Source: <https://www.sciencealert.com/new-imaging-techniques-starkly-reveals-what-long-covid-lungs-can-look-like>

June 30 – While COVID vaccines have [saved millions of lives globally](#) by reducing the overall severity of the disease, [nearly one in ten of those recovered](#) are still ending up with ongoing symptoms after the initial illness has passed.

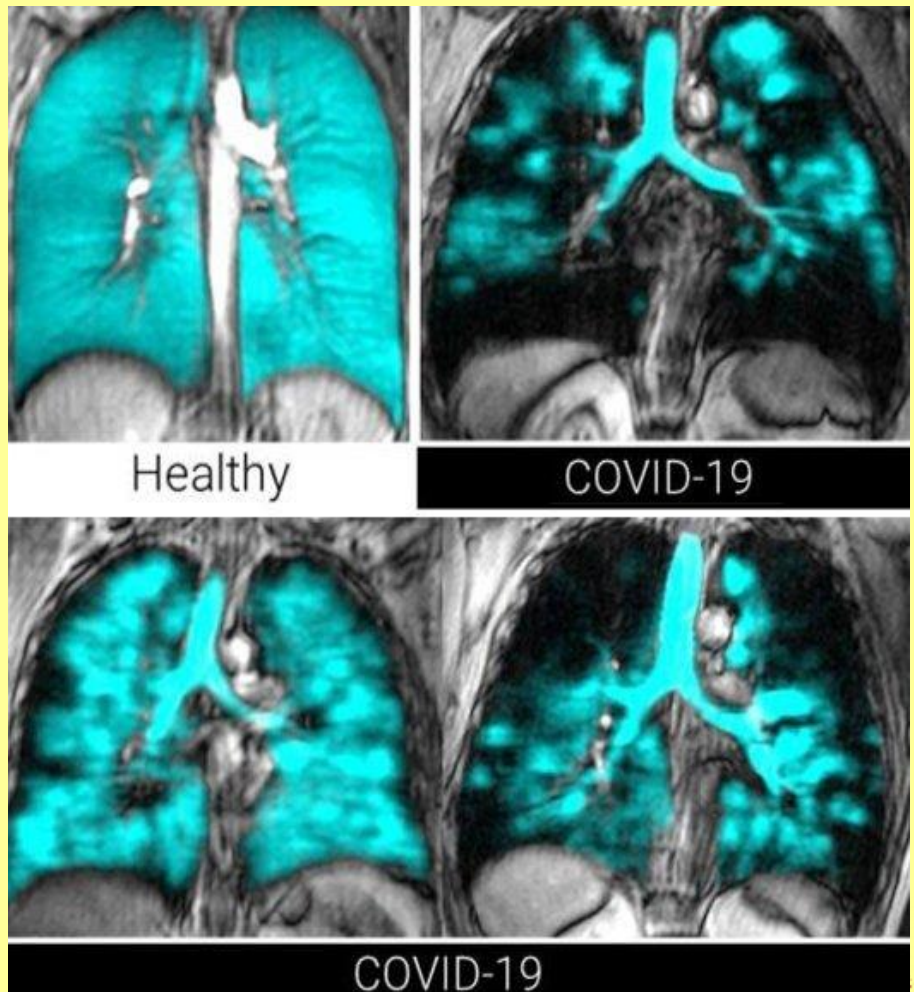
These patients are presenting with a staggering array of [over 200 symptoms](#), including dizziness, diarrhea, breathlessness, fatigue, and debilitating brain fog, which can linger for months [or even years](#).

Frustratingly, even long COVID patients describing breathing-related problems are showing normal results on standard clinical breathing tests, [says respirologist Michael Nicholson](#) from St. Joseph's Health Care London.

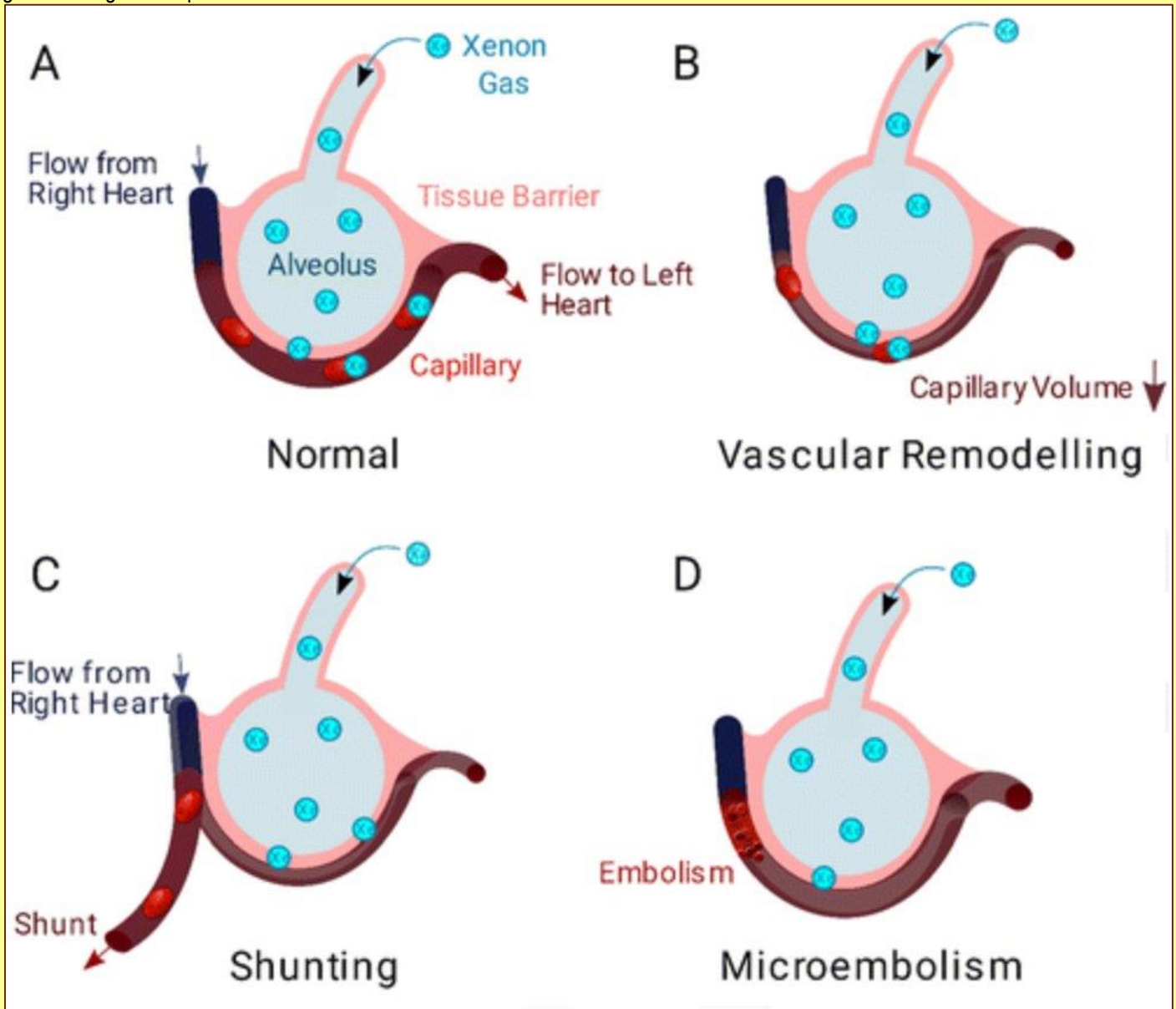
But a new imaging technique has now clearly revealed the source of the breathing problem.

"The findings allowed us to show that there was a physiological impact on [patient] lungs that correlated with their symptoms," Nicholson [says](#).

The scans demonstrate the extensive damage having [COVID-19](#) can cause to our delicate respiratory organs. Whether it's the [virus](#) itself [or the body's response to it](#), some



mechanism has effectively pruned the function of patients' lung vessels, lopping off many of the smallest ones where the all-important gas exchange takes place.



Possible mechanisms for disrupted gas exchange. (Matheson et al., Radiology, 2022)

The researchers, led by Western University physicist Alexander Matheson, instructed 40 volunteers – 34 with post-acute COVID-19-syndrome, and 6 without – to inhale a polarized xenon gas isotope. The gas resonates at a signature frequency under MRI, allowing the researchers to observe the activity of tiny airways and blood vessels in real time.

"For those who are symptomatic post-COVID, even if they hadn't had a severe enough infection to be hospitalized, we are seeing this abnormality in the exchange of oxygen across the alveolar membrane into the red blood cells," [says](#) Western University medical biophysicist Grace Parraga.

"What we saw on the MRI was that the transition of the oxygen into the red blood cells was depressed in these symptomatic patients who had had COVID-19, compared to healthy volunteers."

Because flu symptoms are the most obvious and common signs of COVID-19 it is often dismissed as just another respiratory disease, but COVID-19 is actually a [vascular disease](#) too, meaning it can interfere with the circulatory system. The virus particles [directly target endothelial cells](#), which line the walls of our blood vessels and heart.



## ICI C<sup>2</sup>BRNE DIARY – July 2022

The vascular damage is reflected by the MRI scans; CT scans also confirm the abnormalities in the finest blood vessels in our lungs. What's more, [a previous study](#) has already demonstrated a shift in blood distribution from smaller to larger blood vessels within the lungs of hospitalized COVID patients.

The team proposes several potential mechanisms for the alteration in gas exchange they witnessed, illustrated in the diagram below. The vessels may be losing their flexibility which reduces how much blood is available for xenon to bind to (B), new blood flow patterns thanks to changes in vessels elsewhere may be shunting the blood away from the gas exchange regions (C), or there is a physical blockage preventing the blood from getting there (D).

Matheson and colleagues caution that the small sample size limits their ability to generalize, but urge for further investigation. And whatever the mechanism behind this is, it is starkly clear catching the virus can really mess with the circulatory system.

Despite restrictions easing in many parts of the world, the global [pandemic](#) remains ongoing, and each [SARS-CoV-2](#) infection [risks vascular damage](#), from clotting problems to heart disease.

"I was on oxygen for almost two months after COVID, and it took me almost three months to get to a place where I could go for a walk without gasping for air," one of the study participants, bobsled Olympic gold medalist Alex Kopacz [explains](#).

"The take-home message for me is that we have to remember that this virus can have very serious long-term consequences, which are not trivial. In my case, prior to getting sick, I didn't think it would really affect me."

●► This research was published in [Radiology](#).

## N. Korea suggests balloons flown from South brought COVID-19

Source: <https://news.yahoo.com/n-korea-suggests-balloons-flown-045957631.html>



July 01 — North Korea suggested Friday its COVID-19 outbreak began in people who had contact with balloons flown from South Korea — a highly questionable claim that appeared to be an attempt to hold its rival responsible amid increasing tensions over its nuclear program.

Activists for years have flown balloons across the border to distribute hundreds of thousands of propaganda leaflets critical of North Korean leader Kim Jong Un, and North Korea has often expressed fury at the activists and at South Korea's leadership for not stopping them.

Global health authorities say the coronavirus is spread by people in close contact who inhale airborne droplets and it's more likely to occur in enclosed, poorly ventilated spaces than outdoors. South Korea's Unification Ministry said there was no chance South Korean balloons might have spread the virus to North Korea.



Ties between the Koreas remain strained amid a long-running stalemate in U.S.-led diplomacy on persuading North Korea to abandon its nuclear ambitions in return for economic and political benefits. South Korean and U.S. officials have recently said North Korea is ready for its first nuclear test in five years amid its torrid run of weapons tests this year.

The state media report said North Korea's epidemic prevention center had found infection clusters in the town of Ipho near its southeastern border with South Korea and that some Ipho residents with feverish symptoms traveled to Pyongyang. The center said an 18-year-old soldier and a 5-year kindergartener had contact with "alien things" in the town in early April and later tested positive for the omicron variant.

In what it called "an emergency instruction," the epidemic prevention center ordered officials to "to vigilantly deal with alien things coming by wind and other climate phenomena and balloons" along the inter-Korean border and trace their sources to the last. It also stressed that anyone finding "alien things" must notify authorities immediately so they could be removed.

The reports did not specify what the "alien things" were. But laying the blame on things flown across the border likely is a way to ease public complaints about its handling of the pandemic while repeating its objections to the ballooning activities of North Korean defectors and activists in South Korea, observers say.

Leafletting campaigns were largely halted after South Korea's previous liberal government passed a law criminalizing them, and there were no public balloon attempts made in early April.

[An activist](#) who is standing trial for past activities flew balloons carrying propaganda leaflets across the border in late April after halting them for a year. Park Sang-hak floated balloons twice in June, switching the cargo on those attempts to COVID-19 relief items such as masks and painkillers.

Police are still investigating the recent leafletting activities by the activist, Cha Duck Chul, a deputy spokesperson at the South's Unification Ministry, told reporters Friday. Cha also said the consensus among South Korean health officials and World Health Organization experts is that infections via contact with the virus on the surface of materials is virtually impossible.

In its previous dubious statements on COVID-19, North Korea also claimed the virus could spread through falling snow or migratory birds. Its pandemic-related restrictions even included strict bans on entering seawater.

Analyst Cheong Seong-Chang at South Korea's Sejong Institute said North Korea wants its people to believe the coronavirus originated from leaflets, U.S. dollars or other materials carried across the border by the balloons.

Cheong said North Korea will likely sternly punish anyone taking such South Korean items covertly. He said North Korea could also try to shoot down incoming South Korean balloons, a move that would prompt South Korea to return fire and would sharply escalate animosities between the countries. North Korea is infuriated by the leafletting campaign because it's designed to undermine Kim's authoritarian rule over a population that has little access to outside information. In 2014, North Korea fired at propaganda balloons flying toward its territory and South Korea returned fire, though there were no casualties.

North Korea's latest announcement on the virus contradicts the outside view that it spread after North Korea briefly reopened its northern border with China to freight traffic in January and it surged further following a military parade and other large-scale events in Pyongyang in April. Some outside experts have accused Kim of being largely responsible for the outbreak because he organized those events to boost public loyalty to the ruling Kim family amid economic hardships.

After maintaining a widely disputed claim to be coronavirus-free for more than two years, North Korea on May 12 admitted to the COVID-19 outbreak, saying an unspecified number of people in Pyongyang were diagnosed with the omicron variant.

North Korea has since reported about 4.7 million fever cases out of its 26 million population but only identified a fraction of them as COVID-19. It says 73 people have died, an extremely low fatality rate. Both figures are believed to be manipulated by North Korea to keep its people vigilant against the virus and prevent any political damage to Kim.

**EDITOR'S COMMENT:** Absurd accusations from a sociopath leader addressing a lobotomized nation ... So sad!

## Hundreds of Newfound Microbes in Melting Glacier to Potentially Spark a New Pandemic

Source: <https://www.natureworldnews.com/articles/51698/20220703/species-of-microbes-900-glacier-ice-new-pandemic.htm>

July 03 – Scientists were stunned to discover more than 900 never-before-seen species of microbes in melting glaciers, of which some could potentially be pathogenic.

It seems like the possibilities of consequences the world may face due to climate change could be endless.





A new analysis of microbes' genomes found inside glaciers on the Tibetan Plateau revealed that it could spark a wave of new pandemics if released, according to [LiveScience](#).

As climate change speeds up melting, these microscopic organisms could escape from their icy prisons.

Researchers from the Chinese Academy of Sciences sampled ice from 21 glaciers on the Tibetan Plateau - known as the Qinghai-Tibet Plateau or the Qing-Zang Plateau or as the Himalayan Plateau in India - also known as the "roof of the world" as it is the highest and largest plateau on Earth, as per [China Highlights](#).

The team's DNA sequencing showed that the microbes locked inside the ice created a massive database of genomes that they named the Tibetan Glacier Genome and Gene (TG2G) catalog - the first time a microbial community hidden within a glacier has been genetically sequenced.

### Unexpected Microbial Diversity

The team published

**species** frozen within the ice composed mostly of bacteria, along with algae, archaea and fungi.

However, they were perhaps surprised to find that around **98% of those species were completely new to science**, and that the level of microbial diversity was "unexpected" due to certain challenges inside the glaciers, such as "extreme environmental conditions like low temperatures, high levels of solar radiation, periodic freeze-thaw cycles and nutrient limitation," the authors wrote.

their report in the journal [Nature Biotechnology](#), noting that **968 microbial**



Despite it all, the surfaces of glaciers seem to support a diverse array of life.

Although it is unknown how old exactly some of the microbes were, previous studies show that those may have been trapped in ice for up to 10,000 years.



### Climate Change Boosts Potential Outbreak of Dangerous Microbes

The chances of having a new wave of pathogenic illnesses increase as climate change continues to melt glacial ice at a fast rate, mostly composed of bacteria which will "will escape and wreak havoc," researchers said, leading to local epidemics and "even pandemics" if released into the environment.

Moreover, evidence shows that the newfound bacteria could be very dangerous to humans and other organisms, with 27,000 potential virulence factors identified within the TG2G catalog that help bacteria invade and colonize potential hosts.

Researchers warned that around 47% of these virulent factors "have never been seen before," thus the potential harm it may cause and to what extent could not be known, although it is possible these pathogenic bacteria cannot survive for long after breaking out. Nonetheless, they can still cause problems, according to the researchers, because bacteria have the unique ability to exchange large sections of their DNA, known as mobile genetic elements (MGEs), with other bacteria.

This means even if they do die after escaping the thawed ice, it could pass on their virulence to some other bacteria they encounter.

### FDA and WHO disagree on COVID-19 vaccine booster variant advice

Source: <https://newatlas.com/health-wellbeing/fda-who-disagree-covid19-vaccine-booster-variant/>

July 03 – More than 18 months ago a [global COVID-19 vaccine roll-out](#) commenced, beginning the biggest international immunization campaign seen in decades. Since then, the virus that causes COVID-19 has mutated significantly and health authorities have been discussing whether it is finally time to update our vaccines.

Over the last month advisory groups to the World Health Organization (WHO) and the US Food and Drug Administration (FDA) have delivered divergent recommendations for vaccine booster formulations. The differing advice is a potent reminder of how uncertain the road ahead is as the COVID-19 pandemic moves through its third year.

Following the emergence of the [Omicron SARS-CoV-2 variant](#) at the end of 2021, the dominance of this new viral variant [quickly became clear](#). However, the spread of Omicron over the past six months has not been a straightforward process.

When it was first characterized in November 2021 the WHO actually rolled three separate viral subtypes under the one Omicron umbrella: BA.1, BA.2 and BA.3. These three sub variants were all relatively distinct, but BA.1 was the first iteration to really take hold around the world.

Since last year, Omicron has undergone a plethora of changes and mutations. Scores of distinct subtypes have been characterized, and waves of infections have ebbed and flowed as newer versions of the virus took hold - [from initial BA.2](#) spread to [BA.2.12.1](#) and then BA.4 and BA.5.

The sheer pace of new sub variants emerging and becoming dominant mean global health authorities are faced with an impossible decision. How do we target new vaccine formulations when it is likely entirely novel SARS-CoV-2 iterations will be spreading by the time the doses are made and administered?

In mid-June the WHO's Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC) met to discuss this very issue. An [interim statement from the advisory group](#) indicated the current formulation of the vaccine was still incredibly effective at reducing severe disease outcomes from COVID-19, so that should still be used as a primary protocol for those yet to be vaccinated.

But, the group did recognize SARS-CoV-2 is incrementally changing its form, and there is value in a booster that can broaden one's immune response to emerging variants. Omicron, of course, was found to be the variant that a prospective booster should target, and two questions arose: What specific Omicron subtype should a booster aim for, and should the booster be monovalent (containing antigens solely for the targeted Omicron subtype) or bivalent (containing antigens for both the newer Omicron target and the original strain)?

On the latter question the WHO group indicated a monovalent booster would be the best course of action. The Omicron subtype decided upon as the target was BA.1, despite the fact that in most parts of the world it had already been supplanted by other Omicron iterations.

The advisory group's thinking behind targeting BA.1 was that instead of trying to guess what specific kind of Omicron subtype will be dominant months into the future, it would be better to use the booster to give our immune systems a look at the most distinct form of the virus currently circulating. This would, hypothetically, broaden immunity against variants yet to emerge.

Data from the WHO showed the most antigenically distinct SARS-CoV-2 variant currently circulating is BA.1. Antigenic cartography, which maps SARS-CoV-2 variants in terms of how antigenically different they are from one another, suggested BA.1 is more distinct than other forms of Omicron, so it could be the best target for broadening immunity.



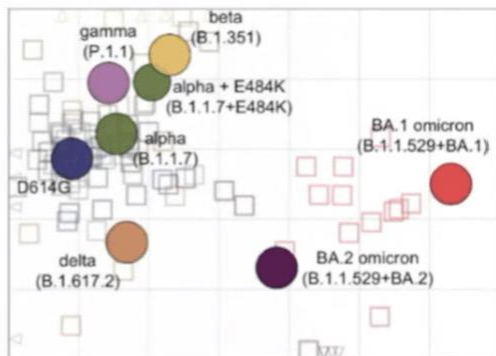


Speaking to CNN, Kanta Subbarao a virologist who chaired the June TAG-CO-VAC meeting, said the goal of booster strategies should not be to try and guess the leading future variant but to broaden immunity in the hopes of protecting people from what may arise.

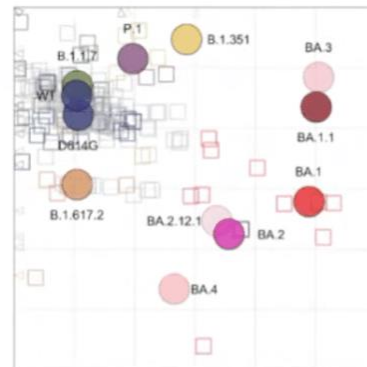
#### 4. Antigenic cartography



Neutralizing antibody data from human sera following infection with 614G or variants demonstrate that **Omicron lineages are antigenically distinct from the earlier VOCs** including 614G, Alpha, Beta, Gamma, Delta, Lambda, Mu and Zeta. The data also indicate that **BA.1 may be more antigenically distinct** from the index virus (D614G) than other sublineages.



Antigenic map of SARS-CoV-2 variants constructed from single exposure convalescent and double vaccinated sera.



Aggregated antigenic map of SARS-CoV-2 variants constructed using data from multiple preprint and published studies.

Rossler A, Netzi A, Knabl L, et al. BA.2 omicron differs immunologically from both BA.1 omicron and pre-omicron variants. Preprint. medRxiv. 2022. doi: 10.1101/2022.05.10.22274906

Netzi A, Turrelo, LeGresley E, et al. Aggregated incoming Omicron neutralization data. Last update 26 May 2022. Available from: [https://docs.google.com/presentation/d/13NFT3GjMiuTbDQZRSi7Vlua6G3FvwSHYgbU9gMoW4U/edit#slide=id.g12df13b5e55\\_4\\_0](https://docs.google.com/presentation/d/13NFT3GjMiuTbDQZRSi7Vlua6G3FvwSHYgbU9gMoW4U/edit#slide=id.g12df13b5e55_4_0)



A slide from a presentation delivered to the FDA discussing the reasons behind WHO selecting BA.1 as the best antigenic target for a booster vaccine (WHO)

"I still think there's value in increasing the breadth of immunity and I will reiterate that we're not trying to match what may circulate," [said Subbarao](#). "It is not so much to match what is likely to circulate because there's so much uncertainty about the trajectory of this evolution. We're trying to increase the breadth of the immune response without losing the benefit from the index vaccine that's performed so well."

At the end of June the FDA's Vaccines and Related Biological Products Advisory Committee met to offer its recommendations for fall/winter COVID-19 vaccine formulations. The [long meeting included presentations](#) from both Pfizer and Moderna, who offered new data on BA.1 boosters that have been in development since the beginning of the year.

This new data from Pfizer and Moderna showed the BA.1 boosters in development produced strong immune responses to Omicron compared with the original vaccine formulation. However, immune responses generated by BA.1 boosters against BA.4 and BA.5 was not as strong.

The committee ultimately only voted on a general question asking whether "an Omicron component" be added to COVID-19 booster vaccines. The recommendation was nearly unanimous (19 to 2), while the discussions seemed to focus on the BA.4 and BA.5 variants that are rapidly becoming dominant in the United States.

[A formal announcement from the FDA](#) the following day revealed the final decision, and it directly contrasted with the WHO recommendation. The FDA will require COVID-19 boosters to be bivalent, and contain antigens targeting the BA.4/5 subtype of Omicron.

"Following the vote, and striving to use the best available scientific evidence, we have advised manufacturers seeking to update their COVID-19 vaccines that they should develop modified vaccines that add an Omicron BA.4/5 spike protein component to the current vaccine composition to create a two-component (bivalent) booster vaccine, so that the modified vaccines can potentially be used starting in early to mid-fall 2022," [said Peter Marks](#), director of the FDA's center for biologics evaluation and research.

The divergent decisions leave vaccine makers in a tough position. Both [Pfizer and Moderna have already begun](#) manufacturing BA.1 booster doses. Pfizer in particular has indicated it was ready to



begin distributing BA.1 boosters immediately, while Moderna claimed to have 200 million doses in the pipeline for early September. The FDA decision to target BA.4/5 means there will be a delay, pushing any US booster program back to October or even November. It's also unclear what will happen to any pre-existing supply of BA.1 boosters. Will they be distributed anywhere? And if so, what kind of confusion could ultimately result if multiple different COVID-19 vaccine formulations started to roll out around the globe. No announcement has come from Pfizer or Moderna as to whether they will continue manufacturing of BA.1 boosters for other regions in the world.

Moving forward it is obviously necessary for some kind of central global authority be formed to track and recommend COVID-19 vaccine variant targets in much the same way [influenza vaccines are annually reformulated](#). Twice a year the WHO convenes a meeting with seven different influenza surveillance organizations around the globe. It is here that recommendations are made for influenza vaccine composition for the Northern and Southern Hemisphere winters.

Jerry Weir, director of viral products at the FDA, [has called for](#) improved global co-ordination and consensus on COVID-19 vaccine reformulations in the future. He does note that the current process for influenza vaccines evolved over decades so it is unsurprising there is such a discordancy right now with SARS-CoV-2 discussions.

"I will remind you that the parallel track of influenza strain selection, which works very well, was a process that was honed over many, many years," [added Weir](#). "This is a very different virus, so we probably have a lot of work to do on this strain selection process for COVID vaccines."

## As monkeypox spreads: 5 questions answered

By Matt Field

Source: <https://thebulletin.org/2022/06/as-monkeypox-spreads-5-questions-answered/>

June 30 – The Biden administration [announced](#) a new strategy this week to expand domestic vaccination efforts against the growing monkeypox outbreak in the United States and the world. Cases have [topped 4,700](#) globally since May. Unlike COVID-19, a respiratory disease, monkeypox isn't likely to spread as easily and spark another pandemic, experts say, but the staying power of this outbreak makes it worth our attention.

### Why is monkeypox now spreading around the world?

One reason monkeypox may be sparking a global outbreak is that more people are susceptible to it, having never been vaccinated against smallpox, a closely related disease.

When scientists in the 1980s calculated how readily monkeypox could transmit in the Democratic Republic of Congo, where it was first spotted in humans, they concluded that the virus posed a limited threat. On average, the decades-old research claimed, sick people infected fewer than one other person. But according to Institut Pasteur researchers who [reanalyzed](#) monkeypox transmission in 2020, there is a key difference between the 1980s and now: Most of the population in the Democratic Republic of Congo (DRC) was vaccinated for smallpox back then, which isn't the case any longer. As the smallpox vaccine is 85 percent effective against monkeypox, immunity to smallpox also prevents monkeypox.

"Our main result is that, had the DRC population been fully susceptible to monkeypox, monkeypox would have triggered an epidemic where the average number of cases per infectious individual would have been 1.46-2.67" the institute said in a press release.

When the WHO [recommended](#) a halt to smallpox vaccination in 1979, the monkeypox virus may have found an opening to infect more people. "This finding may explain the increasing number of monkeypox outbreak reports, resulting in endemic monkeypox in central African countries," the institute's researchers [wrote](#).

### What about the countries where the virus is endemic?

As of late June, 10 African countries have reported more than 1,700 cases of monkeypox in 2022, including 73 deaths, [according](#) to the Africa Centers for Disease Control and Prevention (Africa CDC). Outside Africa, one death was reported between mid-May and late June, despite far more cases. While African officials want to [ensure](#) their countries receive vaccination support, how that will happen isn't clear.

The Biden administration [announced](#) what it called the first phase of its national monkeypox vaccine strategy Tuesday. A news release said that in the coming months, the government will make 1.6 million vaccines available domestically, but it had little to say about how the United States would combat the



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global outbreak. The United States, the release said, has been assisting Nigeria and the Democratic Republic of Congo “for years” and is “is exploring options to further support the international response.”

While the WHO has said it is developing a plan for fair access to vaccines, some experts are skeptical the African countries that have been dealing with monkeypox for years will get the appropriate level of support. “Just like with COVID, there is no clear path for how poorer countries will be able to get vaccines,” Northeastern University law professor Brook Baker [told](#) *The Los Angeles Times*.

### What are countries doing to combat monkeypox?

The WHO [declined](#), last week, to label monkeypox a public health emergency of international concern, which it has done for the COVID-19 pandemic. However, the organization’s director-general, Tedros Adhanom Ghebreyesus, [said](#) in a statement that the disease nonetheless remains a threat. “What makes the current outbreak especially concerning is the rapid, continuing spread into new countries and regions and the risk of further, sustained transmission into vulnerable populations including people that are immunocompromised, pregnant women and children,” he said. The WHO could revisit whether to raise the alarm-level over monkeypox in the coming weeks.

Several countries, including the United States and the United Kingdom, have [begun](#) ramping up vaccination efforts, with particular focus on vaccinating certain groups of men who have sex with men. If the monkeypox outbreak isn’t contained, experts [worry](#) that the virus could establish itself outside of Africa.

### Do vaccines stop transmission?

The older version of the smallpox vaccine is considered 95 percent effective against infection by smallpox and at least [85 percent effective](#) against infection by monkeypox, [according](#) to the US Centers for Disease Control and Prevention, with protection lasting between three and five years. It’s made with the [vaccinia virus](#), a relative of smallpox. But the vaccine isn’t safe for [some immunocompromised people](#), and unlike a typical injection, vaccinators [must jab repeatedly](#) at the skin with a two-pronged needle to apply the vaccine. A new smallpox and monkeypox vaccine involves a non-replicating vaccinia virus. It can be [injected](#) like other vaccines and doesn’t pose the same risk to immunocompromised people as the older vaccine.

### What is monkeypox?

Monkeypox is somewhat of a misleading name, as the **virus’s natural reservoir is believed to be rodents** in West and Central Africa. **It was discovered in 1958 in laboratory monkeys in Denmark—hence the name**—but was first [found](#) in people in 1970. In [some years](#), the Democratic Republic of Congo has reported more than 1,000 cases of monkeypox. Until this spring, the virus rarely broke out of Africa. The current global outbreak is being driven by the so-called West African clade of the virus, a less virulent strain than the one commonly reported in the Democratic Republic of Congo. The virus can cause [symptoms](#) that include a rash, fever, and enlarged lymph nodes. The outbreak this spring and summer has been largely coursing through networks of men who have sex with men. Monkeypox is [spread](#) through contact with bodily fluids, lesions on infected animals or humans, or with contaminated material. According to the Africa CDC, transmission often occurs through respiratory droplets.

[Matt Field](#) is editor, biosecurity at the Bulletin of the Atomic Scientists. Before joining the Bulletin, he covered the White House, Congress, and presidential campaigns as a news producer for Japanese public television. He has also reported for print outlets in the Midwest and on the East Coast. He holds a master’s degree in journalism from Northwestern University.

## How monkeypox epidemic is likely to play out – in four graphs

By Adam Kleczkowski (Professor of Mathematics and Statistics, University of Strathclyde, UK)

- Source 1: <https://theconversation.com/how-monkeypox-epidemic-is-likely-to-play-out-in-four-graphs-184578>
- Source 2: <https://statisticallyinsignificant.blog/monkeypox-scenario-modelling/>



June 21 – The first case of monkeypox in a human was reported [in 1970 in the Democratic Republic of the Congo](#). Since then, there have been many monkeypox outbreaks, but they have been [self-limiting](#), with chains of human transmission ending without establishing epidemics. The current outbreak, however, is different. There is more human-to-human transmission, and it is over a much broader geographical area.

In mere weeks, monkeypox has spread to [37 non-endemic countries](#), with [over 2,600 cases](#). So, what is likely to happen to monkeypox in the following weeks and months?



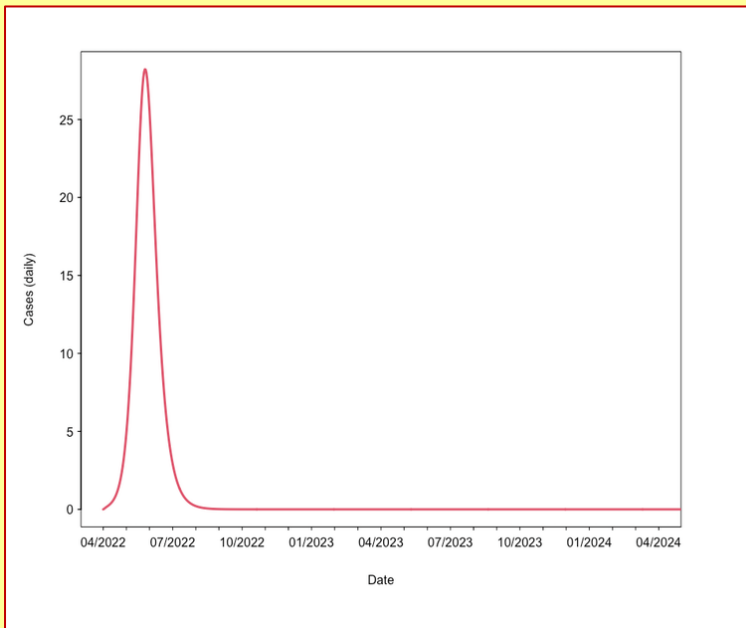
## ICI C<sup>2</sup>BRNE DIARY – July 2022

There are [huge gaps](#) in what we know about monkeypox, but combining what we do know with a history of other infectious diseases makes it possible to analyse likely future scenarios.

The four scenarios below are based on the following knowledge: the average number of people an infected person is likely to infect (assuming they have not been vaccinated against the virus or have had the disease before) is [2.13](#). This is called the basic reproduction number, or R. Herd immunity – the point at which enough people have immunity such that disease transmission can't be sustained – is 53% ([corresponding to this value of R](#)). And the [incubation period](#), the time from catching the virus to the appearance of symptoms, is between five and 21 days.

### Scenario 1: Self-limiting outbreak

The 2022 epidemic appears to have started as a [super-spreader event](#) involving a [network](#) of predominantly men who have sex with men.



But until the current outbreak it was assumed that the [relatively low](#) human-to-human transmissibility of the virus [makes it unlikely](#) for the virus to spread outside the initial community.

Plot illustrating the daily number of cases under scenario 1. The size and duration of the outbreak here and in the graphs below are for illustration purposes only and do not constitute a detailed prediction of what might happen in the future.

In this scenario, the outbreak ends quickly once the population at risk becomes immune and herd immunity is reached locally. In the past, many people had some immunity (called “cross-immunity”) from the smallpox mass vaccination programmes of the late 20th century. So the effective reproduction number, R, can be close to or even lower than one, and the transmission will soon stop.

Behavioural changes can reduce the number R even more. For example, the [ring vaccination](#) can form a “firebreak”,

further reducing the susceptible population. Similar previous epidemics include the [Sars outbreak](#) in 2002-04, when a quick intervention stopped the disease from spreading.

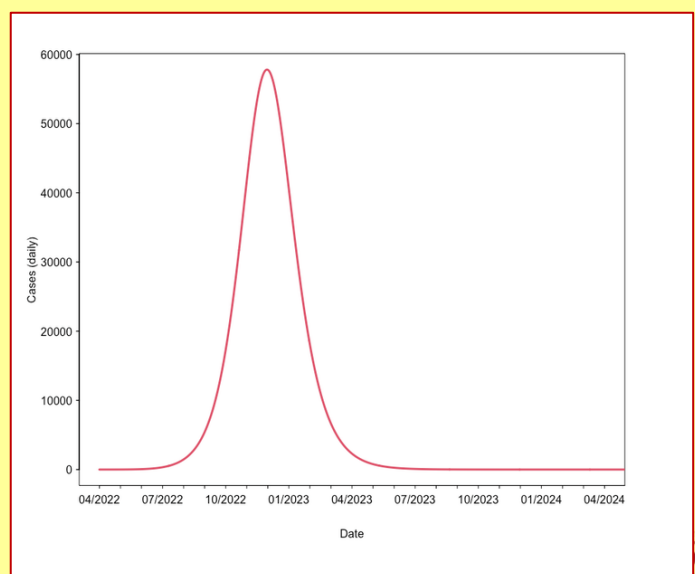
### Scenario 2: All population

The [continuing spread](#) of monkeypox in May and June 2022 suggests that the virus is moving beyond the original network. The size of the outbreak is already well beyond the most prominent 2017-19 outbreak in the Democratic Republic of Congo (760). It is possible that [large gatherings](#), including raves and festivals, have created new transmission clusters.

A plot illustrating the daily number of cases under Scenario 2. Adam Kleczkowski

Scenario 2 assumes that everybody below the age of 50 is susceptible to the infection, reflecting [the end of compulsory smallpox vaccination](#) in the 1970-80s. The virus will continue spreading, effectively searching for pockets of high-risk and non-immune communities.

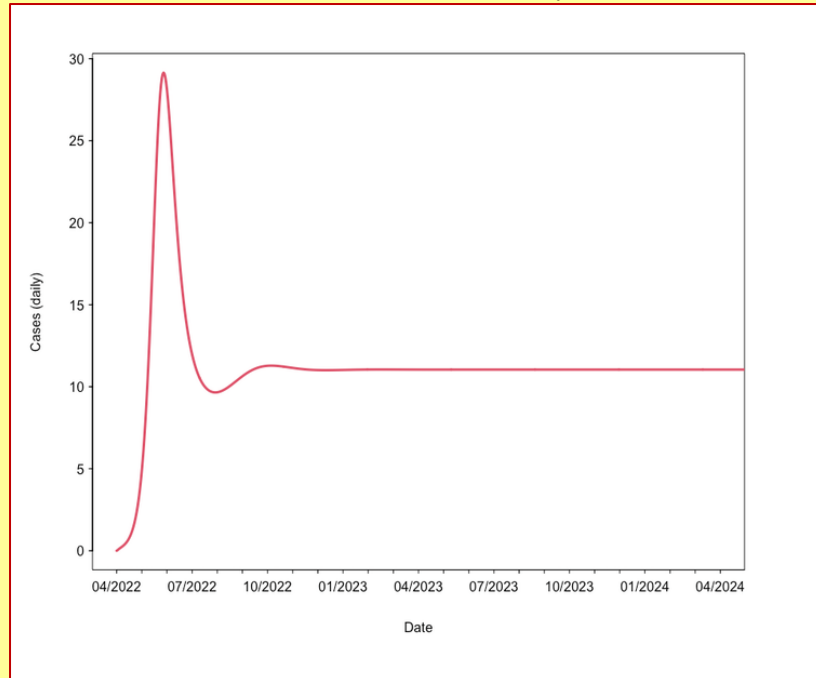
Unless a combination of contact tracing and ring vaccination stops the spread, the monkeypox will continue spreading. But,



given the low transmissibility of monkeypox, the epidemic may fizzle out before reaching the herd immunity threshold of 50% of the population.

### Scenario 3: Becoming endemic

Complete eradication is impossible because monkeypox exists in a wide range of animal hosts. The low transmissibility also means it can survive at low levels in the population. In addition, the long incubation period and variable symptoms allow it to avoid detection. Therefore, monkeypox may have already been [spreading](#) for a long time.



A plot illustrating the daily number of cases under Scenario 3.

In scenario 3, following the large outbreak, the disease will settle on a long-term, relatively constant level. Similar to the pre-vaccination [smallpox](#) or [chickenpox](#).

The influx of susceptible people through birth or migration will keep the virus in the population. [Mass vaccination programmes](#) might be needed to eradicate the disease. But relatively low monkeypox transmissibility means such programmes are likely to be highly effective.

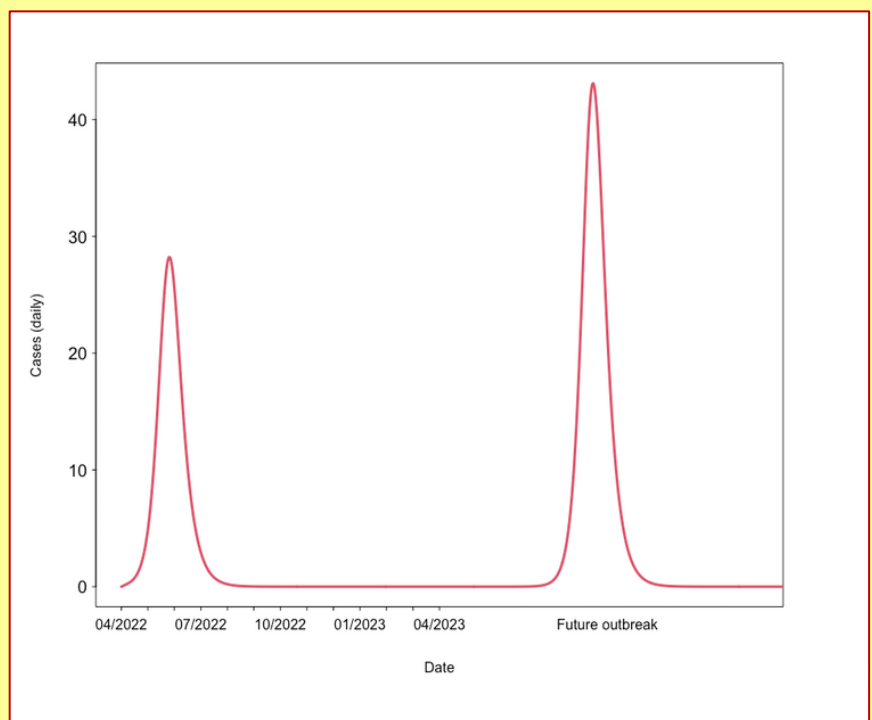
### Scenario 4: Recurrent large epidemics

The current epidemic might be the first instance of a series of outbreaks. In the long term (scenario 4), we should expect a return of monkeypox caused by future “zoonotic events” where the disease jumps from animal hosts to humans. As the cross-immunity from smallpox vaccines wanes, the epidemics can become even more substantial.

A plot illustrating the daily number of cases under Scenario 4.

Little is known about the potential of monkeypox to mutate. Still, there is [potential](#) for it to evolve into a more rapidly spreading variant.

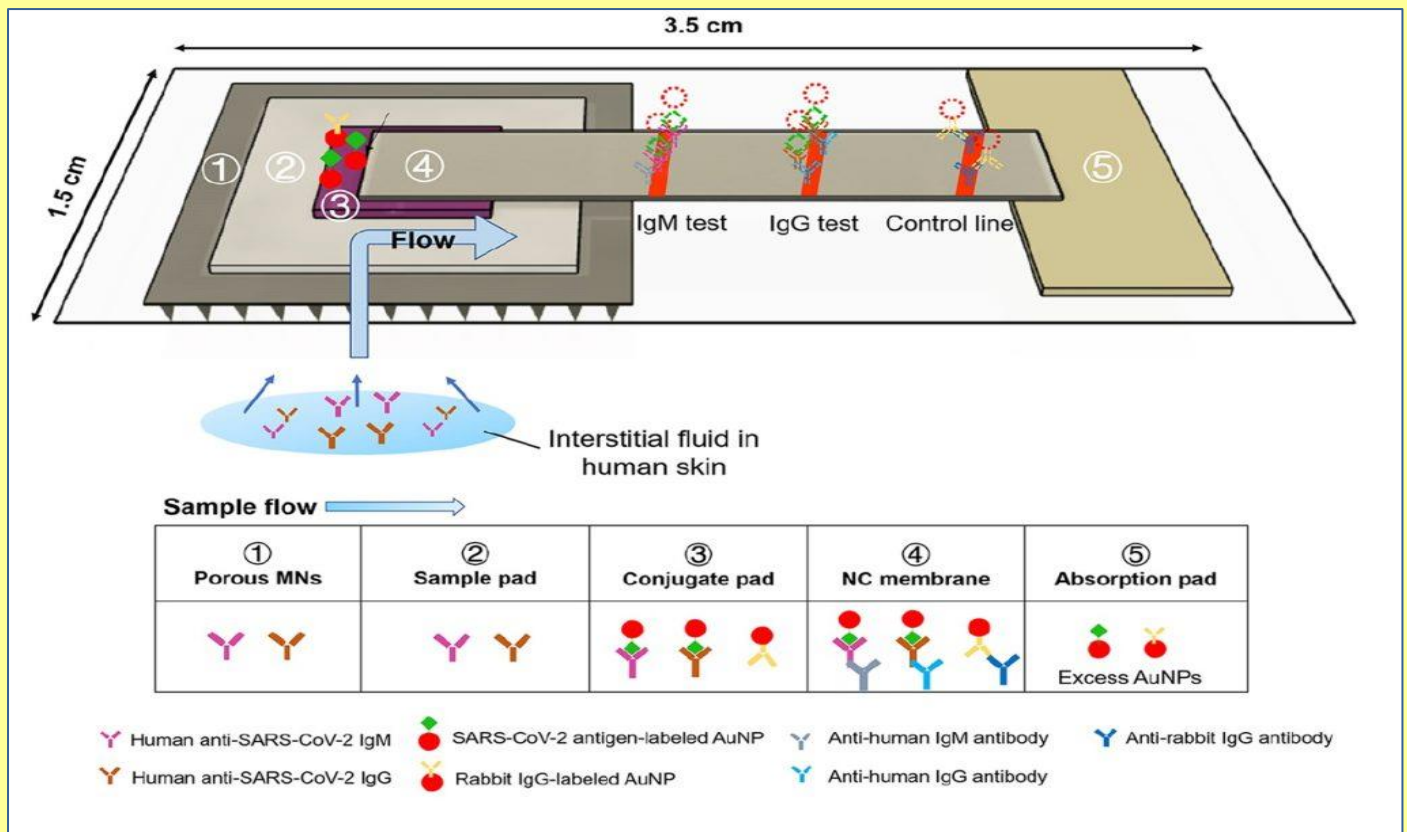
[Effective vaccines](#) for monkeypox exist and are about 85% effective. Although there are currently not enough doses to vaccinate everyone, there is no need for a mass-vaccination programme given monkeypox’s low transmissibility. Instead, vaccines should be offered to those most at risk, including communities in Africa most in contact with the wild animals that carry the virus.



## Skin Patch Test Detects COVID-19 in Under Three Minutes

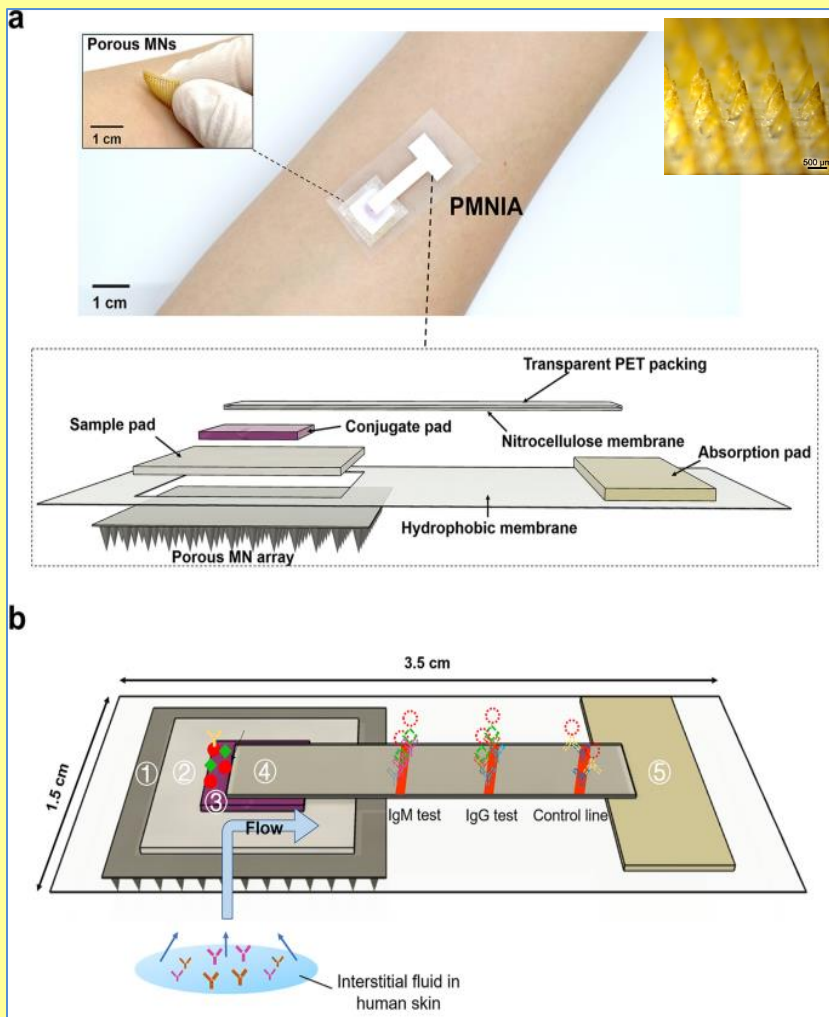
Source: <https://www.genengnews.com/topics/translational-medicine/infectious-diseases/skin-patch-test-detects-covid-19-in-under-three-minutes/>

July 05 – A rapid and reliable skin-patch test can now detect the COVID-19 virus, and potentially other infectious agents in under three minutes, without the need to draw blood. This convenience overcomes a current challenge in identifying infected individuals who are averse to blood tests and could help restrict the spread of the pandemic. Asymptomatic individuals constitute 16–38% of the SARS-CoV-2 infected population which increases the difficulty of identifying infected individuals. The lack of convenient and sensitive tests to detect the virus in all individuals is continuing to limit global response to the pandemic. Predominantly, SARS-CoV-2 is detected through RT-PCR (real-time reverse transcription polymerase chain reaction) on swab samples collected from the nose and throat. However, these tests require long detection times, high costs, specialized equipment and medical personnel, and are not feasible in areas where resources are limited. Alternatively, COVID-19 infection is detected through antibody tests (immunoassays) using blood samples collected from finger pricks by a lancing device. These popular point-of-care options require gold nanoparticle-based testing strips and involve risks of cross contamination and biohazard. Immunochromatographic tests that detect anti-SARS-CoV-2 immunoglobulin M (IgM) and immunoglobulin G (IgG) can provide clinically relevant information regarding the course of COVID-19 infection, but invasive blood sampling poses a major obstacle. “To develop a minimally invasive detection assay that would avoid these drawbacks, we explored the idea of sampling and testing interstitial fluid, which is located in the epidermis and dermis layers of human skin,” said first author Leilei Bao, PhD, researcher at the Institute of Industrial Science, at The University of Tokyo. “Although the antibody levels in the interstitial fluid are approximately 15–25% of those in blood, it was still feasible that anti-SARS-CoV-2 IgM/IgG antibodies could be detected and that interstitial fluid could act as a direct substitute for blood sampling.”



Porous microneedle and immunochromatographic assay (PMNIA) provides a rapid, painless, easy to use, alternative for the simultaneous detection of SARS-CoV-2 IgM and IgG antibodies in dermal interstitial fluid [Bao et al, Sci Rep, 2022]“We developed biodegradable porous microneedles made of polylactic acid that draws up the interstitial fluid from human skin,” said Beomjoon Kim, PhD, professor at the department of mechanical and biofunctional systems at The University of Tokyo, and the senior author of the paper. “Then, we constructed a paper-based immunoassay biosensor for the detection of SARS-CoV-2-specific antibodies.”



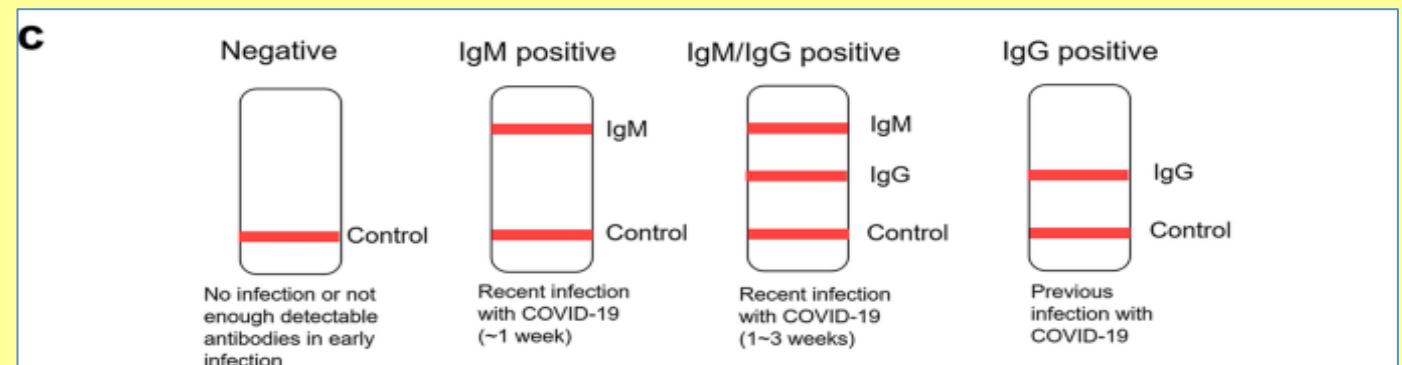


Dermal interstitial fluid is a rich and accessible source of protein biomarkers, including antibodies. The authors prepared polylactic acid microspheres from a single emulsion to form continuous micropores, which they then heated for half an hour at 180°C to bind them together. They demonstrated these microneedles fabricated with emulsion droplets could effectively penetrate and extract interstitial fluid by capillary effect from rat and pig skin, used to model human skin.

**Design of PMNIA for COVID-19 detection.** (a) Photograph of a structural overview of the detection device and a magnified view of the device comprising the porous MN array and components of the paper-based immunochromatographic biosensor. Inset image shows the porous MN array with a flexible substrate. (b) Schematic diagram of the PMNIA principle for simultaneous detection of anti-SARS-CoV-2 IgM/IgG. (c) Illustration of the interpretation of the different detection results using PMNIA.

The extracted interstitial fluid flows vertically into the attached nitrocellulose paper biosensor, where virus-specific antibodies are detected visually through a colored-based reaction (colorimetry).

The researchers show that anti-SARS-CoV-2 IgM and IgG levels as low as 3 and 7 ng/mL, respectively, can be detected using the skin patch test which shows the advantage of this new method over current commercially available lateral-flow immunochromatographic assays (LFIA). The patch, 1.5 cm by 3.5 cm in size, detects anti-



SARS-CoV-2 antibodies in the interstitial fluid in a painless and convenient test, in under three minutes.

The authors believe that the speed, safety, simplicity, convenience, and minimally invasive nature of the compact anti-SARS-CoV-2 IgM/IgG biosensor device will lead to its widespread use. In addition to COVID-19, the authors claim that the device can be customized to rapidly screen various infectious agents and provide a complementary diagnostic test.

► The details of the new test were published on July 1, 2022, in an article in the journal *Scientific Reports* titled, "[Anti-SARS-CoV-2 IgM/IgG antibodies detection using a patch sensor containing porous microneedles and a paper-based immunoassay.](#)"



## THE PLAN - WHO plans for 10 years of pandemics, from 2020 to 2030

Source: <https://rumble.com/v13kefy-must-see-the-plan-who-plans-for-10-years-of-pandemics-from-2020-to-2030.html>

May 2022 – The PLAN shows the official agenda of the World Health Organization to have ten years of ongoing pandemics, from



2020 to 2030. This is revealed by a WHO virologist, Marion Koopmans. You will also see shocking evidence that the first pandemic was planned and abundantly announced right before it happened. Make sure to watch, and share this everywhere.

► More information, and to see all the documents in THE PLAN, go to:

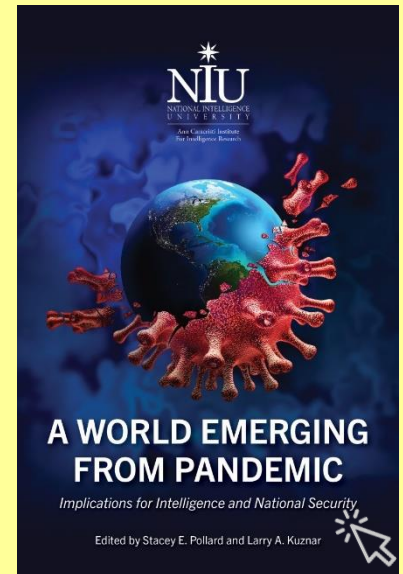
<https://www.stopworldcontrol.com/proof>

## A World Emerging from Pandemic: Implications for Intelligence and National Security

National Intelligence University (NIU), Mar 21, 2022

Source: <https://ni-u.edu/wp/ni-press-publications/>

This edited volume explores how the COVID pandemic has impacted-and will continue to impact-the U.S. Intelligence Community. Authors from multiple disciplines probe the ways in which pandemic-associated conditions interact with national security problem sets. This work presents evidence-based, qualitative, quantitative, and mixed-methods analyses so their projections can be tested against future conditions. This project is the result of a cooperative effort between National Intelligence University and the Pentagon's Joint Staff Strategic Multilayer Assessment office.



## Stop Calling Nurses Superheroes

By Clara Yim Bolduc, RN

Source: <https://www.medscape.com/viewarticle/976190>

July 01 – Imagine walking into work, and your boss says, "Today, you're going to take a test. The test will last for your entire 12-hour shift. There are 24 questions on the test. Each question will take approximately 1 hour to complete."

"Wait a minute," you say, doing some quick mental math, "That's 24 hours' worth of work. There's no way I can do that in 12 hours."





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"Sure, you can! You just need to have a better attitude," your boss says. "Lean on your coworkers. Learn to work collaboratively, like a finely tuned machine, or an unrealistically functional family. But don't talk to each other too much. If I see you laughing or chatting or sharing a picture of your grandkids for 8 seconds in the hall, I'll know you aren't working hard enough and I'll give you more questions."

"Good teamwork requires camaraderie," you say.

"I'm not paying you to make friends. I'm paying you to take a 24-hour exam in 12 hours."

"You know this is impossible, right?" you ask.

"Nothing is impossible!" your boss tells you. "See? It says so on that motivational poster in the breakroom, right next to the vase of wilted flowers that old lady's family sent to the nurse's station, after she died. You know, I bought that poster. With my own money. No need to thank me. It's just a little gift to show how much I appreciate you. You're like a superhero without a cape! Don't forget to punch out on time! We're depending on you!"

Welcome to the world of bedside nursing, where the hours are long, the stakes are high, and the institutional gaslighting is unrelenting.

One day, early in my training as a medical-surgical nurse, my preceptor said to me, "Helping people in their time of need is a privilege. Always remember that." She's right, and I think most nurses would agree. But it's a privilege we pay for dearly, too often with our [lives](#), our bodies, and our [mental health](#).

This painful truth was brought home to me after my third day at my new job, when I found myself reaching for my Ativan prescription for the first time since I left my last nursing job, more than a year ago. I couldn't fall asleep, because I couldn't stop reviewing and second-guessing every decision I'd made throughout the day: *If I'd just been a little more organized, could I have gotten those meds to all my patients on time? Did I remember to chart that Foley I removed? How long was that patient sitting in his own poop before we got to him? Will he get a [bedsore](#) as a result? I should have notified the doctor when that patient didn't tolerate that NG tube. Will whatever errors I made today, or whatever errors I will inevitably make tomorrow, cause my patients any harm? The day would go smoother if I went in half an hour before my shift starts, to read up on my patients' charts. Should I go in early tomorrow, even though the hospital prohibits it and I won't be paid for that time?*

The common cost-saving measure of forbidding nurses from clocking in more than a few minutes before their shift strikes me as incredibly short-sighted. How can we be expected to safely care for our patients when we arrive on the floor, knowing no more information about them than can be squeezed into a 5-minute verbal report? "Don't code at shift change!" I hear from nurses. They say it jokingly, but the danger is real.

Administrators acknowledge that we've got it tough. They call us "superheroes," like it's a compliment. I appreciate the sentiment, but I can't help but hear the subtle implication that we shouldn't be asking for money to do our jobs. After all, most of us are women, and "caring" is just part of our DNA, right? But more than that, I think calling us "superheroes" supports the false narrative that nurses should be capable of doing the impossible — and a reminder that the failure to do so is ours and ours alone.

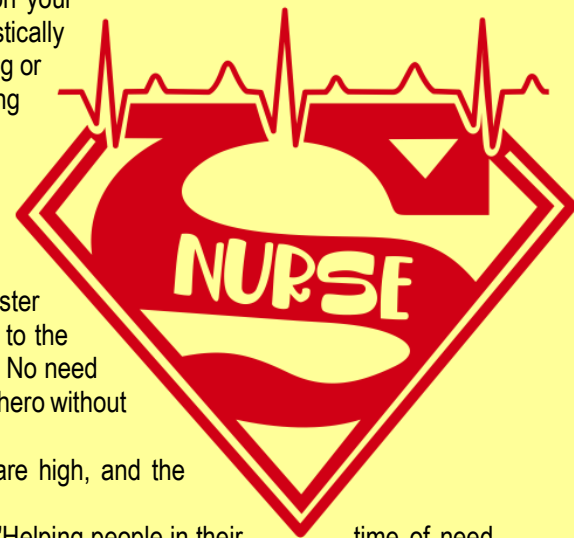
When your job demands the impossible, failure is inevitable. Mistakes and medical errors are unavoidable. We're forced to cut corners on patient care, because we simply aren't given enough time to do our jobs. There are 24 hour-long problems to complete, and we are given 12 hours in which to complete them.

Hospitals need to stop pretending that nurses are superheroes. They need to acknowledge that we're humans with normal, human limitations. Until then, the job of nursing will continue to become more and more untenable, and there will be fewer and fewer people willing to continue doing it.

What most nurses want is pretty simple: We want to provide safe, quality care to our patients. We don't want appreciation awards; we don't want free sandwiches, or posters in the breakroom. We definitely don't want to be called superheroes. We simply want to do our jobs, safely.

And that requires that our patient numbers be limited; that if and when those limits are — by necessity — exceeded, there are crisis-staffing policies in place to guide and protect us so we can legally adjust and prioritize our care accordingly and that policies and procedures be changed to fit the reality of day-to-day patient care in the specific environments in which we work.

What's that you say? There's a nursing shortage? A budget shortfall? A patient surplus? Limiting our patient loads to safe levels right now is impossible?

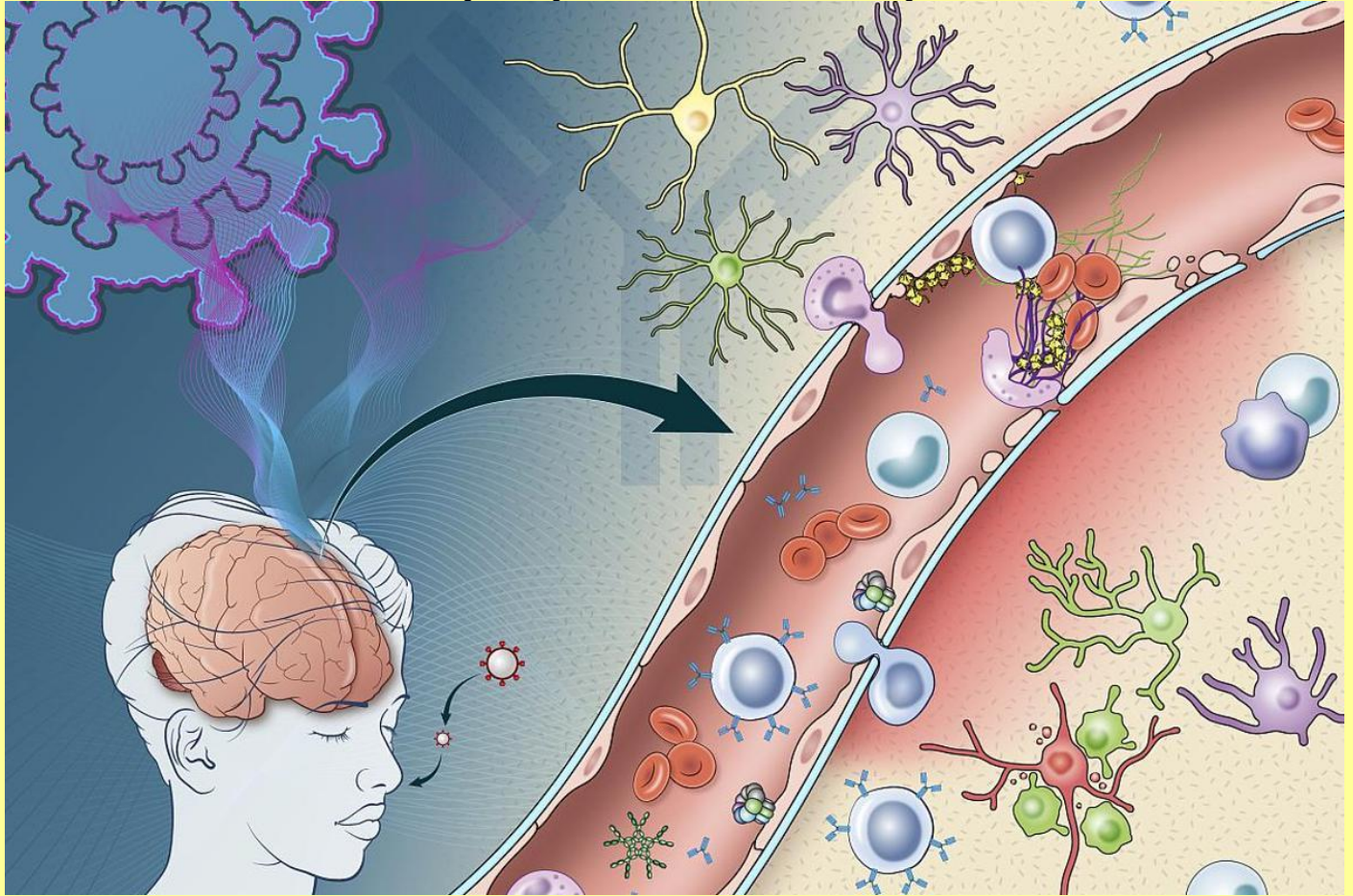


As a motivational poster once said to me, "Nothing is impossible!" You can do it. We're depending on you.

**Clara Yim Bolduc** works as a hospice nurse in Maine, where she lives with her husband and four children. In the weeks since writing this piece, she has left the hospital.

## New clues to how COVID may trigger immune damage in the brain

Source: <https://newatlas.com/health-wellbeing/nih-long-covid-blood-brain-immune-damage/>



SARS-CoV-2 infection was found to trigger the production of immune molecules that damage cells lining blood vessels in the brain (NIH Medical Arts)

July 05 – A small autopsy study examining brain tissue from patients who died from COVID-19 is offering new clues to how this novel coronavirus can lead to brain damage. The findings suggest an abnormal immune response could be damaging vascular cells in the blood-brain barrier, leading to many neurological symptoms associated with COVID-19.

"Patients often develop neurological complications with COVID-19, but the underlying pathophysiological process is not well understood," noted senior author Avindra Nath.

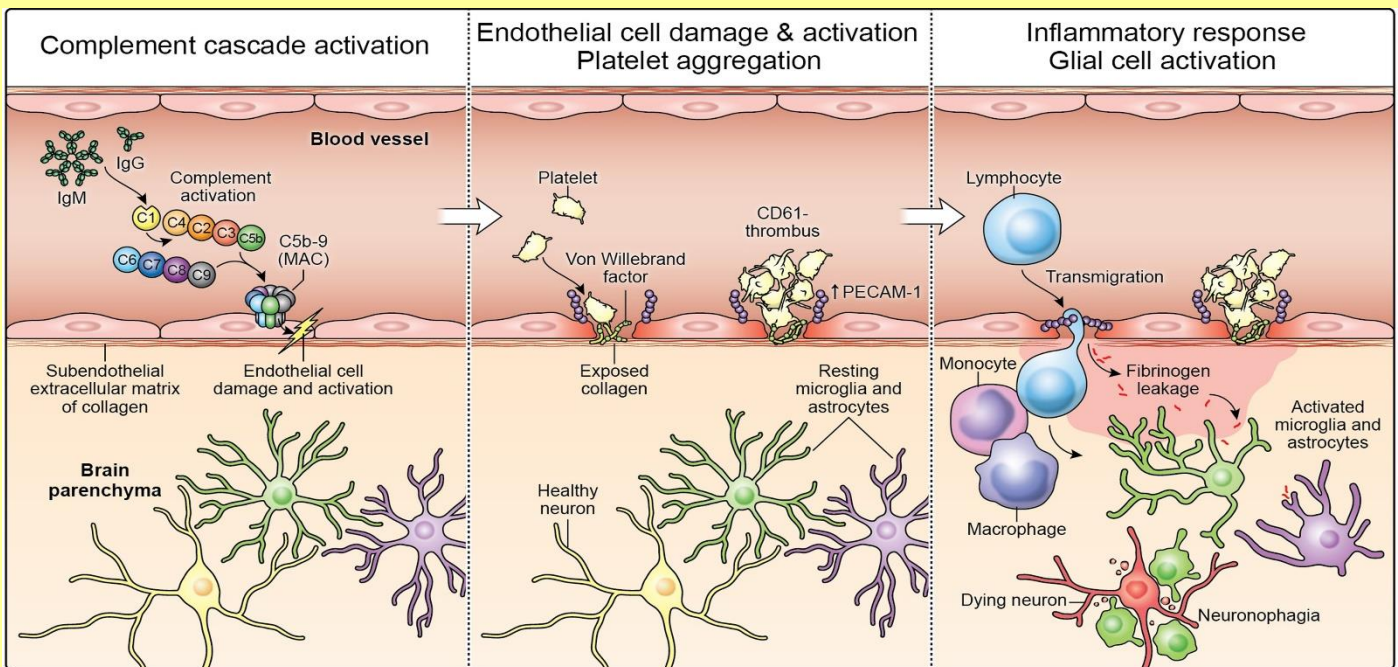
As the pandemic has progressed researchers have discovered COVID-19 is not just a straightforward respiratory disease. The short- and long-term effects of SARS-CoV-2 on the brain has been the focus of much recent study as doctors have seen COVID patients experience significantly [high rates of blood clots](#) and [stroke](#).

**A key study last year** found [COVID-19 patients showed significant damage](#) to cerebral vascular endothelial cells, crucial components of the blood-brain barrier. It has been hypothesized that this endothelial cell damage could be the trigger that leads to neurological symptoms associated with COVID, but a pair of key questions still remained unanswered: How could this endothelial cell damage lead to neuron damage, and was it the virus directly causing the damage, or was this related autoimmune damage?



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This new research, led by scientists from the National Institutes of Health, sheds some light on those questions. Following a close investigation of brain tissue from a small number of deceased COVID-19 patients, the research indicates the primary endothelial cell damage is likely linked to an abnormal immune response.



The proposed cascade of events to explain the neuropathological findings is as follows: C1 binds to the IgG and IgM antibodies and activates the classic complement pathway. The end product of this cascade, C5b-9 binds to endothelial cells and causes endothelial cell damage. This leads to activation of endothelial cells and increased PECAM-1 and vWF release, resulting in platelet aggregation and thrombus formation. Simultaneously, there is leakage of serum proteins into the perivascular space, which leads to an influx of monocytes and T lymphocytes into the parenchyma. Monocytes differentiate to macrophages and there is activation of microglia and astrocytes in the brain parenchyma. This leads to neuronal injury and neuronophagia.

The study revealed immune biomarkers could be detected on the surface of these damaged endothelial cells. This initial damage to the cells activates them, triggering a cascade of events that is thought to result in the neurological symptoms we associate with both acute and long COVID.

“Activation of the endothelial cells brings platelets that stick to the blood vessel walls, causing clots to form and leakage to occur,” Nath explained. “At the same time the tight junctions between the endothelial cells get disrupted causing them to leak. Once leakage occurs, immune cells such as macrophages may come to repair the damage, setting up inflammation. This, in turn, causes damage to neurons.”

Despite some prior studies suggesting SARS-CoV-2 could be detected in the brain, this study found no trace of the virus in any tissue. So it still is a mystery as to why the immune system would suddenly target healthy cells following a SARS-CoV-2 infection. One hypothesis offered is that immune antibodies generated to target the coronavirus may also be incidentally attacking healthy tissue that share the ACE2 receptor used by the virus to infect our cells.

Although this study offers the most robust characterization of the events that could lead to the neurological problems associated with COVID-19, it certainly isn't the first to suggest an inflammatory cause is behind these symptoms. [A detailed study from scientists at Stanford](#) last year pointed to “profound molecular markers of inflammation” in the brains of deceased COVID patients.

**Another small study** earlier this year found [markers of inflammation in the cerebrospinal fluid](#) of several long COVID patients experiencing symptoms of “brain fog”. All of these findings present strong evidence to suggest a persistent immune response to SARS-CoV-2 infection could be responsible for many aspects of acute and long COVID.

“It is quite possible that this same immune response persists in Long COVID patients resulting in neuronal injury,” Nath said. “There could be a small indolent immune response that is continuing, which means that immune-modulating therapies might help these patients. So these findings have very important therapeutic implications.”



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These findings do not mean some kind of broad immunosuppressive therapy is the cure for long COVID. Instead, the new research points to the potential development of more novel targeted treatments designed to specifically prevent these immune responses from damaging the brain.

●► The new study was published in the journal [Brain](#).

### Did COVID vaccine mandates work? What the data say

Source: <https://www.nature.com/articles/d41586-022-01827-4#author-0>

July 06 – A measure of last resort got a major workout during the pandemic. Scientists are now trying to determine whether the benefits outweighed the potential damage to public trust.

### How COVID vaccines shaped 2021 in eight powerful charts

Source: <https://www.nature.com/articles/d41586-021-03686-x>

Dec 2021 – The extraordinary vaccination of more than four billion people, and the lack of access for many others, were major forces this year — while Omicron's arrival complicated things further.

### Where Does 'Brain Fog' Come From? New Evidence Could Solve The COVID Mystery

Source: <https://www.sciencealert.com/where-does-brain-fog-come-from-new-evidence-could-solve-the-mystery>

July 06 – A small new study published Tuesday by scientists at the US National Institutes of Health suggests that the immune response triggered by [coronavirus](#) infections damages the brain's blood vessels and could be responsible for long COVID symptoms.

The paper, [published in the journal Brain](#), was based on brain autopsies from nine people who died suddenly after contracting the [virus](#).

Rather than detecting evidence of [SARS-CoV-2](#) in the brain, the team found it was the people's own [antibodies](#) that attacked the cells lining the brain's blood vessels, causing inflammation and damage.

This discovery could explain why some people have lingering effects from infection including headache, fatigue, loss of taste and smell, and inability to sleep as well as "brain fog" – and may also help devise new treatments for long COVID.

NIH scientist Avindra Nath, the paper's senior author, said in a [statement](#): "Patients often develop neurological complications with [COVID-19](#), but the underlying pathophysiological process is not well understood."

"We had previously shown blood vessel damage and inflammation in patients' brains at autopsy, but we didn't understand the cause of the damage. I think in this paper we've gained important insight into the cascade of events."

The nine individuals, aged 24 to 73, were selected from the team's prior study because they showed evidence of blood vessel damage in their brains based on scans.

Their brains were compared to those from 10 controls, with the team examining neuroinflammation and immune responses using a technique called immunohistochemistry. The scientists discovered that antibodies produced against COVID-19 mistakenly targeted cells that form the "blood-brain barrier" – a structure designed to keep harmful invaders out of the brain while allowing necessary substances to pass. Damage to these cells can cause leakage of proteins, bleeding and clots, which elevates the risk of stroke.

The leaks also trigger immune cells called macrophages to rush to the site to repair damage, causing inflammation.

The team found that normal cellular processes in the areas targeted by the attack were severely disrupted, which had implications for things such as their ability to de-toxify and to regulate metabolism.

The findings offer clues about the biology at play in patients with long-term neurological symptoms, and can inform new treatments – for example, a drug that targets the build-up of antibodies on the blood-brain barrier. "It is quite possible that this same immune response persists in long COVID patients resulting in neuronal injury," said Nath.

This would mean that a drug that dials down that immune response could help those patients, he added. "So these findings have very important therapeutic implications."



## Study shows convalescent plasma doesn't benefit severely ill patients hospitalized with COVID-19

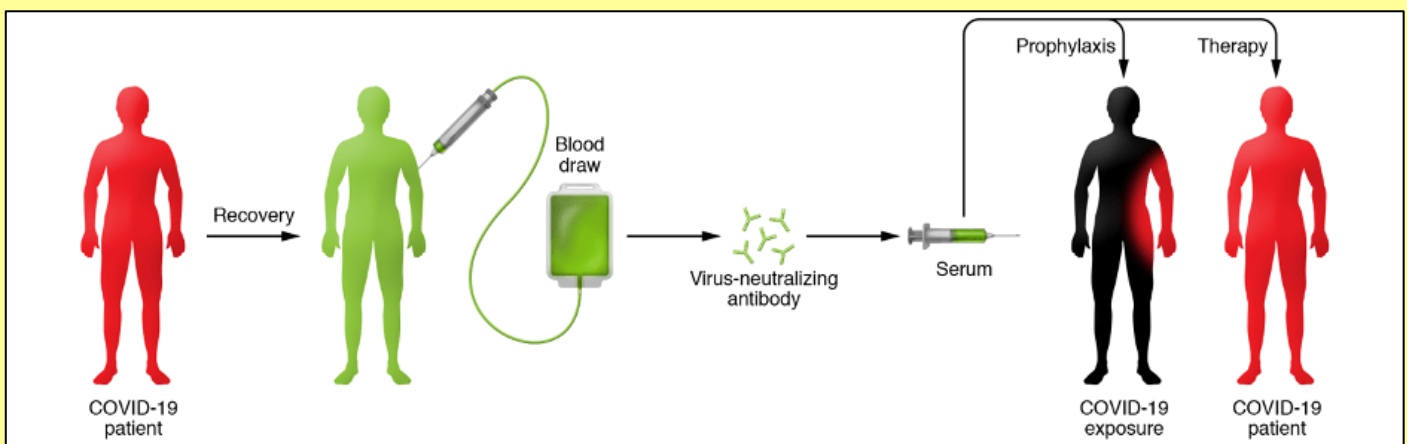
*CHEST*; July 05, 2022 | Vanderbilt University Medical Center

Source: <https://www.eurekalert.org/news-releases/957871>

Convalescent plasma, widely given to severely ill patients hospitalized with COVID-19 during the pandemic, does not improve their ability to survive or recover, according to a national clinical trial led by Vanderbilt University Medical Center and published in the journal *CHEST*.

The multicenter blinded, randomized placebo-controlled, Passive Immunity Trial for our Nation (PassITON), looked at the efficacy and safety of COVID-19 convalescent plasma therapy for adults hospitalized with moderate to severe COVID-19 within 14 days of the onset of symptoms.

The rationale for using convalescent plasma for acute viral infections like COVID-19 has been that transfusing the plasma component of blood from a patient who has recently recovered from the same disease to a patient early in the stage of infection might provide the currently infected patient with antibodies against the infecting virus, helping them recover more quickly.



“During this trial, we were fortunate to have tremendous collaboration among thousands of people across the country, including patients, families, clinicians, study personnel at 25 hospitals and a wonderful team at VUMC,” said Wesley Self, MD, MPH, associate professor of Emergency Medicine, vice president for Clinical Research Networks and Strategy at VUMC and lead author of the study. “We asked a very specific question in this study: At time of hospital admission when a patient is severely ill with COVID, does the transfusion of convalescent plasma available to clinicians in the U.S. improve the ability to recover and survive? The answer is clearly no.”

“Providing passive immunity with convalescent plasma does not appear to benefit patients once their illness has progressed to the point of needing treatment in the hospital. Despite receiving convalescent plasma with a higher titer of neutralizing antibodies, the therapy did not help hospitalized patients,” said Todd Rice, MD, MSc, associate professor of Medicine, vice president for Clinical Trial Innovations and Operations at VUMC, and senior author of the study.

In the study **960 adults hospitalized** with COVID-19 were randomized into two groups — those receiving one unit of convalescent therapy and those receiving placebo. The results showed that the two groups had nearly identical clinical outcomes; at 28 days following treatment, 18.5% of patients in the convalescent plasma group and 17.2% of patients in the placebo group had died.

The study was led by the Vanderbilt Institute for Clinical and Translational Research (VICTR). It was funded at the beginning by the Dolly Parton COVID-19 Research Fund, then expanded into a multicenter study in September 2020 with funding from the National Center for Advancing Translational Sciences of the National Institutes of Health.

COVID-19 caused about 450 million people to become ill and 6 million deaths worldwide during the first two years of the pandemic. From the beginning, convalescent plasma was heralded as a potentially promising treatment.

But rather than administering an unproven therapy to patients, the clinical and research enterprise at VUMC decided to take a safe and controlled approach, looking at the evidence behind the idea that convalescent plasma would help.

“We decided instead of jumping on the ship and giving convalescent plasma to all of our COVID-19 patients at Vanderbilt, we were going to do a proper trial,” Self said.



“VUMC is a true academic medical center, and conceptualized, coordinated and/or participated in a large number of randomized clinical trials,” said Jill Pulley, MBA, research professor of Medicine and VICTR executive director. “This trial investigated an unproven intervention...it was beautifully executed, and although the results are unfortunate — we wish the therapy did work — they illustrate why trials are always needed,” she said.

Self said although the VUMC study is the most well-controlled trial of COVID-19 convalescent plasma in hospitalized patients, other studies have been conducted over the past couple of years showing similar results — that convalescent plasma as a therapy for those hospitalized with COVID-19, at least as currently deployed, doesn't work. “It's solid evidence,” he said.

For more than a year VUMC enrolled patients, and with the help of Blood Assurance, a blood donation center, developed its own “pipeline” of convalescent plasma.

Jillian Rhoads, PhD, senior scientific project manager at VICTR, said that blood for the convalescent plasma trial was collected at VUMC and shipped across the country to the other 24 hospitals participating in the study.

“So many generous Vanderbilt employees and community members donated plasma and truly kept our study going,” she said. “It was amazing that they were able to give enough plasma to enable a nearly 1,000-patient, 25-center trial.”

## Another universal coronavirus vaccine readies for human trials

Source: <https://newatlas.com/science/universal-coronavirus-vaccine-mosaic-nanoparticle-human-trials-caltech/>

July 06 – As scientists frantically chase a rapidly mutating SARS-CoV-2 virus by [trying to update current COVID vaccines](#) to better target circulating variants, a huge project is bubbling away in the background. The goal is to create a universal coronavirus vaccine designed to generate such broad immunity it will protect people from all currently circulating strains of SARS-CoV-2, as well as any future variants yet to emerge. And there are several compelling candidates in the pipeline.

A new study published in the journal *Science* is reporting promising results from preclinical studies led by researchers at Caltech. The vaccine utilizes a novel mosaic nanoparticle technology to protect not only against SARS-CoV-2 but also the original SARS, and several common cold coronaviruses.

The experimental vaccine focuses on a particular genera of coronaviruses called betacoronaviruses. These are the most clinically relevant types of coronaviruses to humans, including SARS, MERS, SARS-CoV-2, and two coronaviruses linked to the common cold - OC43 and HKU1.

Pamela Bjorkman, a Caltech researcher leading the project, said generating broad immunity against the entire group of betacoronaviruses should offer protection from new viruses that could emerge in the future. And considering we've had three dangerous viruses emerge from the betacoronavirus family over the past 20 years, it is crucial to get ahead of what could be the next pandemic.

“What we're trying to do is make an all-in-one vaccine protective against SARS-like betacoronaviruses regardless of which animal viruses might evolve to allow human infection and spread,” said Bjorkman. “This sort of vaccine would also protect against current and future SARS-CoV-2 variants without the need for updating.”

The Caltech vaccine uses nanoparticle scaffolds to attach a number of different betacoronavirus fragments. Eight different betacoronaviruses are targeted by the vaccine: SARS-CoV-2, and seven other betacoronaviruses currently only circulating in animals but all holding the potential for mutating into a form that could infect humans in the future.

The vaccine does not focus on the traditional coronavirus spike protein, but instead uses viral fragments called receptor-binding domains (RBDs). These are parts of the virus that act as a kind of interface between the spike protein and ACE2 receptors in human cells. RBDs are like the anchor that links the virus up with the human receptor.

And recent animal studies testing this novel vaccine, dubbed **Mosaic-8**, have delivered impressive results. Across a number of mouse and primate trials, the researchers found the vaccine successfully protects against most betacoronavirus strains.

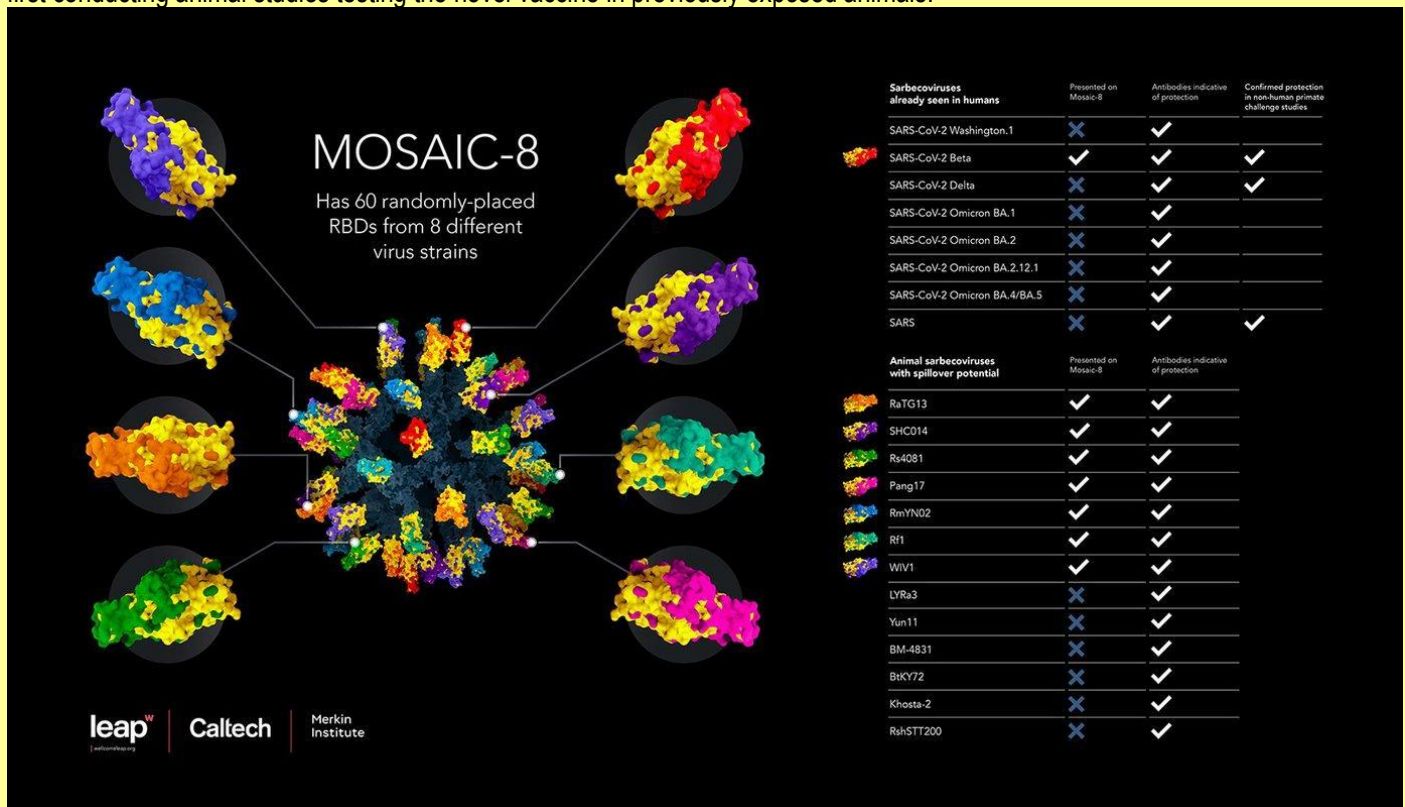
Interestingly, the researchers tested the Mosaic-8 design against a nanoparticle solely loaded with a SARS-CoV-2 RBD. When mice were exposed to the original SARS virus, only the animals given the Mosaic-8 vaccine survived. This suggests the combination of eight different antigens does potentially generate broad cross-protective immunity against different types of betacoronaviruses.

“Animals vaccinated with the mosaic-8 nanoparticles elicited antibodies that recognized virtually every SARS-like betacoronavirus strain we evaluated,” noted study co-author Alexander Cohen. “Some of these viruses could be related to the strain that causes the next SARS-like betacoronavirus outbreak, so what we really want would be something that targets this entire group of viruses. We believe we have that.”

Thanks to a big injection of funding from The Coalition for Epidemic Preparedness Innovations (CEPI), Mosaic-8 is on track to move to Phase 1 human trials very soon. Because it is 2022 and most people



in the world have either already received a COVID-19 vaccine or been previously infected with SARS-CoV-2, the researchers are first conducting animal studies testing the novel vaccine in previously exposed animals.



This infographic illustrates the new vaccine, composed of RBDs from eight different viruses. The table shows the broad spectrum of SARS-CoV-2 variants and related coronaviruses that the vaccine induces protection against (*Wellcome Leap, Caltech, and Merkin Institute*)

“There have already been three serious coronavirus epidemics or pandemics in the twenty-first century – and COVID-19 continues to have a devastating impact on the world’s health, society, and economy,” noted [Richard Hatchett, CEO of CEPI](#). “The creation of vaccines that could provide broad protection against emerging COVID-19 variants and future coronavirus threats would not only help mitigate the damaging effects of another COVID-19-like pandemic, it could also help reduce the time taken and funding spent continually updating vaccine formulations.”

Mosaic-8 is certainly not the only universal coronavirus vaccine currently in development. There are [no less than 10 different research groups](#) working with different strategies to produce a coronavirus vaccine that protects from current and future variants.

The US Army, for example, [earlier this year reported successful preclinical results](#) testing a unique ferritin nanoparticle with the capacity of holding 24 different coronavirus antigens. This research has already commenced the first phase of human trials and results are expected soon.

●► The new study was published in the journal [Science](#).

## Omicron Subvariants BA.4 and BA.5 Are More Elusive to Immune System

Source: <https://www.genengnews.com/news/omicron-subvariants-ba-4-and-ba-5-are-more-elusive-to-immune-system/>

July 07 – The latest omicron subvariants of SARS-CoV-2—including BA.4 and BA.5—now make up the majority of [COVID-19](#) cases being sequenced in the United States. And, the first data on them are causing concern for some experts. For example, Eric Topol, MD, faculty in the department of medicine at Scripps Research, started a recent blog post with this sentiment: “The Omicron sub-variant BA.5 is the worst version of the virus that we’ve seen.” It takes immune escape, he continues, already extensive, to the next level, and, as a



function of that, enhanced transmissibility—well beyond Omicron (BA.1) and other Omicron family variants that we've seen (including BA.1.1, BA.2, BA.2.12.1, and BA.4).

Compared to their predecessors, the newest subvariants carry additional mutations in their spike proteins which have been hypothesized to allow the variants to further evade neutralizing antibodies. To look specifically at this, new research analyzed the variants' ability to evade antibodies.

"The virus is continuing to evolve, as expected, and it is not surprising that these new, more transmissible subvariants are becoming more dominant around the world," says David D. Ho, MD, director of the Aaron Diamond AIDS Research Center and professor of medicine at Columbia University Vagelos College of Physicians and Surgeons. "Understanding how currently available vaccines and antibody treatments stand up to the new subvariants is critical to developing strategies to prevent severe disease, hospitalizations, and deaths—if not infection."

The researchers studied the ability of antibodies from individuals who received at least three doses of an mRNA vaccine, or got two shots and were then infected with omicron, to neutralize the new subvariants. (Ho's team did not look at individuals who had not received a booster shot, because a previous study found that two doses provide little protection against infection by earlier omicron variants.)

The systematic antigenic analysis of the Omicron subvariants revealed that while BA.2.12.1 is only modestly more resistant than BA.2 in individuals who were vaccinated and boosted, BA.4/5 was at least four times more resistant than its predecessor.

More specifically, the authors write that a BA.2.12.1 is 1.8-fold more resistant to sera from vaccinated and boosted individuals than BA.2. "However, BA.4/5 is substantially (4.2-fold) more resistant and thus more likely to lead to vaccine breakthrough infections."

The researchers then analyzed the effect of specific mutations. They found that a mutation at spike residue L452—found in both BA.2.12.1 and BA.4/5—facilitates escape from some antibodies directed to the so-called class 2 and 3 regions of the receptor-binding domain.

In addition, the F486V mutation found in BA.4/5 facilitates escape from certain class 1 and 2 antibodies but compromises the spike affinity for the viral receptor. The R493Q reversion mutation, however, restores receptor affinity and consequently the fitness of BA.4/5.

In addition, the scientists tested the ability of 19 monoclonal antibody treatments to neutralize the variants and found that only one of the available antibody treatments, bebtelovimab, remained highly effective against both BA.2.12.1 and BA.4/5.

"Our study suggests that as these highly transmissible subvariants continue to expand around the globe, they will lead to more breakthrough infections in people who are vaccinated and boosted with currently available mRNA vaccines," Ho says.

Though the current study suggests that the new variants may cause more infections in vaccinated individuals, the vaccines continue to provide good protection against severe disease.

"Efforts in the United States to develop new vaccine boosters aimed at BA.4/5 may improve protection against infection and severe disease," Ho says. "In the current environment, though, we may need to look toward developing new vaccines and treatments that can anticipate ongoing evolution of the SARS-CoV-2 virus."

●► The research is published in *Nature*, in the paper, "[Antibody evasion by SARS-CoV-2 Omicron subvariants BA.1.12.1, BA.4 and BA.5.](#)"

## Infectious and deadly **Marburg virus** detected in Ghana for the first time

Source: <https://newatlas.com/health-wellbeing/marburg-virus-detected-ghana-africa-who/>

July 07 – A statement from the World Health Organization (WHO) has announced the discovery of two potential cases of Marburg Virus Disease (MBV) in Ghana. Pending further lab work, they could be the first cases of this highly infectious disease ever found in the West African country.

The Marburg virus is a member of the Filoviridae family of virus. Similar to the Ebola virus, infection with Marburg results in severe haemorrhagic fever with fatality rates ranging from 20 to 80 percent.

According to the WHO, the two potential new cases of MBV came from the southern Ashanti region of Ghana. The subjects were taken to a local hospital in the region with symptoms including diarrhoea, fever, nausea and vomiting.

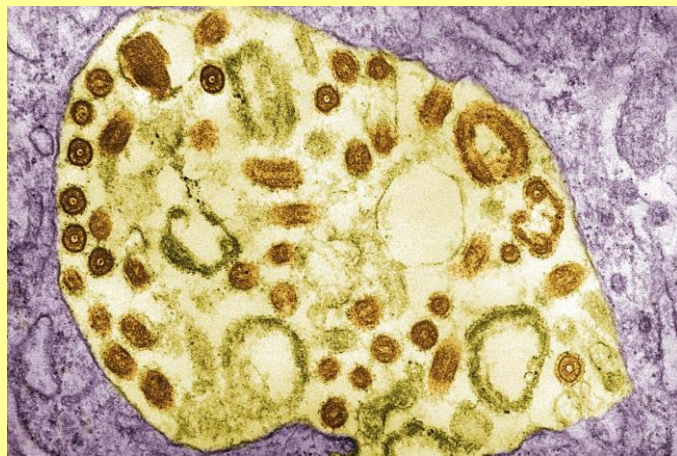
The two patients were unrelated and subsequently died from their illness. A preliminary analysis of samples taken from the patients delivered positive results for the Marburg virus. Standard WHO procedure is to now send those samples to a central WHO facility in Senegal for confirmation.





Francis Kasolo, a WHO doctor in Ghana, said contact tracing has commenced and an outbreak response is being prepared.

“The health authorities are on the ground investigating the situation and preparing for a possible outbreak response,” Kasolo said.



“We are working closely with the country to ramp up detection, track contacts, be ready to control the spread of the virus.”

The Marburg virus has only been detected in West Africa on one occasion prior to this. In late 2021, a farmer in Guinea died from an infection, however, no further cases were detected following close WHO surveillance for several months.

Since first appearing in the German town of Marburg in 1967, there have been little more than a dozen outbreaks of this deadly infection. The worst outbreak took place in 2004/05 in Angola. By the time the outbreak was brought under control, 252 people had been infected and 90 percent ultimately died. Marburg virus is less understood than its more well-known cousin Ebola, however the two viruses share similar traits. Infection occurs through bodily fluids and incubation can span anywhere from five to 21 days.

Severe haemorrhagic signs appear seven days after symptoms arise and there are currently no established treatments, vaccines, or antivirals. Global vaccine charity Gavi last year [flagged Marburg](#) as one of several viruses that could potentially cause the next global pandemic. Despite it not being transmitted through aerosols, Gavi noted its long incubation time means it could quickly spread with increased global travel.

“As outbreaks in Europe and the US have already shown, increasing globalization and international travel mean that the risk for global spread is high, especially when the incubation period could be up to three weeks,” Gavi explained. “This could be disastrous given its high death rate.”

## What Makes a Pandemic Take Off?

Source: <https://www.homelandsecuritynewswire.com/dr20220707-what-makes-a-pandemic-take-off>

July 07 – In December of 2021, biomedical scientist Alina Deshpande had the idea of searching in historical disease records for potential “black swan” anomalous disease outbreaks. Pulling our research team at [Los Alamos National Laboratory](#) together, she hypothesized that there might be common features among exceptionally large outbreaks that, if identified, could serve as warning signs of future pandemics. We know that if a newly mutated coronavirus germ, or pathogen, infects a person who already has antibodies that can recognize and neutralize it, the pathogen might stop spreading. Or if a new pathogen infects a person who is isolated and dies before they interact with another person, well then, the disease stops there. Pathogen fitness, host susceptibility and environmental conditions are three major considerations to disease spread. Seeking to understand if each of these factors is equally important, we tackled this question using a visual analytics tool Deshpande had developed in 2012 called [AIDO](#) (Analytics for Investigation of Disease Outbreaks). We designed AIDO to help researchers understand and respond to new disease outbreaks by comparing them to historical ones. The tool includes a database of detailed information about more than 600 outbreaks of 40 distinct diseases—measles, cholera, Ebola and more. We narrowed the black swan collection to a subset of 32 potential diseases in the database and we excluded SARS-CoV-2 data, the virus that causes COVID-19, so that we could better understand any clues from the past that might have foretold the current pandemic.

●► Read the rest of the story as it appeared in [STAT](#).

## Russian MoD: Purpose of Biden-Financed Bio-Projects Was to Create Infections That Damage Agriculture

Source: <https://www.farsnews.ir/en/news/14010417000102/Rssian-MD-Prpse-f-Biden-Financed-Bi-Prjecs-Was-Creae-Infecins-Tha>

July 08 – The main focus of the research projects involving Pentagon military contractor Black & Veatch and Metabiota, the Hunter Biden investment fund-linked biotech company, were concentrated around



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quarantine infections that could damage nations' agricultural sectors, Igor Kirillov, the chief of Russia's Radiation, Chemical and Biological Defense Troops indicated.

"Take note of the report for the US military by Black & Veatch and Metabiota. In accordance with this document, 'veterinary projects' with the code 'TAP' were implemented simultaneously with the 'UP' series projects in Ukraine. Their main focus was economically significant quarantine infections, capable of causing damage to the agriculture of individual nations and entire regions, such as galanders, African and classical swine fever, highly infectious pathogenic avian influence, and Newcastle Disease," Kirillov said in a



briefing Thursday in Moscow, Sputnik reported.

The Pentagon appeared particularly interested in African swine fever, according to the Russian MoD's analysis, with the pathogen studied under two separate projects.

"The TAP-3 project is aimed at studying the spread of the African swine fever pathogen through wild animals, under which the migration routes of wild boars in Ukraine were studied. Under the TAP-6 project, this process was scaled up to the countries of Eastern Europe," Kirillov explained.

The RCBD Troops commander specified that the research into populations of carriers of potentially dangerous zoonotic infections was conducted by scientists from the University of Florida's Emerging Pathogens Institute in areas of Western and central Ukraine, as well as territories bordering both Russia and Belarus.

This research has not been without its poisonous 'fruit', Kirillov indicated, pointing to the worsening pathological situation as it relates to African swine fever across Eastern Europe, as detailed by World Organization for Animal Health data, which has found that since 2014, disease outbreaks have been recorded in the Baltic states (more than 12,000 cases), and Poland (13,000+ cases), with economic losses from the outbreaks estimated at over 2.4 billion euros (\$2.44 billion US).

Kirillov said that the Biden-linked Metabiota stands out even among the other Western government and corporate actors involved in dubious biological research in Ukraine.

"The available materials indicate that this company served as a cover for solving tasks that were dubious from the point of view of international law and used by the US political elite to carry out non-transparent financial activities in various regions of the world," Kirillov said.

"To give a specific example, Metabiota was involved in the response to the Ebola epidemic in West Africa. The activities of the company's employees raised questions from the World Health Organization in terms of their compliance with biosafety requirements," the senior officer said, pointing to a report by an international group of experts who took part in the fight against the Ebola virus in Sierra Leone in 2015.

The report indicated that in addition to failing to comply with regulations on treating patients, Metabiota workers concealed the Pentagon's involvement in the work, effectively allowing the biotech company



to be used as an arm of the Defense Department, which sought to isolate highly virulent strains of the Ebola virus among the infected and deceased and to export these strains back to the United States.

"The Pentagon contractor's heightened interest in the Ebola virus is not accidental: the disease is known to be among the most pathogenic for human beings. During the outbreak that began in 2014, 28,000 people fell ill, with 11,000 dying, for a lethality rate of about 40 percent," Kirillov emphasized.

The Russian military, he said, has also recovered documents detailing Metabiota's plans to work with the Science and Technology Center in Ukraine, the Kiev-headquartered international intergovernmental organization with offices across the former Soviet space, to study the Ebola virus on Ukrainian territory. Kirillov presented a slide with an image of a funding request for the diagnosis of dangerous pathogens, including Ebola, in Ukraine, with the research expected to take place at the Mechnikov Anti-Plague Institute in Odessa.

"Taking into account that the disease is not endemic, and, moreover, has never been recorded in Ukraine, questions naturally arise as to why such studies are needed and their true purpose," the commander said.

At Thursday's briefing, Kirillov also revealed that the RCBD Troops were able to recover a key conceptual document on the activities of the Defense Threat Reduction Agency (DTRA) for the period from 2005 to 2016.

The detailed 150 page document, prepared by a group of US experts, "contains information on the assessment of the effectiveness of healthcare systems, veterinary medicine and biosecurity," in Ukraine, and serves as a "conceptual document for further planning of the Pentagon's military-biological activities in the country, including conclusions on the implementation of its main directions", Kirillov said.

Quoting from the document, the officer indicated that the Pentagon was aware that Ukraine had no legislation in place regarding the control of highly dangerous pathogens, and that there were "significant gaps" in its biosecurity, with funding insufficient for biological laboratories to respond effectively to public health emergency.

The report showed that the DTRA was aware of numerous gross safety violations at the Eastern European country's biological facilities, from non-locking fencing systems to broken or deactivated pathogen access control systems, lack of alarm systems, etc.

The document positively assessed the DTRA's own role in Ukraine, boasting its success in transporting Ukraine's national collection of microorganisms to the United States, as well as the implementation of projects studying dangerous and economically significant infections.

"The appendix to the documents contains ambiguous comments regarding the Ukrainian biothreat reduction program's sponsors and executors who have nothing to do with biosecurity issues. Specifically, the Soros Foundation is mentioned," Kirillov said.

"As we have already noted, Ukraine and other nations in the post-Soviet space have become a biological weapons testing ground not only for the United States, but also for their allies in the NATO bloc, particularly Germany," Kirillov indicated as he presented new information about the German military's biological activities in the Eastern European country.

According to the Radiation, Chemical and Biological Defense Troops' analysis, Bundeswehr specialists paid special attention to the causative agent of the Crimean Congo fever, engaging in research screening the susceptibility of Ukrainians to the disease through the generalization of demographic, epidemiological and clinical data to try to identify new regional virus genotypes and select strains that cause latent clinical forms of the disease.

Kirillov said that that a study of Crimean Congo fever's natural foci was conducted under the guise of 'improving Ukraine's epidemiological surveillance' at the Kiev-based Institute of Veterinary Medicine, and the aforementioned Mechnikov Anti-Plague Institute.

"...Pay special attention to lethal cases of infection with the Crimean-Congo fever, as this will allow us to isolate virus strains from the deceased with maximum pathogenicity and virulence for human beings," Kirillov said, quoting from a recovered report.

The disease has a lethality rate of up to 30 percent, and requires lengthy, costly treatment and prevention measures.

Kirillov also provided new details on US microbiologists' research into tick-borne infections, with this work funded by the DTRA within the framework of projects UP-1 and UP-8. A separate, additional project studying ixodid ticks, hosts of a number of dangerous infections, including Crimean Congo fever, tularemia and West Nile virus, was implemented by scientists from Texas A&M University. The ticks were collected mostly from regions of Southeastern Ukraine, with natural foci for infection similar to neighboring Russian territory, according to Kirillov's information.

Coincidentally, the officer said, this work "coincided with a rapid increase in the incidence of tick-borne borreliosis among the Ukrainian population, as well as an increase in the number of ticks in a number of Russian regions bordering Ukraine". The Russian MoD and scientists are investigating the matter, according to Kirillov. Kirillov also provided new data on the state of the health of Ukrainian servicemen who laid down their arms and surrendered to Russian forces in the course of the ongoing conflict. A significant percentage are suffering from diseases, he said.



"33 percent of surveyed servicemen were ill from hepatitis A, over four percent had renal syndrome, 20 percent had West Nile virus. These figures are significantly higher than the average [for Ukraine]. Given the fact that these diseases were actively studied by the Pentagon in the framework of its Ukrainian projects, there is reason to believe that personnel of the Ukrainian Armed Forces were involved in experiments as volunteers to assess tolerance to dangerous infectious diseases," Kirillov said.

"According to available information, during inpatient treatment of Ukrainian Armed Forces personnel at medical institutions, the absence of a therapeutic effect to the introduction of antibacterial drugs has been recorded. High concentrations of antibiotics, including sulfonamides and fluoroquinolones, have been detected in their blood," the officer said.

"This may indicate the prophylactic use of antibiotics and the training of personnel to carry out tasks in conditions of biological contamination, for example, the causative agent of cholera, which indirectly confirms information held by the Russian Ministry of Defense on the planned use of biological agents by Ukrainian special forces," Kirillov concluded.

## World Health Network declares Monkeypox a pandemic

Source: <https://www.livemint.com/news/world/world-health-network-declares-monkeypox-a-pandemic-11655951549860.html>

June 24 – The WHN announcement comes ahead of WHO meeting to be held on 23 June to decide on their monkeypox outbreak designation. Even with death rates much lower than smallpox, unless actions are taken to stop the ongoing spread—actions that can be practically implemented—millions of people will die and many more will become blind and disabled, it said.

With 3,417 confirmed Monkeypox cases reported across 58 countries, World Health Network (WHN) has announced that they are declaring the current monkeypox outbreak a pandemic.

The outbreak is rapidly expanding across multiple continents and will not stop without concerted global action, [it said in a statement](#).

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WHN said that the essential purpose of declaring Monkeypox a pandemic is to achieve a concerted effort across multiple countries or over the world to prevent widespread harm.

"There is no justification to wait for the monkeypox pandemic to grow further. The best time to act is now. By taking immediate action, we can control the outbreak with the least effort, and prevent consequences from becoming worse. The actions needed now only require clear public communication about symptoms, widely available testing, and contact tracing with very few quarantines. Any delay only makes the effort harder and the consequences more severe", said Yaneer Bar-Yam, PhD, President of New England Complex System Institute and co-founder of WHN.

"The WHO needs to urgently declare its own Public Health Emergency of International Concern (PHEIC)—the lessons of not declaring a PHEIC immediately in early January 2020 should be remembered as a history lesson of what acting late on an epidemic can mean for the world," said Eric Feigl-Ding, PhD, Epidemiologist and Health Economist, and co-founder of WHN.

"The first 18 months of the Covid pandemic showed us that stopping the virus is a cost effective strategy that aligns health and economic outcomes. Monkeypox is much easier to stop. This will provide a level of visibility, enabling businesses to project their societies and economies into the future", said Cecile Phillips, Economist and President of, l'Institut économique Molinari.

The WHN is urging immediate action by the WHO and national CDC organizations, it said.

"Early action will have a greater impact with smaller interventions. If effective action is taken now, larger, more disruptive interventions will not be necessary. Health authorities and governments should learn from past mistakes in delaying response, it said.

Monkeypox and smallpox come from the same virus family, called Orthopoxvirus. Monkeypox is a viral infection that originated in rodents and primates and transmitted to people. It was found in Africa, mostly around tropical rainforest regions but has now spreading across the world especially in Western countries. According to WHO, Monkeypox typically presents clinically with fever, rash and swollen lymph nodes and may lead to a range of medical complications. Monkeypox is usually a self-limited disease with symptoms lasting from 2 to 4 weeks.

Evidence supports many different routes of monkeypox transmission, including physical contact (touching an infected individual, especially the rash / postules), contact with contaminated clothing, bedding and objects, breathing airborne particles, and intimate contact/sex.



While the majority of identified early cases are predominantly among those who identify as gay, bisexual, or men who have sex with men. Accordingly, the UN health agency also recently issued an important public health advisory for gay, bisexual and other men who have sex with men.

## WHO: Monkeypox outbreak not yet a global public health emergency

Source: <https://www.statnews.com/2022/06/25/who-monkeypox-outbreak-not-yet-a-global-health-emergency/>



June 25 – The World Health Organization on Saturday declined to declare [the unprecedented monkeypox outbreak](#) that has spread around the world a public health emergency as of now.

A public health emergency of international concern, or PHEIC, grants the WHO director-general certain powers, such as the ability to recommend how countries should respond. While it's a legal lever the agency can use, it's also a tool that can grab public attention and steer it to try to address burgeoning health threats. Such a declaration could further rally donors and member countries to increase funding.

The WHO can revisit its decision. In January 2020, for example, the WHO didn't declare the emerging coronavirus crisis a PHEIC, only to do so a week later.

The announcement came after a WHO emergency committee met Thursday to discuss [the outbreak](#). Some 3,000 cases have been documented since mid-May, largely in Europe and the Americas — outside the regions in West and Central Africa where the virus is endemic and has animal reservoirs. Most of the cases have been in gay, bisexual, and other men who have sex with men, with many occurring in men who have had multiple recent sex partners. One death has been reported, in an immunocompromised person.

Despite the PHEIC decision, **WHO Director-General Tedros Adhanom Ghebreyesus** sought to underscore the seriousness of the threat, noting the convening an emergency committee in the first place was a sign of that. [In a statement](#), Tedros noted that the outbreak “is clearly an evolving health threat” that “requires our collective attention and coordinated action now.” But he said that the committee that advised him on the issue decided that the outbreak did not yet constitute a PHEIC, and he agreed.

“What makes the current outbreak especially concerning is the rapid, continuing spread into new countries and regions and the risk of further, sustained transmission into vulnerable populations including people that are immunocompromised, pregnant women, and children,” Tedros said in the statement. “That is why it is urgent that all member states, communities and individuals take the recommendations of the committee for stepped-up surveillance, improved diagnostics community engagement and risk communication, and the appropriate use of therapeutics, vaccines, and public health measures including contact tracing and isolation.”



In a summary of the committee's discussion, the WHO said the group acknowledged that facets of the outbreak are unusual and that the response clearly necessitated international efforts, but that “while a few members expressed differing views,” the committee reached a consensus that the outbreak did not amount to a PHEIC. The committee said it should reconsider the decision depending on whether cases accelerate in the next few weeks; more countries start reporting cases; if there are upticks in cases in other groups of people, including sex workers; and if there are any signs the virus is becoming more transmissible or starts causing more severe illness.

A PHEIC (pronounced like “fake”) describes an extraordinary or unusual health threat that poses risks to other places through international spread and requires a coordinated response. PHEICs are typically declared when urgent international action is needed. A PHEIC is not the same thing as a pandemic. The former is a technical mechanism the WHO can employ, while the latter is a rhetorical acknowledgement of vast global spread of a disease. When the WHO started referring to Covid-19 as a pandemic, for example, it was a reflection of the scale of the crisis, not a move that granted the agency any more powers.

The WHO has been working to try to ensure the fair distribution of vaccines and drugs that can prevent and treat monkeypox. Those vaccines and treatments are in limited supply and countries in Europe and the Americas have been trying to purchase more of them. In the past, monkeypox infections seen outside the countries where the virus is endemic have typically been imported cases or have involved limited household transmission. This is the first time the virus has started circulating more widely in other countries.

Gregg Gonsalves, an associate professor of epidemiology at Yale School of Public Health, disagreed with WHO's decision, which he called a “punt.” He said he felt that the criteria had been met and that a PHEIC declaration could have pushed public health authorities to step up their response and coordinate better across countries.

Gonsalves served as an adviser [to the emergency committee](#), but did not have a say in whether to recommend a PHEIC be declared.



“An expanding outbreak of this disease is not good for anyone,” he said, noting that African public health officials have been [saying for years](#) that monkeypox needs more global attention. “Right now, we are not on top of our game with monkeypox, at least in the United States,” he added, pointing to the patchy surveillance system and limited vaccine deployment.

Monkeypox infections can lead to painful lesions and rashes, including vesicles forming on the palms. Some of the cases in the current outbreak have been mild and diverged from textbook cases of the infection, with people having just a few genital or anal lesions instead of broader rashes. Many of the cases in the current outbreak have been comparatively mild, though some patients have been hospitalized for pain management as the infection runs its course.

The virus is spread through close contact, mainly through respiratory droplets or direct exposure to lesions or to contaminated clothing or linens.

Some countries have begun vaccinating contacts of people with infections, and some have recently expanded eligibility criteria, with health officials in the United Kingdom, parts of Canada, and [New York City offering](#) vaccines for broader groups of men who have sex with men.

Though documented case counts have recently surged, [genetic analyses](#) suggest that the virus [could have been circulating](#) among people at low levels for several years before taking off.

In the current outbreak, the United States has reported 200 monkeypox cases, though public health experts are concerned that number doesn't reflect the true breadth of the virus's spread. Germany has identified more than 675 cases, Portugal more than 300, and the United Kingdom more than 900.

South Africa on Thursday [also reported](#) a case in a person who had no recent travel history.

Separately, the United States announced Wednesday it had started [shipping monkeypox tests](#) to five commercial laboratory companies to expand testing. The nation's raw testing capacity [wasn't the key issue](#), but clinicians and advocates [had reported](#) the process to get a test — which involved contacting local health departments and a two-step testing regimen — was too complicated and made it difficult for individuals to find clinics willing to provide tests.

The PHEIC designation was created in an update to the International Health Regulations following the 2002-2003 SARS outbreak. The regulations, which are agreed to by WHO member states, are designed to help the world respond to public health threats while avoiding “unnecessary interference with international traffic and trade,” according to the WHO.

The first PHEIC was declared for the 2009 H1N1 flu pandemic, and others have included Ebola outbreaks and the Zika epidemic. The two active PHEICs are for Covid-19 and the continued transmission of polio.

**EDITOR'S COMMENT:** We are getting close to 10,000 cases in 74 countries! **WHEN?**

## 'Myriad' Dermatologic Reactions After COVID-19 Vaccination

Source: <https://www.medscape.com/viewarticle/976691>

July 06 — Individuals given COVID-19 vaccination may experience a wide range of dermatologic reactions, some of which may be life-threatening, reveals a prospective Indian study that suggests histopathological assessment is key to understanding the cause.

Studying more than 130 patients who presented with vaccine-related dermatologic reactions, the researchers found that **the most common acute adverse events were acute urticaria, generalized pruritus, and maculopapular rash.**

Dermal hypersensitivity reactions occurred **within 3 days of vaccination, which suggests the culprit is an immediate type 1 hypersensitivity reaction**, said study presenter Alpana Mohta, MD, Department of Dermatology, Sardar Patel Medical College, Bikaner, Rajasthan, India. Most of the patients had received the AstraZeneca vaccine, she said.

The most common delayed events were pityriasis rosea and lichen planus, which occurred within 3 to 4 weeks of vaccination, and could be a result of delayed hypersensitivity, or a T-cell-mediated skin reaction caused by “molecular mimicry with a viral epitope,” Mohta said.

The research was presented at the British Association of Dermatologists (BAD) 2022 Annual Meeting on July 5.



Mohta said that, given the "surge" in the number of people who have been vaccinated, it is "imperative as dermatologists" to maintain a "very high index of suspicion to differentiate reactions caused by vaccination" from other causes, and a proper assessment should be performed in "every patient" who presents with a possible reaction.

She also emphasized that "since so many clinical [COVID-19] variants are being encountered," histopathological assessment could "help in better understanding the underlying pathophysiology" of every reaction.

Mohta began her presentation by explaining that India is running one of the "world's largest vaccination drives" for COVID-19, with almost 90% of adults fully vaccinated.

She added that studies have indicated that the incidence of cutaneous adverse reactions following COVID-19 vaccination ranges from 1.0% to 1.9%, and that dermatologists have encountered a "plethora" of related reactions.

Mohta emphasized that the "myriad presentations" of these reactions means that correlating clinical and pathological findings is "key" to understanding the underlying pathophysiology.

She and her colleagues therefore conducted a prospective, hospital-based study of patients who self-reported mucocutaneous adverse reactions from April to December 2021, within 4 weeks of receiving a COVID-19 vaccine.

They gathered information on the patients' signs and symptoms, as well as the date of vaccine administration and the type of vaccine given, alongside a detailed medical history, including previous allergies, prior COVID-19 infection, and any comorbidities.

The patients also underwent a clinical examination and laboratory investigations, and their cases were assessed by two senior dermatologists to determine whether the association between the adverse event and COVID-19 vaccination was likely causal.

Mohta said that 132 adult patients, with an average age of 38.2 years, were identified as having vaccine-related reactions.

This included 84 (63.6%) patients with a mild reaction, defined as resolving with symptomatic treatment; 43 (32.6%) patients with a moderate reaction, defined as extensive and lasting for more than 4 weeks; and five (3.8%) patients with severe reactions, defined as systemic and potentially life-threatening.

The mild group included 21 patients with acute [urticaria](#), with a mean onset of 1.2 days following vaccination, as well as 20 cases of maculopapular rash, with a mean onset of 2.4 days; 18 cases of pityriasis rosea, with a mean onset of 17.4 days; and nine cases of eruptive pseudoangioma, with a mean onset of 3.5 days.

There were 16 cases of lichen planus in the moderate group, with a mean onset of 22.7 days after COVID-19 vaccination; nine cases of [herpes zoster](#), with a mean onset of 15.3 days; and one case of pityriasis lichenoides et varioliformis acuta (PLEVA), among others.

The severe group included two cases of [erythroderma](#), with a mean onset of 9 days after vaccination; one case of drug rash with eosinophilia and systemic symptoms (DRESS), with a mean onset of 20 days; and one case each of [subacute cutaneous lupus erythematosus](#) (SCLE) and bullous pemphigoid, with mean onsets of 15 days and 14 days, respectively.

Turning to the histopathological results, Mohta explained that only 57 patients from their cohort agreed to have a [skin biopsy](#).

Results of those skin biopsies showed that 21 (36.8%) patients had vaccine-related eruption of papules and plaques, predominantly spongiotic dermatitis. This correlated with the clinical diagnoses of pityriasis rosea, maculopapular and papulosquamous rash, and DRESS.

Lichenoid and interface dermatitis were seen in 13 (22.8%) patients, which correlated with the clinical diagnoses of lichen planus, PLEVA, and SCLE. Eleven (19.3%) patients had a dermal hypersensitivity reaction, equated to the clinical diagnoses of urticaria, and eruptive pseudoangioma.

Mohta acknowledged that the study was limited by the inability to calculate the "true prevalence of vaccine-associated reactions," and because immunohistochemistry was not performed.

Session chair Saleem Taibjee, MD, Department of Dermatology, Dorset County Hospital NHS Foundation Trust, Dorchester, Dorset, United Kingdom, congratulated Mohta on her "very interesting" presentation, highlighting their "extensive experience in such a large cohort of patients."

He asked what type of COVID-19 vaccines the patients had received, and whether Mohta could provide any "insights into which patients you can safely give the vaccine again to, and those [to whom] you may avoid giving further doses."

Mohta said that the majority of the patients in the study received the AstraZeneca COVID-19 vaccine, as that was the one most commonly used in India at the time, with around 30 patients receiving the Indian [Covishield](#) version of the AstraZeneca vaccine. (The two-dose AstraZeneca vaccine, which is cheaper to manufacture and easier to store at typical refrigerated temperatures than mRNA-based vaccines, has been authorized by the World Health Organization, the European Medicines Agency, and over 50 countries, but has not been authorized in the United States.)

She added that none of the patients in the study with mild-to-moderate skin reactions were advised against receiving further doses," but that those with severe reactions "were advised not to take any further doses."



Consequently, in the case of mild reactions, "further doses are not a contraindication," Mohta said, but patients with more severe reactions should be considered on a "case by case basis."

## Detecting SARS-CoV-2 Variants Earlier in Wastewater

Researchers developed and deployed improved virus concentration protocols and deconvolution software that fully resolve multiple virus strains from wastewater. They detected emerging variants of concern up to 14 days earlier in wastewater samples and identify multiple instances of virus spread not captured by clinical genomic surveillance. The study provides a scalable solution for wastewater genomic surveillance that allows early detection of SARS-CoV-2 variants. [+ MORE](#)

## Russia finds another stage for the Ukraine "biolabs" disinformation show

By Filippa Lentzos and Jez Littlewood

Source: <https://thebulletin.org/2022/07/russia-finds-another-stage-for-the-ukraine-biolabs-disinformation-show/>



A research lab in Kyiv, Ukraine built by the Cooperative Threat Reduction Program. Credit: Defense Threat Reduction Agency

July 08 – For the first time since the Cuban government accused the United States of spraying its country with a crop-eating bug called [Thrips palmi in 1997](#), a Biological Weapons Convention member is invoking a special procedure to investigate alleged violations of the treaty. Once again, a country is accusing the US of nefarious activity. But this time it is Russia—building on its years-long campaign involving [largely debunked claims](#) about a US bioweapons program in Ukraine and other former Soviet republics—that is calling for the rarely used diplomatic procedure.

The move to trigger Article V of the bioweapons treaty represents a significant escalation of Russia's efforts to promote claims of illegal [US "biolabs" ringing its borders](#). Now the treaty's 184 member states will have to hold a special session this summer to hear the Russian allegations and the US response.

At the meeting, Russia will face substantial hurdles in convincing the world that its claims are true. Russia has already brought its assertions to the most prominent venue of international diplomacy, the United Nations Security Council. So far this year, the Council has met three times on supposed US





bioweapons in formal and informal sessions. The [UN](#), [independent media](#), and outside [experts](#) have concluded that the Russian documentation of its claims provides no indication that US-funded research and assistance to Ukrainian public and animal health labs support anything other than peaceful activities. And Ukraine, unlike Russia, makes annual reports to the Biological Weapons Convention on its activities, known as confidence building measures, [publicly available](#).

Nonetheless, the coming meeting of bioweapons treaty members will have important implications for a major upcoming review of the treaty, discussions about strengthening the agreement, and prospects for increasing peaceful international cooperation on biological issues. The meeting is an indicator of just how the scope of Russia's biological weapons disinformation has grown since it invaded Ukraine.

### Article V, again

Cuba made [numerous allegations](#) about the United States attacking it with bioweapons during the Cold War, but pursued only one in a formal diplomatic meeting. On October 21, 1996, a single-engine plane operated by the US State Department involved in anti-narcotics operations was flying over Cuba after [regular maintenance](#) in the United States. Cuba had allowed such flights in the past, but this time, the Cubans alleged, a civilian pilot flying below the US plane noticed something suspicious: The US plane had emitted some kind of smoke. While Washington said the plane was simply signaling to the civilian aircraft for safety reasons, Cuba concluded that what really happened was that the United States had [released](#) a plume of *Thrips palmi* insects over the country's agricultural fields. Several weeks later, the Cubans said, the insects were ravaging crops on the island in an infestation.

The experience of Cuba invoking Article V in the summer of 1997 proved underwhelming. Only 74 members of the treaty attended the meeting. They elected a committee (referred to as a "bureau") that included the United Kingdom as chair and Brazil, Canada, Iran, the Netherlands, Nigeria and Russia as vice-chairs. The committee was to consult on the provided information and, as far as possible, clarify and resolve Cuba's concerns. The committee was to report back to the convention's member states by the end of 1997. As the researcher Jonathan [Tucker recounted](#) in a 2011 analysis, eight treaty members, including allies of the United States like Canada, said they did not see a link between the US flight over Cuba and the country's subsequent infestation. Two of Cuba's fellow communist countries, China and Vietnam, "found it impossible to make a determination." According to Tucker, only North Korea supported the Cuban position.

In its December 1997 report, which was [not made public](#), the committee said that the technical complexity of Cuba's allegation, the time between the alleged incident and Cuba's request for an Article V meeting (known as a formal consultative meeting), and the lack of detailed information related to the matter, made it impossible to draw any consensus conclusions. The Article V process, however, worked as intended; it had provided a forum to bring a compliance issue to the attention of other treaty members. Moreover, in the view of the committee, the experience was further evidence that treaty members needed to agree to an effective means of strengthening the ability to assess compliance, something that has yet to happen.

### High profile disinformation

As the war in Ukraine morphed from risk to reality earlier this year, Russia's biological weapons disinformation campaign intensified and adopted a much higher political profile than it has had in [recent years](#). These days, instead of relatively obscure figures like the head of Russia's special forces for nuclear, biological and chemical protection or the chair of the parliament's defense committee making the accusations, President Vladimir Putin himself is [levelling them](#).

Moscow actively laid the [groundwork](#) for taking its disinformation campaign to new heights before invading Ukraine by pre-positioning its false narrative—making statements to the media, amplifying select tweets, and hacking journalists' accounts. On the diplomatic side, over the past few months, Russia has provided documentation to the Security Council and circulated *Notes Verbales* (diplomatic memos) to national missions to the UN in both New York and Geneva, supposedly providing evidence to back up its allegations of biological weapons activities in Ukraine.

Oddly, the consultation procedures under Article V of the bioweapons treaty are generally viewed as a way to discuss issues at a lower level before escalating to the Security Council. Russia has reversed this logic and is invoking Article V after failing to gain any substantive support in the Security Council or in the UN General Assembly for its allegations. Calling a bioweapons treaty meeting appears to be simply another airing of its allegations.

### Why does Russia's move matter?

Few experts take Russia's claims seriously, but they are potentially more damaging to the bioweapons treaty than Cuba's in 1997 for five reasons. **First**, they will re-energize false portrayals of biological labs from earlier this year, undermine biosafety and biosecurity efforts, further erode confidence in critical



## ICI C<sup>2</sup>BRNE DIARY – July 2022

public and animal health infrastructure, and distract attention away from Russia's own actions in Ukraine which include [attacks on healthcare facilities](#).

**Second**, many countries have called for development aid along the lines of what US assistance, through its [Biological Threat Reduction Program](#), has provided to dozens of Ukrainian labs on public and animal health research and disease surveillance. Many countries want assistance and support to conduct this work, and, in fact, the World Health Organization requires its members (every country in the world save one) to monitor diseases within their borders. If Russia is effective at defining US development assistance as a form of non-compliance with the bioweapons treaty, the upcoming Article V process could seriously undermine peaceful cooperation under the treaty.

**Third**, Russia has amplifiers, like China. Some countries might actually believe the Russian allegations, but others will view them as an opportunity to put the United States on the back foot and use the Article V meeting as another venue to challenge the US-led global order.

**Fourth**, the Article V process is broad. The 1997 meeting did not set the only pattern of potential outcomes. As Tucker observed, Cuba seemed satisfied simply to air its allegations in a formal meeting. Russia may not be so easily satisfied and may press for some form of follow-up consultations or clarification process, or even call for an inspection or investigation. That would drag out the process and could undermine overall confidence in the treaty's ability to address allegations of non-compliance. It would also be ironic because during negotiations in the 1990s, China, Russia and others maintained their insistence that [consultation procedures must be voluntary](#) and "frivolous requests" for [investigations must be prevented](#).

**Finally**, every five years the members of the bioweapons treaty meet to discuss and review it. That's set to happen this coming November. It is well-known that the treaty has [no agreed verification mechanism](#) and while this year's review conference is unlikely to restart formal negotiations on one, the [indicators](#) were pointing towards a more formal discussion of compliance assurance mechanisms. The Article V deliberations could stall progress on that front if relations between treaty members sour as a result of Russia's move.

Russia could sway countries to its position at the upcoming Article V meeting about alleged US bioweapons programs. That's already happened several times during the Ukraine conflict. A greater danger, however, comes from countries who are unconvinced by the submitted evidence and information but who remain silent and effectively abstain from being caught in a confrontation between the United States and Russia.

China, India, and the United Arab Emirates [abstained in a Security Council resolution vote on Feb. 25](#) that called for an end to the Ukraine invasion. In early March, a General Assembly vote that was [characterized as a global expression of outrage](#) that deplored Russia's invasion of Ukraine, was actually much less. Although 141 of the 193 UN member states voted for the resolution, 35 abstained, including India, China, Iran, Cuba, and Pakistan, while alongside Russia, four others voted against it (Belarus, North Korea, Eritrea, and Syria). In a similar manner, the General Assembly [resolution to remove Russia from the Human Rights Council](#) had a far from comforting result. Ninety-three countries voted in favor, 24 voted against, and 58 abstained. Russia, China, Cuba, North Korea, Iran, Syria, and Vietnam were among those who voted against while some countries who are important players in the future of the bioweapons treaty such as India, Brazil, South Africa, Mexico, Pakistan, Singapore, Malaysia, and Indonesia abstained. Russia's decision to trigger a special session of the Biological Weapons Convention now runs the risk of co-opting the treaty, and using it as a platform to spread and legitimize disinformation—particularly if important countries stay silent when these allegations are aired. It will take hard work and ingenuity from disarmament diplomats to ensure the meeting does not descend into acrimony and that any report from it is accepted as an accurate record of the deliberations. Beyond the meeting, however, there is an urgent need to counter Moscow's destructive narrative and to protect the norm and institutions that prohibit biological weapons from spurious and unsubstantiated allegations that could polarize the bioweapons treaty even more than it already is.

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## Each COVID-19 Reinfection Increases Health Risks

Source: <https://www.medscape.com/viewarticle/976772>

July 07 – People who get reinfected with the virus that causes COVID-19 have more health risks with each round of reinfection, a large national database study reveals.

Researchers saw worse health effects during active infection, but some symptoms lasted as long as 6 months, suggesting a direct link between reinfection and long COVID.

"Reinfection adds or contributes additional health risks. It is not totally benign, and people should try to avoid getting reinfected," says lead study author Ziyad Al-Aly, MD.

The risks remained whether or not people were fully vaccinated. In some cases, people might have been infected earlier with the Delta strain and now be exposed to Omicron or its subvariant, BA.5, which may be better at evading vaccine protection, he says.

"It is also possible that the first infection may have weakened some organ systems and made people more vulnerable to health risks when they get a second or a third infection," adds Al-Aly, a clinical epidemiologist at Washington University and chief of research and development at the VA St. Louis Health Care System. "There are a lot of variables at play, but it is clear that reinfections contribute additional risks and they should be avoided."

Al-Aly and his colleagues compared **257,427 people** with a first infection with the virus that causes COVID-19 to a group of 38,926 people who had a second or later infection, and then to 5.4 million people who never were infected. The information for the study came from veterans in a Department of Veterans Affairs health care database.

The results were published online June 17 as a [pre-print study](#), which means it has not yet been peer-reviewed, a key step to help evaluate and validate clinical research. The study is under review by the journal *Nature Portfolio*.

### Experts Weigh In

Three COVID-19 experts who were not involved in the research raised a couple of caveats, including how a study of veterans might or might not apply to the general population.

"It's the first study to characterize the risks of reinfection," says Eric Topol, MD.

He points out that a second infection, compared to a first, was associated with twice the rate of people dying from any cause, as well as twice the risk of heart or lung problems.

The extra risks grew larger with each infection as well, says Topol, executive vice president of Scripps Research and editor-in-chief for Medscape, WebMD's sister site for health care professionals.

"Obviously these findings are worrisome since reinfection was quite rare before the Omicron wave hit, at 1% or less through the Delta variant wave. But now reinfections have become much more common," he says.

### Higher Risks, Especially for Some

The study was "well done," says Ali Mokdad, PhD, when asked to comment. Al-Aly and colleagues "have access to a good data, and they have done several studies."

He says the extra risks are more likely among the elderly, the [immunocompromised](#), and people with other medical conditions.

"It makes sense, and let me explain why," Mokdad says. "When you have somebody who got COVID-19 the first time and was impacted by it, maybe someone who was older or who had a chronic condition, the next hit would also cause more damage."

"That's why you would expect some people would be more likely to have a harder second infection," says Mokdad, an adjunct professor of epidemiology and professor of health metrics sciences at the University of Washington in Seattle.

"The best thing for you and for the general public — healthy or not, chronic condition or not — is not to get infected," he says. "Go get your vaccines and your boosters, and wear a mask when you're in a place that is crowded and you cannot keep a safe distance."

### Veterans' Risk Factors Different?

"When you look at that study, the big caveat is that veterans don't resemble the general population," says Amesh Adalja, MD, a senior scholar at the Johns Hopkins Center for Health Security at the Bloomberg School of Public Health in Baltimore.

"I don't think you can generalize [the study] to everybody, but really for people that have risk factors for severe disease," he says, because veterans tend to be older and have more health conditions.

He says a lot of people who get reinfected are testing positive at home. As a result, their cases don't make it into research. In contrast, the veterans in the study were "people who for whatever reason wanted to get a formal test."



As the virus has mutated away from the vaccines, the shots can still protect against severe illness, hospitalization, and death, but they are less able to protect against infection, Adalja says. "That's also the case with prior immunity. If you were someone infected with BA.1 or Delta, for example, your ability to fend off the new variants, BA.4 and BA.5, may not be very high."

The study shows why "it's important to stay up to date with your vaccines," he says, "and why we need to get better vaccines that are targeted to variants that are currently circulating."

Despite these caveats, Adalja says, the researchers used "a robust database" and a large study population, which "gives all of us confidence in the strength of the finding."

### Looking at Longer-Term Effects

Whether reinfection contributes to increased risk of long COVID was unknown, so researcher Al-Aly and colleagues followed the veterans over 6 months. They compared people who had one, two, three, or more infections to the non-infected group.

Among those with reinfection, about 13% had two infections, 0.76% had three infections, and .08%, or 246, people had four or more infections.

Compared to veterans with a first coronavirus infection, those who got a reinfection had more than double the risk of dying from any cause.

Even though "the mechanisms underpinning the increased risks of death and adverse health outcomes in reinfection are not completely clear," the authors say, "the findings highlight the consequences of reinfection and emphasize the importance of preventing re-infection SARS-CoV-2," the virus that causes COVID-19.

Asked about the next step in their research, Al-Aly said, "BA.5 seems to be the main challenge looming ahead, and we are focused on trying to better understand it."

## As biological weapons in Ukraine labs issue gets messier, India says abide by global treaty

Source: <https://www.nationalheraldindia.com/national/as-biological-weapons-in-ukraine-labs-issue-gets-messier-india-says-abide-by-global-treaty>

Mar 12 – As the war of words between the United States and Russia intensifies on the implementation of military biological programmes on the territory of Ukraine, India has underlined the importance of the Biological Weapons Convention (BWC) as a key global and non-discriminatory disarmament Convention which prohibits an entire category of weapons of mass destruction.

At a United Nations Security Council (UNSC) emergency meeting called to address related concerns in the conflict zone on Friday, India said that it has noted the recent statements from States and wider information regarding biological activities relating to Ukraine.

"It is important to ensure full and effective implementation of the Biological and Toxin Weapons Convention (BTWC) in letter and spirit. We also believe that any matters relating to obligations under the BTWC should be addressed as per the provisions of the Convention, and through consultation and cooperation between the parties concerned," said India's Permanent Representative to the UN Ambassador TS Tirumurti.

The Biological Weapons Convention (BWC) effectively prohibits the development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons. It was the first multilateral disarmament treaty banning an entire category of Weapons of Mass Destruction (WMD).

"Biological weapons disseminate disease-causing organisms or toxins to harm or kill humans, animals or plants. They can be deadly and highly contagious. Diseases caused by such weapons would not confine themselves to national borders and could spread rapidly around the world," states the UN.

It insists that the BWC is a key element in the international community's efforts to address WMD proliferation and has established a strong norm against biological weapons with the Convention reaching almost universal membership with 183 States Parties and four Signatory States.

Earlier this week, Moscow had said that the Russian Defence Ministry continues to study materials on the implementation of military biological programs of the United States and its NATO allies on the territory of Ukraine.

The Kremlin revealed that information received from various sources confirms the leading role of the US Defence Threat Reduction Agency in financing and conducting military biological research on the territory of Ukraine.

It said that details of the UP-4 project became known, which was implemented with the participation of laboratories in Kiev, Kharkov and Odessa and was designed for the period up to 2020.



"Its purpose was to study the possibility of the spread of particularly dangerous infections through migrating birds, including highly pathogenic H5N1 influenza, the mortality rate of which reaches 50 percent for humans, as well as Newcastle disease," it said while releasing "updates on results of analysis of documents related to military biological activities of the US in Ukraine".

The US had immediately rubbished the claims, saying that the "Russian disinformation is total nonsense" with the Chinese officials also echoing these "conspiracy theories".

"The United States does not own or operate any chemical or biological laboratories in Ukraine, it is in full compliance with its obligations under the Chemical Weapons Convention and Biological Weapons Convention, and it does not develop or possess such weapons anywhere," the US State Department spokesperson Ned Price said in a statement on Wednesday.

Russia also distributed a national document "on the issue of possible chemical provocations in Ukraine" at the UNSC on Friday.

It said that Ukrainian radical groups, "under the control of representatives of the American intelligence services", have prepared several possible scenarios for the use of toxic chemicals to carry out various kinds of provocations.

Insisting that the purpose of such actions is to accuse Russia of using chemical weapons against the civilian population and violating its obligations, **Moscow revealed that on the night of March 9, Ukrainian nationalists brought 80 tonnes of ammonia to the village of Zolochiv northwest of Kharkov.**

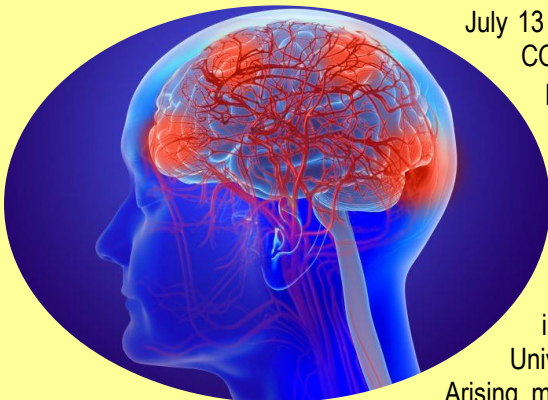
"According to information coming directly from the scene, the radicals are instructing the civilian population on how to behave in the zone of chemical contamination. We inform the States Parties to the Convention that such preparations clearly indicate preparations for the use of toxic chemicals," the document stated.

Meanwhile, India also expressed its concern over the ongoing situation in Ukraine, reiterating that dialogue will lead to the ending of hostilities.

"We sincerely hope the ongoing direct negotiations between Russia and Ukraine would lead to cessation of hostilities. There is no other alternative except the path of diplomacy and dialogue. The dire humanitarian situation needs immediate and urgent attention," said Tirumurti at the UNSC meeting.

## Model of Long COVID Syndrome Developed

Source: <https://www.insideprecisionmedicine.com/coronavirus-2/model-of-long-covid-syndrome-developed/>



July 13 – Researchers have hypothesized how post-viral fatigue syndromes, including Long COVID, become chronic diseases and why patients suffer frequent relapses. In a [report](#) published in *Cancer*, researchers from Otago University, Victoria University of Wellington, and University of Technology Sydney, developed a unifying model to explain how the neurologically-centered symptoms of these diseases are sustained through a brain-body connection.

"This work highlighted that there is a susceptible subset of people who develop such syndromes when exposed to a severe stress, like infection with COVID-19, or the glandular fever virus Epstein Barr, or in some people with vaccination that is interpreted as a severe stress," says lead author Emeritus Professor Warren Tate, of the University of Otago's Department of Biochemistry.

Arising most commonly from a viral infection, Myalgic Encephalomyelitis / Chronic Fatigue Syndrome (ME/CFS), can also be caused by other severe stressors such as exposure to agricultural chemicals or surgery. In long COVID, [risk factors include](#) being female, older age, obesity, asthma, and poor overall pre-pandemic physical and mental health. The condition features brain-centered symptoms of neuroinflammation, loss of homeostasis, brain fog, lack of refreshing sleep, and poor response to even small stresses.

Since the 1930s there have been 75 reported outbreaks of probable viral origin that have led to long-term diseases that have the profile of ME/CFS. The current worldwide prevalence of the condition has been reported as between 0.4 and 2.6% among countries meaning it is approximately 10-fold more prevalent than other fatigue illnesses, such as multiple sclerosis.

How these debilitating brain effects develop is poorly understood, and the lack of conclusive biomarkers for a diagnostic laboratory test and the ill-defined pathophysiology have hindered an understanding of the disease.

However, studies have shown ongoing immune dysfunction in ME/CFS patients, both in the blood borne immune cells and in the immune regulator molecules (cytokines) that they export. ME/CFS patients' immune systems are described as "chronically activated or in overdrive" these authors point out. Cytokine signatures characteristic of the severity of the disease are mainly proinflammatory.



This team suggest that, following an initial viral infection or stressor event, the subsequent systemic pathology moves to the brain via neurovascular pathways or through a dysfunctional blood-brain barrier. This results in chronic neuroinflammation, leading to a sustained illness with chronic relapse recovery cycles.

The model proposes healing does not occur because a signal continuously cycles from the brain to the body, causing the patient to relapse.

The creation of this model is not only important for the “huge research effort ahead”, but also to provide recognition for ME/CFS and Long COVID sufferers.

“These diseases are very closely related, and it is clear the biological basis of Long COVID is unequivocally connected to the original COVID infection – so there should no longer be any debate and doubt about the fact that post viral fatigue syndromes like ME/CFS are biologically based and involve much disturbed physiology,” Tate says.

“Patients need appropriate affirmation of their biological-based illness and help to mitigate the distressing symptoms of these very difficult life-changing syndromes which are difficult for the patients to manage by themselves.

“What should be a transient inflammatory/immune response in the body to clear the infection, develop immunity and manage the physiological stress, becomes chronic, and so the disease persists.”

## As monkeypox spreads, Fort Detrick scientists continue research

Source: <https://finance.yahoo.com/news/monkeypox-spreads-fort-detrick-scientists-065000588.html>

Jul. 12—Although monkeypox only recently began dominating U.S. headlines, scientists at Fort Detrick have long been familiar with the virus.

It's closely related to the virus that causes smallpox. And even though smallpox was eradicated in 1979, the U.S. Army still considers it a threat, since it could be used as a biological weapon. Over the years, researchers at the U.S. Army Medical Research Institute of Infectious Diseases have helped develop vaccines and therapeutics that can be used for both monkeypox and smallpox.

With monkeypox now spreading in countries where it isn't usually detected — including the United States — scientists at the institute are working to develop better ways to diagnose, prevent and treat the disease.

Jay Hooper, molecular virology branch chief for USAMRIID, talked with The Frederick News-Post on Friday about some of the research being conducted.

It's been two-and-a-half years since the first COVID-19 infections were reported, and more money is now being spent on preparing for and preventing future pandemics, Hooper said in an interview in his office.

Public health experts around the world are talking to each other more frequently, he said. And it's becoming increasingly obvious that countries need to be prepared to fight infectious diseases transmitted from animals to humans.

But, in some ways, Hooper said, it doesn't feel like much has changed.

"We had the Ebola outbreak. And then we had the Zika outbreak. And then we had the SARS outbreak," he said. "And after each one of them, people basically said, 'We can't let this happen again.'"

"Meanwhile, monkeypox was smoldering in Africa."

### Research in progress

An article published nearly two decades ago hangs on the wall of Hooper's office.

It documents a big win for a team of USAMRIID scientists he had been working with to develop a safer smallpox vaccine for immunocompromised people. A study had shown the gene-based vaccine was effective in protecting monkeys from monkeypox.

USAMRIID doesn't work with the smallpox virus at Fort Detrick, Hooper said. There are only two stocks of the virus in the world sanctioned by the World Health Organization: one at the Centers for Disease Control and Prevention headquarters in Atlanta and one in Russia.

In the years that followed, Hooper said, his team kept working on the vaccine, but their progress was constrained by the funding they could get. The vaccine has yet to advance further than the "proof of concept" stage, he said.

There were about 9,600 monkeypox cases around the world as of Monday, including 865 in the United States, according to the CDC. Especially in light of the outbreak, the lull in the team's work was unfortunate, Hooper said.



If they had continued "at full speed," they would be further along in developing the DNA vaccine than they are now.

"We continue to try and push things forward, but it's just a slower pace than what it was," he said.

But Hooper and his USAMRIID colleagues recently had another victory. They've been working with a biopharmaceutical company to develop a new class of drugs based on mRNA, a type of molecule that uses genetic information to create a kind of blueprint for making proteins.

Their eventual goal is to use mRNA to deliver information to the body that it can use to ward off disease. When they tested the technology in a rabbit, they saw promising results, according to a USAMRIID news release published this month.

Although the drugs are "definitely not ready for prime time," Hooper said, he hopes they one day could be used with a vaccine to fight monkeypox and similar diseases. The mRNA treatment would help the body confront an infection in the short term, while the vaccine would help protect it in the long term.

"That's the vision," Hooper said. The recent research published was "one little baby step in proof of concept of, like, 'Could that work?'"

### USAMRIID link to smallpox vaccine

The two vaccines licensed in the United States to prevent smallpox have been found to also be effective at protecting people against monkeypox, according to the Centers for Disease Control and Prevention.

USAMRIID had ties to the development of both.

A former USAMRIID division chief helped create one — ACAM2000 — after leaving the institute, Hooper said.

It was a "cleaned-up" version of an earlier smallpox vaccine, which was a big force behind the global push to eradicate the virus.

But ACAM2000, similar to its predecessor, contains a live virus. The vaccine can be dangerous for people with suppressed immune systems, including those with HIV.

Another vaccine was needed that could be administered to everyone, including people who were immunocompromised, Hooper said.

Luckily, he said, one had already started being developed in the 1960s: the vaccine known in America today as Jynneos.

Using animal models and other types of tests, scientists began comparing the vaccine's effectiveness with the effectiveness of ACAM2000.

But they had a problem. For the FDA to OK the vaccine, scientists needed to prove it could work on a large scale — a process that usually involves thousands of people who agree to participate in a trial.

By this time, smallpox had been eradicated. There weren't enough monkeypox cases to test the vaccine, either.

So, researchers got creative, Hooper said. They decided to administer the Jynneos vaccine to people who had already received ACAM2000, to see if the newer vaccine would effectively fight the live virus present in the older one.

Led by Phillip Pittman, chief of the department of clinical research at USAMRIID, scientists conducted a clinical trial of the vaccine in Korea, where 440 U.S. military troops who had been vaccinated with ACAM2000 were stationed.

The trial found the vaccine to be effective. And in 2019, the FDA approved Jynneos to be used to protect people from smallpox and monkeypox.

## On a Scale of 1 to 10, Here's How Worried You Should Be About The COVID Variant BA.5

Source: <https://www.sciencealert.com/on-a-scale-of-1-to-10-here-s-how-worried-you-should-be-about-the-covid-variant-ba-5>

July 14 – There's a new [coronavirus](#) variant traveling around this summer at a record clip.

It's a variant of Omicron called BA.5, and it's causing a stir largely because it has evolved even further away than other Omicron variants did from the coronavirus we already knew.

Previously, getting infected with Omicron meant you probably had [some protection against reinfection](#) for a few months.

But BA.5 is [strategically evading our built-up defenses](#) against prior versions of the [virus](#). This all means that [reinfections – even in vaccinated and recently infected](#) people – are [up, way up](#).

So, yes, BA.5 is easier to catch than other variants have been, and it may feel like it's lurking everywhere right now, infecting anyone, whether or not you've already had a vaccine, a booster shot, and/or a recent bout of [COVID-19](#).

"If you were infected with BA.1, you really [don't have a lot of good protection](#) against BA.4/5," Dr. Anthony Fauci, the US's top infectious-disease expert, [said Tuesday](#).



## ICI C<sup>2</sup>BRNE DIARY – July 2022

We asked four top public-health experts to help us figure out how worried we should be about this new, extra-stealthy Omicron subvariant.

Telling us how concerned to be about new infectious-disease threats is typically what these people do for a living. But rating BA.5 gave them some pause.

"I can't answer that," Dr. [Celine Gounder](#), an infectious-disease expert and the editor at large for public health at Kaiser Health News, said. "Because it depends on your vaccination status, your age, your health, your occupation, your living situation, etc., etc."

Others did give hard numbers, but there was variation in their answers based on where you may live or who you are.

### If you're up to date on vaccines, one expert says your worry scale should register at '3 out of 10'

Dr. Preeti Malani, an infectious-disease physician at the University of Michigan, was willing to give a hard and fast number. "I'd say 3 out of 10," she said, expressing mild concern about the new variant.

"BA.5 is everywhere, and if you haven't gotten it yet, the odds are pretty good you will," Malani said, adding: "But if you are up to date on vaccines, the illness should be mild and without major medical consequences."

While there's a "high risk of exposure" to this variant, she said there were also "lots of reasons to be hopeful." Early [treatment with Paxlovid is now free](#) for all Americans who may need it.

"With [home testing](#) and rapid connection to treatment (for those at risk of complicated infection), COVID is manageable," Malani said.

### Older adults without booster shots should be more worried

In the UK, which is at least a few weeks ahead of the US in terms of variant spread, national [health-security experts](#) have assessed that the protection offered by vaccines against BA.5 "likely remains comparable to that observed previously," which means vaccinated and boosted people, while certainly at risk of getting sick with BA.5, likely won't end up in the hospital or dead.

For those who aren't up to date on shots, and [who don't have a COVID-19 action plan](#), outcomes could be bad.

The [European Union](#) earlier this week released new recommendations for a second booster for all adults 60 and older, in line with what the US already recommends.

"We are currently seeing increasing COVID-19-case notification rates and an increasing trend in hospital and ICU admissions and occupancy in several countries, mainly driven by the BA.5 sublineage of Omicron," Dr. Andrea Ammon, the director of the European Centre for Disease Prevention and Control, [said](#).

"There are still too many individuals at risk of severe COVID-19 infection whom we need to protect as soon as possible," she added.

### Regional differences in vaccination rates and heat waves may complicate the calculation

Katelyn Jetelina, a public-health expert who runs the popular [Your Local Epidemiologist blog](#) wasn't willing to give a single number for the entire US. She said the risk was too variable right now, based on where you live.

"I'm quite worried about the South," she said, ranking it a 7 out of 10 because of low rates of booster shots, low Paxlovid usage, low testing, and "everyone going inside for the heat."

The South also had a relatively low number of infections in the recent BA.2.12.1 wave, unlike the Northeast, where Jetelina said people should be at about a 4 out of 10 level of concern.

Bottom line: If you're boosted, wearing [masks when appropriate](#), and have a test and treatment action plan for if you do get sick, most experts agree this wave should turn out OK for you.

But like all risk calculations, "the number is different based on who it is being applied to," as Dr. Amesh Adalja, a senior scholar at Johns Hopkins Center for Health Security, said.

"If it is a fresh lung-transplant patient, the number would be 10. For a healthy 18-year-old, it would be 0," he said. **"Risk is not one-size-fits-all."**

## People With Long COVID Are Traveling Overseas for Expensive 'Bloodwashing' Treatments

Source: <https://www.sciencealert.com/people-with-long-covid-pour-life-savings-into-bloodwashing-procedure>

July 14 – Some people experiencing debilitating long COVID symptoms have spent tens of thousands of euros traveling across Europe to access a 'bloodwashing' procedure that is experimental and unproven. 'Bloodwashing', or apheresis, involves extracting a person's blood, filtering the blood to remove lipids and inflammatory proteins, and reinfusing it back into the body.





## ICI C<sup>2</sup>BRNE DIARY – July 2022

The German Society of Nephrology considers apheresis an option of last resort for people with untreatable lipid disorders. There have been no [clinical trials](#) on people with long COVID, and experts say the scientific rationale for the treatment is shaky.



Apheresis carries [risks](#) of bleeding, clotting, infection, and reactions to agents used in the procedure.

An [investigation](#) by Madlen Davies at the *British Medical Journal* found that one patient from the Netherlands spent nearly her entire life savings traveling to [Cyprus](#) for a 'bloodwashing' procedure that offered no improvement in her symptoms

The Dutch woman caught [SARS-CoV-2](#) in November 2020 and experienced such extreme fatigue that it took her two hours to walk to the kitchen.

She experienced brain fog, heart palpitations, shortness of breath, and chest pain. A series of medical tests revealed nothing unusual, which is [normal](#) for long COVID.

The Dutch woman left her job in November 2021 after trying to go back to work twice. She joined a Facebook group for people with long COVID and saw a lot of chatter about a clinic in Germany that was offering apheresis.

Deciding to try the procedure, she traveled to the "Long COVID Center" in Cyprus in March 2022.

She rented an apartment on the beach and spent two months undergoing six rounds of apheresis at €1,685 (US\$1,697) a piece.

While in Cyprus, she underwent nine rounds of [hyperbaric oxygen therapy](#), where the patient breathes oxygen in a high-pressure chamber. She also tried an intravenous [vitamin](#) drip and a vitamin D injection.

Nothing helped. The so-called treatments plundered her savings with nothing to show for it.

There are clinics in [Germany](#), [Switzerland](#), and [Turkey](#) that offer apheresis for long COVID. The Lipid Center North Rhine in Germany has done the procedure on thousands of patients and claims to have good outcomes.

Apheresis supposedly reduces the stickiness of the blood and improves circulation in the smallest of blood vessels by removing microclots in people with long COVID.

Those offering the treatment argue that patients cannot wait for years for clinical trials to be completed when they have such disabling conditions and there the benefits of experimental procedures outweigh the risks for some patients.

However, there is no published and peer-reviewed research showing that apheresis helps treat long COVID.



"As we don't know how they form, we cannot tell if this treatment will stop microclots from recurring," Robert Ariens, a professor of vascular biology at the University of Leeds School of Medicine, [said](#).

"[Microclots] may be a biomarker for disease, but how do we know they are causal?" he [said](#). "If we don't know the mechanisms by which the microclots form and whether or not they are causative of disease, it seems premature to design a treatment to take the microclots away, as both apheresis and triple anticoagulation are not without risks, the obvious one being bleeding."

Anticoagulation can cause bruising, nosebleeds, and brain hemorrhages, so patients need long-term follow-up, which is challenging if they are receiving care in a country other than the one they normally live.

Long COVID is [defined](#) by the WHO as ongoing symptoms that continue for more than three months after [COVID-19](#) that last for at least two months and cannot be explained by an alternative diagnosis.

The cause of long COVID is still unknown. One of the [leading theories](#) is that long COVID is caused by tiny blood clots in the lungs and blood vessels that gum up the system and prevent blood flow and oxygen transfer around the body.

Other theories hypothesize that long COVID is caused by a haywire immune system or the [virus](#) lingering in the body. Some [experts](#) think it could be a combination of all three.

●► This investigation was published in the [British Medical Journal](#).

## CDC's Monkeypox Case Count Has Just Passed 1,050 With Hardly Any Testing

Source: <https://www.sciencealert.com/cdc-s-monkeypox-case-count-has-just-passed-1-050-with-hardly-any-testing>

July 15 – More than 1,050 monkeypox cases have been detected in the US as of Wednesday (July 13), but based on the availability of diagnostic tests in the country, this may be a significant undercount, some experts say.

So far this year, about 10,800 monkeypox cases have been detected in places where the [virus](#) does not typically spread, such as the US, according to the [Centers for Disease Control and Prevention](#) (CDC).

Both the global case count and US case count include laboratory-confirmed monkeypox cases and infections attributed to an Orthopoxvirus, the genus of [viruses](#) that includes monkeypox; smallpox, which has been eradicated; and the related cowpox and camelpox viruses, which very rarely jump to humans.

The outbreak is being driven by a group of monkeypox viruses known as the West African clade, according to the [CDC](#).

This lineage of viruses rarely causes severe or fatal disease, but children younger than 8, people with weakened [immune systems](#) or a history of eczema, and people who are [pregnant](#) or breastfeeding face a greater risk of such outcomes.

In late June, the CDC and US Department of Health and Human Services (HHS) [announced](#) that they'd begun ramping up the nation's capacity for monkeypox testing by supplying tests to five commercial laboratory companies.

"Health care providers will be able to use these laboratories by early July and testing capacity through these companies will be ramped up throughout the month," the HHS said.

However, since the first US cases were detected in May, monkeypox testing has generally been hard to come by, so the CDC's official case count is likely misleading, Keletso Makofane, an epidemiologist at Harvard University, [told NPR](#).

That's partially because health care providers previously had to go through a cumbersome process to procure tests, and partially because many providers were only supplying tests to patients whose condition matched a narrow definition of what monkeypox looks like.

### Monkeypox Symptoms

With this in mind, the CDC recently updated its guidance as to who should be tested for [monkeypox based on their symptoms](#), Live Science previously reported. In this health alert, the agency noted that many of the recent monkeypox cases in the US have not matched classical descriptions of the disease.

Normally, monkeypox infections are thought to start with [flu](#)-like symptoms, including [fever](#), headache, muscle aches, swollen lymph nodes and fatigue.

Then, the characteristic "pox" rashes begin to appear, usually around the face and in the oral cavity, and later, on the extremities, including the palms of the hands and soles of the feet.

These rashes progress through several stages, starting out as discolored patches of [skin](#) and then forming into raised bumps, blisters, and large, pus-filled pimples that eventually scab over and fall off.

In most cases, these symptoms resolve in two to four weeks.



In the current outbreak, however, some patient's symptoms have diverged from the normal pattern. For example, some patients developed flu-like symptoms after their skin rashes or didn't experience flu-like symptoms at all, the CDC reported.

Some patients initially developed rashes around the genitals and anus, and these skin lesions caused symptoms of painful inflammation and rectal bleeding. And sometimes, patients have had rashes in different stages of progression at the same body site, which is unusual.

Monkeypox rashes can be mistaken for rashes caused by Varicella zoster, the virus that causes [chickenpox](#); or for certain sexually transmitted infections, such as [syphilis](#) and herpes, so patients suspected to have these diseases should also be tested for monkeypox, the CDC noted.

### How Monkeypox Spreads

Monkeypox spreads when people come into contact with an infected person's rashes or materials contaminated with their bodily fluids, such as clothing or linens, according to the [World Health Organization](#) (WHO).

Transmission can also occur through respiratory droplets, meaning spit and mucus, but this mode of transmission usually requires "prolonged" face-to-face contact. In pregnant people, the virus can pass through the placenta and can also be transmitted via close contact to newborns during and after birth.

Preliminary research suggests that the monkeypox viruses driving the current outbreak have a reproduction number, or R-naught (R0), of 0.8, the [WHO reported](#). That means that a single infected person infects 0.8 more people, on average.

That said, the virus's R0 may be greater than 1 among men who have sex with men, as so far, the majority of confirmed cases have been detected in this group. That's not because monkeypox is a sexually transmitted disease or more likely to infect men who have sex with men, but rather because the virus happens to be spreading within this social network.

### Monkeypox Treatments and Vaccines in the US

There are no drugs specifically approved to treat monkeypox, and many people recover without the need for specific treatment. However, in severe cases, patients may receive antiviral medications intended to treat other infections; for example, they may receive tecovirimat (brand name TPOXX), which is designed to treat smallpox and also works against other orthopoxviruses, according to the [CDC](#).

Severe monkeypox infections may be also treated with Vaccinia Immune Globulin Intravenous (VIGIV), which contains [antibodies](#) taken from the [blood](#) of people who were immunized with the smallpox vaccine.

People who have recently been exposed to monkeypox may also be given one of two vaccines – JYNNEOS or ACAM2000 – to reduce the severity of their symptoms or to prevent the illness altogether, according to the [CDC](#).

JYNNEOS, approved for both monkeypox and smallpox, is a newer vaccine and generally preferred over ACAM2000, which carries a risk of severe side effects in immunocompromised people, pregnant people and older adults, [The New York Times reported](#).

On June 28, the CDC and the HHS launched a campaign to expand vaccine access during the ongoing monkeypox outbreak. All people with confirmed or presumed monkeypox exposures are now eligible for free vaccination, including those "who had close physical contact with someone diagnosed with monkeypox, those who know their sexual partner was diagnosed with monkeypox, and men who have sex with men who have recently had multiple sex partners in a venue where there was known to be monkeypox or in an area where monkeypox is spreading," [the statement reads](#). However, the vaccination plan's rollout has not been smooth so far. Upon the plan's announcement, experts criticized the rollout as too slow and too limited in scale, [The New York Times reported](#). Already, health and city officials in San Francisco have requested that the federal government quickly distribute more vaccine doses, arguing that the current need vastly outstrips the supply, the [San Francisco Chronicle reported](#). Similarly, in New York City, vaccine appointments have been filling as quickly as they're released, and Mayor Eric Adams recently wrote to President Joe Biden to ask for more doses to distribute, [Gothamist reported](#). Meanwhile, two states with confirmed monkeypox cases – New Mexico and South Dakota – have yet to receive any vaccine doses, [CNN reported](#) Thursday (June 14).

## Monkeypox may have been spreading in UK for years

Source: <https://www.livescience.com/monkeypox-circulating-years-in-uk>

May 27 – The monkeypox virus may have been spreading at low levels in the United Kingdom for years now, only becoming detectable in the last month, according to health officials.

This is the first time the smallpox-related [virus](#) has spread locally outside of West and Central Africa, where it is endemic, as all known past cases outside Africa were related to foreign travel. As of May 25,



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more than 200 people across 20 countries are confirmed to have monkeypox, the [European Centre for Disease Prevention and Control \(opens in new tab\)](#) (ECDC) reported. Currently, about 106 cases are people in the U.K., according to the [U.K. Health Security Agency \(opens in new tab\)](#) (UKHSA). The majority of cases worldwide have been identified in men who have sex in men, and officials have tentatively traced the origin of the current outbreak to two raves, one in Spain and the other in Belgium, according to news reports.



Monkeypox belongs to the Orthopoxvirus genus, which also includes variola virus (which causes smallpox), vaccinia virus (used in the smallpox vaccine) and cowpox virus. (Image credit: dotted zebra / Alamy)

Officials are now suggesting the possibility that local transmission of monkeypox has been occurring in the U.K. for two to three years. For instance, four monkeypox cases were reported in the U.K. between 2018 and 2019 in individuals who had traveled to Nigeria; another three cases from similar travel were confirmed there in 2021, [The Guardian reported \(opens in new tab\)](#).

### Pandemics by numbers (as of July 25, 2022)

	CASES	DEATHS	COUNTRIES & TERRITORIES	MOST AFFECTED COUNTRIES
<a href="#">COVID-19</a>	574,234,874	574,234,874	228	USA, India, Brazil, France, Germany, UK
<a href="#">MONKEYPOX*</a>	16,353	0**	83	Spain, UK, Germany, USA***

\* Outside Africa | \*\* 5 deaths in Africa | \*\*\* First case in two children

### The Results Are In: Heavier Menstrual Bleeding After Covid Vaccination Is a Thing

Source: <https://www.sciencealert.com/heavier-menstrual-bleeding-after-covid-vaccination-it-s-a-thing>

July 15 – Menstrual cycles are a somewhat forgotten vital sign of health – not unlike pulse, breathing rate and body temperature, but far less talked about.

Except in early 2021, when people started noticing that they had heavier than usual, or unexpected, menstrual bleeding after getting vaccinated against [COVID-19](#).

Although these [changes were short-lived](#), and most people's cycles returned to normal a month or two later, a question still lingered: how many vaccinated menstruators had experienced changes in their periods after vaccination?

Nearly half, according to a massive study published in *Science Advances* which surveyed more than 39,000 adults over three months, and found around 42 percent of those with regular menstrual cycles bled more heavily than usual after vaccination.

Most clinical trials focus on whether vaccines such as those made to combat COVID-19 are safe to give to someone who is pregnant ([yes](#)) or affect fertility ([no](#)). Vaccine trials also don't usually monitor participants for more than a week post-vaccination and rarely ask about menstruation.

Vaccine manufacturers, therefore, "had no way of addressing the extent to which this observation was a coincidence or a potential side effect of the vaccines," [writes](#) biological anthropologist and study author Katharine

Lee of the Washington University School of Medicine and colleagues.

So, Lee joined forces with Kate Clancy, a human reproductive ecologist specializing in women's health at the University of Illinois at Urbana-Champaign, and started collecting data.

This was April 2021, and with multiple viral variants spreading in waves around the world, the researchers designed a web-based survey to capture a wide range of responses from menstruating adults.



"The response was overwhelming," Clancy told ScienceAlert in an email.

The idea that vaccines, which prime the immune system to defend against infections, could alter menstrual cycles is certainly not new.

In 1913, a study noted how [the typhoid vaccine](#) was associated with menstrual irregularities, which include missed, late, early and heavy periods. Hepatitis B and cervical cancer vaccines (against human papillomavirus or HPV) have also been known to disrupt menstrual cycles in some people.

"Generally, changes to menstrual bleeding are not uncommon or dangerous, yet attention to these experiences is necessary to build trust in medicine," Lee and colleagues [explain](#).

It's especially important amongst groups whose health concerns have [long been dismissed by medical doctors](#). The survey asked fully vaccinated people who had not had COVID-19 to report changes they had noticed in their period flow, cycle length, bleeding duration, and common menstrual symptoms after vaccination.

"Unexpected and unplanned menstrual changes can cause concern, distress, or other negative responses, in addition to discomfort and physical pain," Lee and colleagues [write](#).

Of respondents who described their menstrual cycles as predominantly regular, nearly half of respondents in the online survey (42 percent) said they had heavier menstrual bleeding after getting vaccinated against COVID-19.

Roughly the same proportion of people (44 percent) reported no change to their period flow after vaccination.

A much smaller proportion of people had lighter periods.

What's more, a sizeable fraction of people who don't typically menstruate (because they are post-menopausal or use long-acting reversible contraceptives or gender-affirming hormones) also reported breakthrough bleeding.

Lee, Clancy, and colleagues caution that the survey results may not generalize to wider populations, and likely overestimate the prevalence of short-lived, heavy bleeding after vaccination.

"The point of this was never to perfectly assess prevalence," Clancy told ScienceAlert, but "to listen to people and validate their concerns because there were so many who were quick to dismiss them."

Having said that, the study findings align with those from [other studies](#) of menstruating people in the [UK](#) and the [Netherlands](#), and corroborate anecdotal reports.

Clancy also reports that many survey respondents said they were "still very glad to have gotten the vaccine but that they were angry that no one had studied this beforehand".

The researchers stress that the findings are not indicative of changes to fertility and suggest that their study warrants further research into possible causes of temporarily disrupted cycles.

Among the people under 45 years old, those who experienced heavier periods after getting vaccinated were more likely to be older, identify as Latino or Hispanic, or have pre-existing conditions such as endometriosis.

We also know a host of biological stressors can unsettle even the most regular of menstrual cycles. High levels of sustained, intense exercise and calorie restriction, prolonged stress and inflammation can all disrupt or halt menstrual cycles without affecting fertility in the long run.

The wide-ranging experiences of survey respondents make it challenging to precisely define how period length, timing and flow may change after getting vaccinated.

Based on their data, Lee and Clancy have a hunch, though, about what might be happening.

They think it's more likely that vaccines could be messing with the body's inflammatory pathways, rather than changing ovarian hormone pathways because there was little difference between people with periods who were taking hormone contraception and those who weren't. Of course, the only way to disentangle these possibly interwoven effects is to collect the data – and better it be from the outset, as part of clinical trials.

"One important lesson is that the effects of medical interventions on menstruation should not be an afterthought in future research," Victoria Male, a reproductive immunologist at the Imperial College London [wrote](#) in 2021 in the *British Medical Journal*.

"Clinical trials provide the ideal setting in which to differentiate between menstrual changes caused by interventions from those that occur anyway, but participants are unlikely to report changes to periods unless specifically asked."

Lee and Clancy's next steps are to reanalyze the full dataset from the first survey, to see if the findings hold true in a larger sample and over time. In a second study, they are also taking a look back at people's past experiences of healthcare.

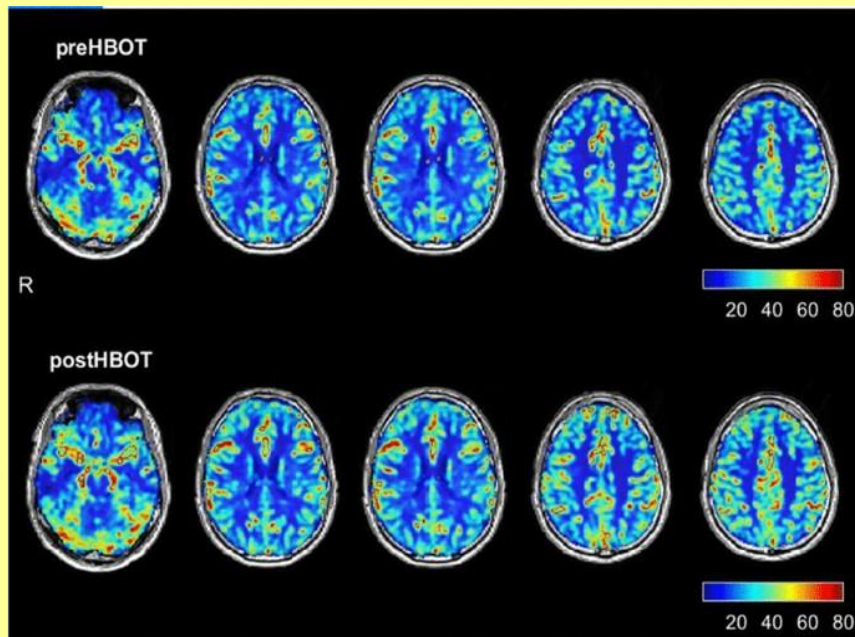
"We hope we can better understand how healthcare experiences affect vaccine sentiments, to improve trust and communication and give patients the listening and the caring treatment they deserve," Clancy told ScienceAlert.

●► The study was published in [Science Advances](#).



## Long COVID study finds potential in hyperbaric oxygen therapy

Source: <https://www.medicaldesignandoutsourcing.com/long-covid-therapy-clinical-trial-hyperbaric-oxygen-therapy/>



July 12 – A clinical trial involving 73 patients with long COVID has shown positive results from hyperbaric oxygen therapy (HBOT), Aviv Clinics said today.

The prospective, randomized, double-blind, placebo-controlled clinical trial was [published in Scientific Reports](#) and conducted by Israel's Sagol Center for Hyperbaric Medicine and Research at Shamir Medical Center and Tel Aviv University.

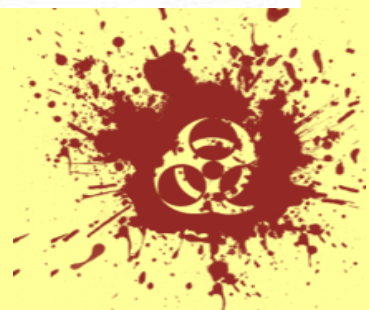
Brain perfusion magnetic resonance imaging before and after hyperbaric oxygen therapy. The upper row represents brain perfusion 3 months after the acute infection, before hyperbaric oxygen therapy. The lower row represents the perfusion magnetic resonance imaging done after completing the hyperbaric oxygen therapy protocol

“Millions of those who have recovered from COVID-19 are experiencing debilitating symptoms which persist for weeks, months or even years following their original infection,” Dr. Amir Hadanny, chief researcher and head of global clinical operations at Aviv Clinics, said in a news release. “Until today, no effective therapy has been suggested. Our research is the first randomized controlled trial to demonstrate a real solution for the long haulers.”

[Nearly 20% of Americans who have had COVID-19 reported symptoms lasting more than three months](#), according to the CDC. The lengthy list of chronic symptoms from long COVID includes fatigue, cough, fever, pain, difficulty breathing or shortness of breath, heart palpitations, digestive problems, neurological issues such as brain fog (difficulty thinking and/or concentrating), headaches, trouble sleeping, depression and anxiety.

Long COVID patients in the study who received HBOT sessions had significant improvement in global cognitive function, energy, sleep, psychiatric symptoms and pain interference, Aviv Clinics said. Participants in the control group did not show significant improvement.

“The research suggests that the development of post-COVID-19 conditions related to the central nervous system includes direct neurological injury mostly in the frontal lobes — the area of the brain



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that plays a major role in cognitive and mental functions,” research group leader Dr. Shai Efrati — director of the Sagol Center and chair of Aviv Scientific’s Medical Advisory Board — said in the news release. “Today, we understand that in some patients, the virus can penetrate the brain through the cribriform plate, the part of the skull located just above the nose, and trigger chronic brain injury presented as cognitive decline such as brain fog, loss of concentration and mental fatigue. The study revealed that HBOT can induce structural and functional repair of the damaged regions of the brain and improve the cognitive, behavioral and emotional function of the unfortunate patients suffering from post-COVID-19 conditions.”

**Of the 73 study participants, about half received 40 HBOT sessions — five per week for two months — breathing 100% oxygen in a multiplace HBOT chamber at 2 atmospheres absolute for 90 minutes with oxygen fluctuations. The other half of the participants in the control group received a placebo treatment of normal air pumped into their breathing masks.**

The study participants underwent high-resolution advanced brain MRI scans, computerized cognitive testing and comprehensive clinical symptoms evaluations.

A [smaller study in the U.K. last year showed similar results for treating fatigue and cognitive decline in 10 long COVID patients](#), though it lacked a control group.

HBOT studies have previously shown the ability to treat the effects of stroke, traumatic brain injury, age-related cognitive decline and even PTSD, Aviv Clinics said.

The Sagol Center at Shamir Medical Center — the world’s largest hyperbaric medicine and research facility — is partnering with Aviv Clinics on a global network of clinics offering a two- to three-month regimen designed to improve cognitive and physical decline.

Headquartered in The Villages, Florida, Aviv Clinics said the protocols and evaluation procedures used in the long COVID study are available at Aviv Clinics in Florida and Dubai and at Shamir Medical Center in Israel.

## Cancer Drug Significantly Cuts Risk for COVID-19 Death

Source: <https://www.medscape.com/viewarticle/976786>

July 08 – Treatment with oral **sabizabulin** (Veru Pharmaceuticals) cut the risk for death by more than 55% in hospitalized patients with COVID-19, an interim analysis of a phase 3 placebo-controlled trial found.

Sabizabulin treatment consistently and significantly reduced deaths across patient subgroups “regardless of standard of care treatment received, baseline WHO scores, age, comorbidities, vaccination status, COVID-19 variant, or geography,” study investigator Mitchell Steiner, MD, chairman, president, and CEO of Veru, said in a [news release](#). The company has submitted an emergency use authorization request to the US Food and Drug Administration to use sabizabulin to treat COVID-19.

Sabizabulin, [originally developed](#) to treat metastatic castration-resistant [prostate cancer](#), is **a novel, investigational, oral microtubule disruptor with dual antiviral and anti-inflammatory activities**. Given the drug’s mechanism, researchers at Veru thought that sabizabulin could help treat lung inflammation in patients with COVID-19 as well.

Findings of the interim analysis are based on 150 adults hospitalized with moderate to severe COVID-19 at high risk for [acute respiratory distress syndrome](#) and death. The patients were randomly allocated to receive 9 mg oral sabizabulin (n = 98) or placebo (n = 52) once daily for up to 21 days.

Overall, the mortality rate was 20.2% in the sabizabulin group vs 45.1% in the placebo group. Compared with placebo, treatment with sabizabulin led to a 24.9–percentage point absolute reduction and a 55.2% relative reduction in death (odds ratio, 3.23; P = .0042).

The key secondary endpoint of mortality through day 29 also favored sabizabulin over placebo, with a mortality rate of 17% vs 35.3%. In this scenario, treatment with sabizabulin resulted in an absolute reduction in deaths of 18.3 percentage points and a relative reduction of 51.8%.

**Sabizabulin led to a significant 43% relative reduction in ICU days, a 49% relative reduction in days on [mechanical ventilation](#), and a 26% relative reduction in days in the hospital compared with placebo.**

Adverse and serious adverse events were also lower in the sabizabulin group (61.5%) than the placebo group (78.3%).

The data are “pretty impressive and in a group of patients that we really have limited things to offer,” Aaron Glatt, MD, a spokesperson for the Infectious Diseases Society of America and chief of infectious diseases and hospital epidemiologist at Mount Sinai South Nassau in Oceanside, New York, told *Medscape Medical News*. “This is an interim analysis and obviously we’d like to see more data, but it certainly is something that is novel and quite interesting.”



David Boulware, MD, MPH, an infectious disease expert at the University of Minnesota, told the *New York Times* that the large number of deaths in the placebo group seemed "rather high" and that the final analysis might reveal a more modest benefit for sabizabulin.

"I would be skeptical" that the reduced risk for death remains 55%, he noted.

●► The analysis was [published online](#) July 6 in *NEJM Evidence*.

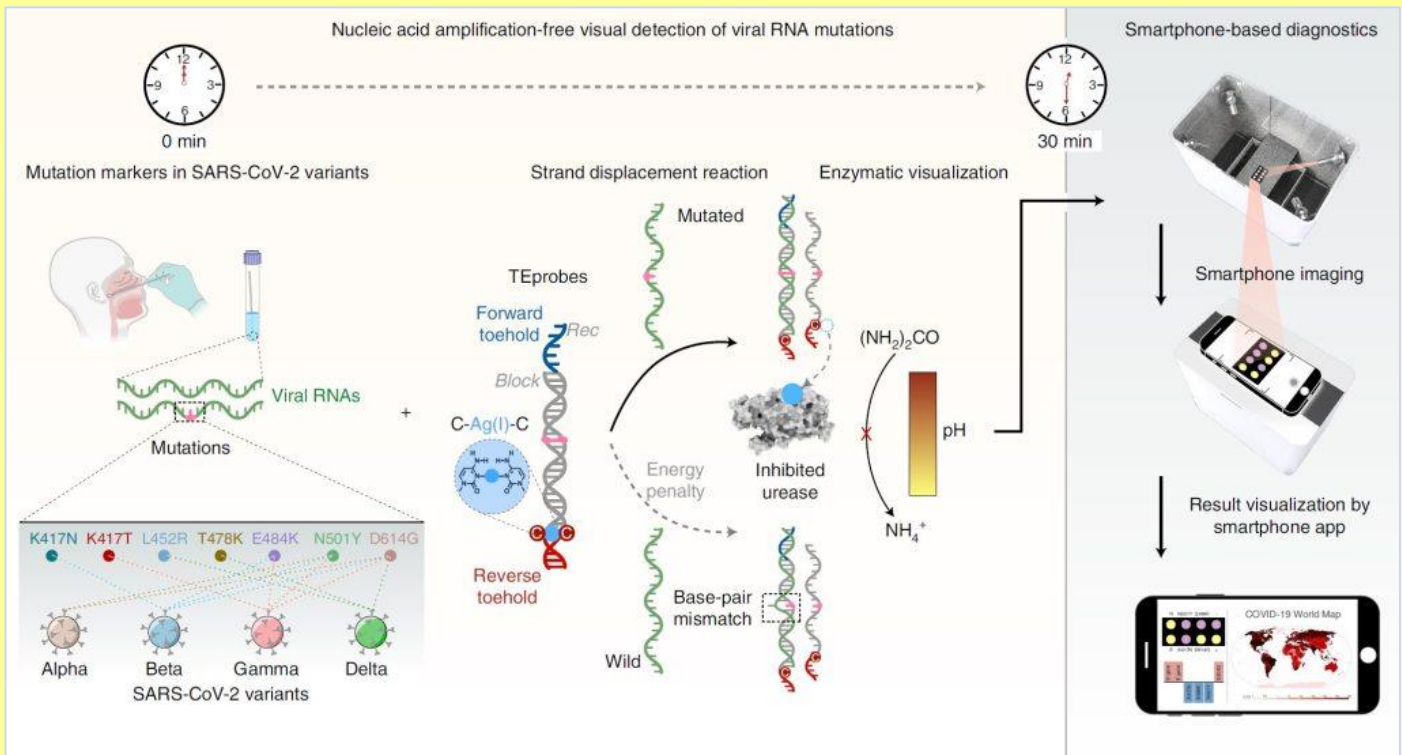
## Smartphone Test Detects SARS-CoV-2 Variants at Single Nucleotide Resolution

Source: <https://www.genengnews.com/topics/translational-medicine/infectious-diseases/smartphone-test-detects-sars-cov-2-variants-at-single-nucleotide-resolution/>

July 18 – The SARS-CoV-2 virus is continuously evolving. The ability to detect the evolving variants specifically and efficiently is a key step in combating the progress of the COVID-19 pandemic that contrary to popular notions, is far from over.

Scientists at Sichuan University in Chengdu and Tsinghua University in Beijing have developed an inexpensive enzymatic colorimetric assay that can simultaneously detect the presence of SARS-CoV-2 and discriminate among mutations specific to alpha, beta, and gamma variants. **Each test costs only about \$0.30 and provides answers within 30 minutes.**

The steps of this assay are detailed in an article in the journal *Nature Biomedical Engineering* titled, "[A paper-based assay for the colorimetric detection of SARS-CoV-2 variants at single-nucleotide resolution.](#)"



Diagnostics of SARS-CoV-2 variants with MARVE. [Zhang T, et al. *Nature Biomedical Engineering*, 2022]

"The assay, which we integrated into foldable paper strips, leverages nucleic acid strand-displacement reactions, the thermodynamic energy penalty associated with single-base-pair mismatches, and the metal-ion-controlled enzymatic cleavage of urea to amplify the recognition of viral RNAs for the colorimetric readout of changes in pH via a smartphone," the authors noted.

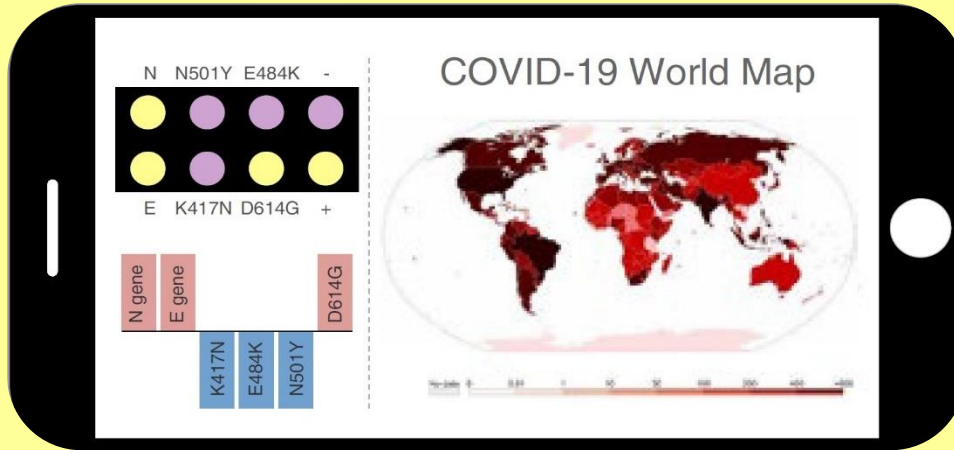
The lack of affordable and scalable diagnostic tools to detect SARS-CoV-2 variants is impeding population-wide detection of infections and epidemiological surveillance. As new variants arise, doubts around viral transmission, pathogenicity, and vaccine effectiveness can only be addressed through prompt and accurate detection of variants, globally.





Ideally, screens for SARS-CoV-2 variants should be able to detect single nucleotide mutations in viral RNAs, provide quick answers, and adopt a flexible multiplexed approach that enables the identification of multiple existing variants as well as emerging variants with simple modifications.

“The need for scalable SARS-CoV-2 tests that allow variants to be resolved has motivated our efforts to explore single nucleotide-resolved viral RNA detection strategies,” the authors noted.



The authors have named the new assay **MARVE** for “multiplexed, nucleic-acid-amplification-free, single-nucleotide-resolved viral evolution.”

The test does not require the amplification of viral nucleic acids using PCR or RT-PCR and yet detects viral RNAs at single nucleotide resolution. To accomplish this, the researchers used a programmable enzyme-induced nucleic acid strand displacement process to detect individual viral RNAs in

the sample. This eliminates the need for nucleic acid amplification and reduces the cost of production of the test and the turnaround time for conclusive readouts.

The strand displacement reaction is made possible through a double-stranded DNA probe, which the authors call the toehold exchange DNA probe (TEprobe), designed to recognize mutations in SARS-CoV-2 variants (alpha, beta, gamma, and delta). The TEprobe consists of a pair of terminal single-stranded overhangs that form the forward and reverse toeholds. Designed sequences of the forward and reverse toeholds enable the TEprobe to precisely control the net thermodynamic energy of the strand displacement reaction induced by viral RNAs in the sample. The authors successfully distinguished mutant and wild viral RNAs through the strand displacement reaction based on the thermodynamic energy penalty from a single mismatch in the sequence.

Recognition of viral RNAs releases a silver ion that inhibits urease—an enzyme that breaks urea down into ammonia, carbon dioxide, and water. The release of the metal ion thereby controls the cleavage of urea, the level of resulting ammonium ions, and the pH. Known mutations in SARS-CoV-2 variants can therefore be identified visually using pH indicators.

“To demonstrate the simplicity, portability, and multiplexing capability of MARVE, we measured SARS-CoV-2 and its five key variants in an integrated testing paper using a smartphone. We also developed a smartphone application to guide the diagnosis, and to visualize and record the test results for clinical and cold-chain food samples, facilitating on-site profiling of SARS-CoV-2 variants by minimally trained personnel,” the authors noted.

The team tested the assay on 50 throat swab samples and simultaneously detected the presence of SARS-CoV-2 and mutations specific to the alpha, beta, and gamma variants of SARS-CoV-2 variants. They showed that their readouts match results obtained through real-time quantitative polymerase chain reaction and RNA sequencing.

This customizable and inexpensive paper-based assay that detects the COVID-19 virus and its variants can aid viral surveillance and population-wide diagnosis and screening without the need for complex and time-consuming laboratory tests.

## As bioweapons negotiators prepare to meet amid a pandemic and torrents of disinformation, can they accomplish anything?

By Yong-Bee Lim

Source: <https://thebulletin.org/2022/07/as-bioweapons-negotiators-prepare-to-meet-amid-a-pandemic-and-torrents-of-disinformation-can-they-accomplish-anything/>

July 15 – One fall day in 2006, Alexander Litvinenko, a Russian defector who once worked in Moscow’s secret intelligence community and who became a prominent Kremlin critic in the United Kingdom, ate sushi for lunch before [meeting](#) with two former colleagues from his spy agency days at the Pine Bar in London’s Millennium Hotel. The anti-corruption crusader was [reportedly](#) set to travel to Spain to investigate the Russian mob there. But just a few short weeks later, Litvinenko was dead. He was poisoned by a radioactive substance in his tea called polonium-210, allegedly mixed in by his former security service colleagues.



Litvinenko's poisoning preceded a handful events, [ranging from assassinations to large-scale chemical release](#) attacks, that involved the use of unconventional weapons in the last several years—a dangerous indication that certain governments are both working on these weapons and showing an increased willingness to use them. Meanwhile, Russia has mounted an increasingly aggressive disinformation campaign that accuses the United States of harboring an illegal bioweapons program, a claim that [credible sources have noted is not substantiated by fact](#). It adds up to a troubling picture: Important norms against the use of chemical weapons have already eroded, and norms against the use of biological weapons may be next. One of Litvinenko's alleged killers, Andrei Lugovoi, is now [celebrated](#) as a hero in some Russian circles and is a deputy in the Russian Duma, or parliament.

The fraying of the norms against the use of biological and chemical weapons couldn't come at a more important time.

The Biological Weapons Convention, the treaty that bans the development, production, stockpiling, acquisition, and transfer of biological weapons, is up for its every-five-years review at a time of both serious geopolitical friction and serious evidence of the risks that biological events like the COVID pandemic can pose.

It could be a moment to re-invigorate arms control and make the world safer from the risks of biological threats; it is clear there are big issues for negotiators to tackle. However, there is also a possibility that this might not happen. Like all political institutions, the bioweapons treaty has its share of challenges, including finding common ground among countries with diverse goals and interests.

Treaty members have every incentive to cooperate and make real progress, but the negotiators face the widest range of possible outcomes from the November review conference. The meeting may result in little to no progress, which could increase the perception among some people and treaty members that it is ineffective. There could also be a stunning success, with negotiators pointing to a concrete path forward on important issues such as compliance with the treaty and better mechanisms to address the new bioweapons threats that emerging technologies and the current trajectory of the life sciences could create. Realistically, the outcome is likely to be somewhere in between: an outcome where members take small, but concrete steps in addition to affirming their commitment to the treaty for the next five years and agreeing to meet on big issues between the major review conferences.

In 1969, President Richard Nixon decided that the United States would unilaterally dismantle its offensive biological weapons research and development program, which included antipersonnel agents such as anthrax and tularemia as well as incapacitating agents such as the pathogens that cause brucellosis and Q-fever. The convention entered into force in 1975.

Unconvinced that the United States had really given up its program, the Soviet Union [secretly maintained](#) a massive bioweapons research and production infrastructure throughout the Cold War. The country produced mass quantities of pathogens and developed ways to disperse diseases like anthrax, smallpox, and plague through missiles and other delivery systems. It wasn't until 1992, after the fall of the Soviet Union, that then Russian President Boris Yeltsin acknowledged the illicit [program](#) and ordered it closed. However, a [recent US government assessment](#) notes that Russia maintains an offensive biological weapons program to this day.

Every five years, the members of the treaty, which now includes 184 countries, meet to plan for the next five years of treaty implementation. The review conferences have propelled major policy advances in the past. For example, after the 1996 review conference, treaty members [agreed](#) to a process for exchanging annual reports on their biological activities. One of the greatest challenges for the treaty has been the inability of countries to reach some sort of agreement on a means of verifying compliance, a significant issue given that countries have been accused of violating it in the past. The United States [rejected](#) a major proposal for verification in 2001 after deeming it too intrusive for its biopharmaceutical industry and biodefense programs. Many countries now hope to fuel economic growth by developing their biotech and pharmaceutical industries and may share similar concerns to those that led the United States to reject the verification proposal in the early 2000s.

This year's review conference is an important year for the treaty. Negotiators heading to Geneva, Switzerland, this fall know full well the devastation of biological events. COVID-19 has killed millions of people and continues to spin off dangerous new variants with alarming regularity. Monkeypox, a disease that was once rarely seen outside of a few African countries, is now breaking out in countries around the world, laying bare continuing flaws in infectious disease response policies.

Meanwhile, a Russian disinformation campaign is in overdrive, trying to spin US aid to Ukraine and elsewhere for public and animal health as bioweapons programs. Add to that the head-spinning advances in science that create new so-called dual-use risks via technology that can be used for peaceful or non-peaceful purposes, and the world seems awash in biological risks. Experts and negotiators agree that the bioweapons treaty should play an important role in reducing these risks.

"While COVID-19 was not the result of a biological weapon, the pandemic is a wake-up call for all of us," Bonnie Jenkins, a top US diplomat for arms control, said in 2021. "We need to address not only the latest challenge, but those that may lie ahead, whether natural, accidental, or deliberate in origin. To do so, we must strengthen the [Biological Weapons Convention]."

Bioweapons expert Jez Littlewood noted that four discreet outcomes are possible at the upcoming review conference. On the one hand, the meeting could reach an inconclusive end. Review conferences generally close with an agreement that re-affirms the treaty and includes so-called "additional



understandings,” which, Littlewood [wrote](#) earlier this year, “interpret, define or elaborate the meaning or scope of a provision of the [treaty] or provide instructions, guidelines or recommendations on how a provision should be implemented.” Given the level of global acrimony, it is possible that treaty members will not agree to anything. This outcome may dent the prestige of the treaty and lead to a defunding of the small Implementation Support Unit that serves as an administrative office that implements and supports all 184 members in activities related to this agreement.

On the other hand, the meeting could end with tangible progress on major priorities. Treaty members could agree to form working groups to discuss thorny issues like assuring compliance with the treaty or even sanction negotiations around these issues. The United States, Russia, and China have each suggested interest in strengthening compliance mechanisms within the treaty, after negotiations around a verification protocol fell apart in 2001. “The three countries have different visions, but share the idea of having specialized working groups explore how to strengthen and revitalize the treaty.” Littlewood and biosecurity expert Filippa Lentzos [wrote](#) in the *Bulletin* in March.

Most likely, however, international divisions will prevent the treaty members from accomplishing the ambitious possible outcomes and they will instead make incremental progress. They may, for example, find ways to provide greater staffing to the administrative unit that supports the treaty, which currently has just three employees (compared to hundreds or thousands in organizations that manage [nuclear](#) or [chemical weapons](#) treaties).

On the surface, obstacles like Russia’s recent decision to air its claims about a US bioweapons program to treaty members in the months before the review conference may make achieving positive outcomes more difficult to achieve. But, as Robert Gates, a secretary of defense for former President Barack Obama, has noted, politicians can engage in excessive [performative theater](#) during open hearings, but can be thoughtful and insightful behind closed doors. Factors like the ongoing pandemic could push treaty members together. Let’s hope that happens.

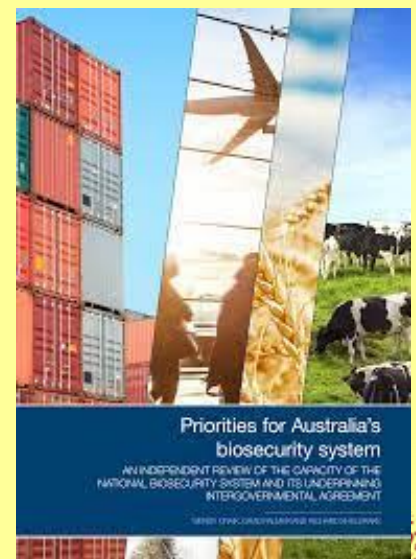
**Yong-Bee Lim** is the Deputy Director at the Janne E. Nolan Center on Strategic Weapons, which is a non-partisan institute of the Council on Strategic Risks. He focuses on a broad variety of issues, including biosecurity, biodefense strategy, emerging and converging technologies, national security policy, and issues that arise at the nexus of climate change, ecological degradation, and biology. He was chosen as a Johns Hopkins Center for Health Security Emerging Leaders in Biosecurity Initiative Fellow in 2018. In addition, he was a recipient of the Presidential Scholarship for the Biodefense Program at George Mason University’s Schar School of Policy and Government. In the past, he also worked as a researcher in a number of government institutions, including the Health and Human Services Department, the Department of Defense, and the Department of Energy’s Lawrence Livermore National Laboratory. Yong-Bee holds a doctorate and a master degree in biodefense from George Mason University, as well as a bachelor’s degree in psychology from the same institution. Lim is a member of the [Bulletin Editorial Fellows Program](#).

## Is Australia’s Biosecurity System Ready for Foot-and-Mouth Disease?

By Andrew Henderson

Source: <https://www.homelandsecuritynewswire.com/dr20220719-is-australia-s-biosecurity-system-ready-for-footandmouth-disease>

July 19 – In 2017, an [independent review](#) of the capacity of Australia’s biosecurity system classified it as an essential national asset. The [report](#) stated that the system is built on shared responsibility—that is, the cooperation, investment and actions of all governments (state, territory and federal), industry bodies, exporters, importers, farmers, miners, tourists, researchers and the broader Australian community. The review, along with at least 11 others since 2002, highlighted the inevitable and growing threats to Australia’s security and prosperity. Chief among these are the biosecurity risks that threaten one of Australia’s greatest strategic advantages: our ability to feed and clothe twice our own population, our food security and ultimately our national security. Australia’s biosecurity system protects our economy, our environment and the way of life of all Australians. The consequences of realized biosecurity risks rate as high as those from climate change and geopolitical volatility and could be more disruptive than a global pandemic. Those closest to the biosecurity system believe that it should be classed as part of Australia’s critical infrastructure, a system of national significance. One of the risks we face today is foot-and-mouth disease, or FMD. Its arrival here is not inevitable, but it is increasingly likely. Detected last week in the tourist hotspot of Bali, the disease is closer to mainland Australia now than it has been in the 150



years since it was last eradicated. Australia's biosecurity system works across a continuum that comprises activities pre-border, at the border and post-border. Prevention always being better than a cure, activities pre-border and at the border have been ramped up since FMD was first reported in Indonesia earlier in 2022. But with its progression towards Australia, the probability of an outbreak within the next five years has now risen to nearly 12%. This necessitates a laser focus on how the biosecurity system reacts post-border should the unthinkable occur. An FMD outbreak in Australia is estimated to have an \$80–100 billion direct impact to Australia's economy. That cost factors in the immediate loss of market access for Australia's red meat, livestock, wool and dairy products following a reported incursion. That would be an immediate and heavy blow to a nation that exports an average of 70% of what it produces. Concurrently, a national livestock standstill—a pause on the movement of all FMD-susceptible livestock species across the entire country—will be ordered by authorities while they investigate the location, extent and spread of the disease. A short- to medium-term food protein shortage is likely to follow. These measures and others are laid out in the Australian veterinary emergency plan, which contains the nationally agreed approach for responding to emergency animal diseases. These arrangements form a critical part of the post-border biosecurity system, and their success will determine the ultimate extent and impact of an outbreak.

Underpinning these arrangements is Australia's livestock traceability system, the National Livestock Identification System. It's the contact-tracing system for FMD-susceptible livestock species and it will be relied upon to track and trace animals in the early stages of an outbreak. It will be used to isolate animals and then as a monitoring and surveillance tool following the destruction of infected animals. The more effective these systems are, the sooner an outbreak can be contained and eliminated. But the residual impact is ongoing. To regain access to export markets, Australia will have to prove freedom from FMD to the rest of the world. That requires an application to the World Organization for Animal Health, which can be made no sooner than three months after the destruction of the last infected animal where a vaccine program is not used, and six months where a vaccine has been used. If and when a declaration of freedom has been granted, only then will key export markets begin the process of considering whether to allow Australian trade again. That process could take years. FMD is unique among the long list of Australia's biosecurity risks because its impact is so widespread. Beyond the direct economic effects, the social fabric of rural and regional Australia would be fundamentally torn. The effects on mental health would strain already stretched services and the lives of individuals and families would be uprooted as businesses and livelihoods collapsed. From tourism to mining, few would be free of its impact. The recovery could take a generation. This matters to suburban and metropolitan Australia, too. Much of our nation's wealth comes from regional Australia—70% of the value of Australia's exports is created there. The revenue generated by this economic activity helps to pay for services in the city such as infrastructure, education and health. Without this revenue the nation's prosperity would be in jeopardy. If anything is to cause a critical failure of our biosecurity system, FMD is the disease that will do it. Such is the enormity of the challenge it presents. It will test the relationships between jurisdictions, the Commonwealth, state and national industry bodies and the broader community. Preparedness is critical. A clear-eyed understanding of the impact is required, followed by a calculated and methodical approach to ensuring the biosecurity system is up to the task. Partisan backbiting in the face of this disease is as equally useless as industry accusing governments of a lack of preparedness after years of blocking reform. Genuine cooperation in the shared responsibility of maintaining the biosecurity system is the only way Australia will prepare for and recover from the total disruption of an FMD outbreak. Collective national leadership is required, with little time to spare.

In the face of the threat, how all Australians value our biosecurity and the systems that protect our ability to produce and export food and fiber needs to radically shift. Governments must work together to ensure the resilience of the system and invest in it accordingly. The community must acknowledge and support that investment. Industry must support reforms that will strengthen livestock traceability systems because every day of inaction prolongs our re-entry into valuable export markets.

Finally, biosecurity and traceability systems must be classified as critical infrastructure and valued as systems of national significance.

**Andrew Henderson** is the principal of Agsecure, independent chair of the Safemeat Advisory Group and a former adviser to the federal government on biosecurity and the red meat and livestock sector.

## Implications Drawn from a Military Bioterror Exercise in Israel

By Tamar Berger, Itay Fogel, Lion Poles, et al.

*Health Security Volume 13, Number 2, 2015*

Source: [https://www.academia.edu/20166710/Implications\\_Drawn\\_from\\_a\\_Military\\_Bioterror\\_Exercise\\_in\\_Israel](https://www.academia.edu/20166710/Implications_Drawn_from_a_Military_Bioterror_Exercise_in_Israel)

Orange Flame is an Israeli preparedness build-up project, conducted by the Ministry of Health, that is aimed at improving national readiness and preparedness for unusual biological events. The project is intended for both medical and nonmedical organizations, and, since 2011, the exercise has also





included operational units outside the medical corps. This has provided valuable insights into the consequences of bioterror or naturally occurring outbreaks for operative functionality and for the unique medical, logistical, and administrative efforts required from the armed forces in such an event. The 2-day drill reported on here executed a notional scenario in which category A bioterror agents were dispersed, causing civil and military casualties. Military personnel observed and assessed the performances of all participating organizations and observed the employment of emergency protocols during the drill. Military sustainment and operative capabilities were significantly affected by the occurrence of an unusual biological event. Comprehensive actions to be executed during such a scenario included quarantining military bases, considering postponement of military operations, and transferring on-call missions to other bases. Logistic consequences included the need for manpower and equipment reinforcement, as well as food and water supplies in cases of suspected source contamination. The project unveiled many operational and logistic quandaries and exposed various potential effects of a bioterror attack in the military. Lessons learned were used to revise preevent national and military doctrine for unusual biological events.

## The US Just Recorded Its First Case of Polio in Almost a Decade

Source: <https://www.sciencealert.com/us-records-first-polio-case-in-almost-a-decade>



July 22 – The United States on Thursday reported its first case of polio in almost a decade.

[New York state's health department said](#) a person living in Rockland County, 30 miles (48 kilometers) north of Manhattan, had tested positive for the disease.



America last recorded a polio case in 2013, according to the Centers for Disease Control and Prevention.

The latest case was a type "indicative of a transmission chain from an individual who received the oral polio vaccine (OPV)," officials said.

The oral vaccine was discontinued in the United States in 2000. "This suggests that the [virus](#) may have originated in a location outside of the US where OPV is administered, since revertant strains cannot emerge from inactivated vaccines," [New York's health department said in a statement](#).

Officials warned healthcare providers to be on the lookout for more cases and urged people in the area who are not vaccinated to get the shot. A massive global effort has in recent decades come close to wiping out polio, a crippling and potentially fatal viral disease that mainly affects children under the age of five. Cases have decreased by 99 percent since

1988, when polio was endemic in 125 countries and 350,000 cases were recorded worldwide.

In the United States, cases declined dramatically in the late 1950s and early 1960s after a vaccine was developed.

**The last naturally occurring cases of polio in America were reported in 1979.**

OPV replicates in the gut and can be passed to others through fecal-contaminated water – meaning it won't hurt the child who has been vaccinated, but could infect neighbors in places where hygiene and immunization levels are low.

While weaker than wild poliovirus, which now exists only in Afghanistan and Pakistan, the variant can cause serious illness and paralysis in people not vaccinated against the disease.

Last month, the [World Health Organization](#) and British health officials said that a type of poliovirus derived from vaccines had been detected in London sewage samples.



## SARS-CoV-2-Specific Memory B Cell Responses after Infection or Vaccination

Source: <https://www.insideprecisionmedicine.com/topics/patient-care/coronavirus/sars-cov-2-specific-memory-be-cell-responses-after-infection-or-vaccination/>

July 22 – A new study has uncovered more details about memory B cell responses to SARS-CoV-2, the virus that causes COVID-19, after recovery from natural infection or post-vaccination. [The study](#), coauthored by David Fear, from King's College London, is published in *Viral Immunology*.

Many research studies have found that serological SARS-CoV-2-specific IgG antibody titers wane over time, yet, it is unclear whether these changes reflect potential reactivation of antigen-specific memory B cell populations.

These researchers write that, "This is especially true in the contexts of differing COVID-19 disease severity and after vaccination regimens. This study aimed to investigate these by polyclonal *in vitro* reactivation of MBC populations followed by analysis using SARS-CoV-2 antigen-specific B cell ELISpots and IgG antibody ELISAs."

Immunity to SARS-CoV-2 infection, from either natural exposure or vaccination, occurs from classical adaptive immunity, where the production of neutralizing antibodies by B cells attacks the infection and confers protection against subsequent re-exposure. This long-term protection is considered immunological memory.

Antigen-specific B cell responses to SARS-CoV-2, the authors write, "are predominantly mounted against regions within the Nucleocapsid (N) and Spike (S) protein antigens." They add that, "The evaluation of serological memory in numerous studies has shown both disease severity-associated differences in circulating antigen-specific antibody titers, as well as waning of N and S protein-specific antibodies over time after both disease resolution and vaccination."

Other studies of N- and S-specific memory B cells have shown the maintenance or an increase in these populations after either the resolution of infection or after vaccination with the BNT162b2 mRNA COVID-19 vaccine.

In one part of this study, the scientists used donor blood from 52 individuals, including health care professionals, at high risk of SARS-CoV-2 exposure. The samples came from Guy's and St Thomas' NHS Foundation Trust (GSTT) and Valentine Health Partnership as well as from patients within GSTT. Donors included healthy controls with no signs of COVID-19, asymptomatic cases, mild/moderate symptoms with negative serology, mild/moderate symptoms with positive serology, and severe COVID-19 disease, which was confirmed by PCR.

For the vaccine part of the study, 14 individuals with no known prior SARS-CoV-2 infection were recruited. Samples were taken before vaccination and/or at 1 and 6 months post-vaccination with a second dose of BNT162b2.

Results showed that among those recovered from natural infection, COVID-19 serologically-positive donors had strong antigen-specific memory B cell-associated responses. Post-vaccination, donors showed robust serological antigen-specific antibody responses against spike protein that waned over time. Memory B cell-associated responses against spike protein were also observed, but showed less waning over time.

Comparison between groups of serological N and S protein-specific IgG antibodies in donor plasma at 1 month of convalescence showed significantly higher N protein-specific IgG in both the severe group, relative to both healthy control and negative groups, and the positive group relative to both healthy control and negative groups.

"This study is of particular relevance at the moment, because with millions vaccinated, previously infected, or both, studies such as this one may tell us how long we might expect the immunity to last," says Rodney S. Russell, PhD, Editor-in-Chief of *Viral Immunology*, from Memorial University of Newfoundland, St. John's.

Understanding this process is also critical to guide development of new vaccines, including those that are more protective for cancer patients, who are at particularly [high risk of death](#) from COVID-19. Such patients can have an inadequate immune response to vaccination, according to [recent research](#) from Mayo Clinic Cancer Center.

## COVID-19 Treatment Hope Found in Anti-Inflammatory Drug

Source: <https://www.genengnews.com/virology/coronavirus/covid-19-treatment-hope-found-in-anti-inflammatory-drug/>

July 22 – The findings of a recent Phase IIa clinical trial suggest that **OP-101, a hydroxyl-polyamidoamine dendrimer-N-acetyl cysteine conjugate**, may have potential for treating systemic hyperinflammation in severe COVID-19.

A single intravenous infusion of the anti-inflammatory compound was well tolerated and reduced the risk of death or mechanical ventilation at 30 and 60 days after treatment when compared to placebo. OP-101 treatment, which targets activated macrophages, was associated with decreased serum concentrations of proinflammatory markers as well as markers of neurological injury (neurofilament light



chain and glial fibrillary acidic protein). The drug may have the potential to treat systemic inflammation and brain injury in patients with severe COVID-19 and significantly reduce their chances of death.

In the randomized, double-blind, placebo-controlled, adaptive Phase IIa trial, 24 patients classified as having severe COVID-19 across five clinical sites in the United States were randomized to receive a single intravenous dose of placebo (n = 7 patients) or OP-101 at 2 (n = 6), 4 (n = 6), or 8 mg/kg (n = 5 patients). All patients received standard of care, including corticosteroids.

“OP-101 is a novel nanotherapeutic compound that specifically targets activated macrophages and microglia, the primary immune cell in the brain,” said Aaron M. Gusdon, MD, assistant professor in the Vivian L. Smith department of neurosurgery with McGovern Medical School at UTHealth Houston. “Due to its excellent safety profile, we were excited to offer this therapy to these critically ill patients at Memorial Hermann Hospital.”

Hyperinflammation triggered by SARS-CoV-2 is a major cause of disease severity in COVID-19. OP-101 was found to be better than a placebo at decreasing inflammatory markers, as well as better at reducing markers of neurological injury, including neurofilament light chain and glial fibrillary acidic protein.

Additionally, risk for the composite outcome of mechanical ventilation or death at 30 or 60 days after treatment was 71% for patients receiving the placebo, but just 18% for patients in the pooled OP-101 treatment arms. At 60 days after treatment, 3 of 7 patients given placebo and 14 of 17 patients treated with OP-101 survived.

The data shows that OP-101 was well tolerated in the critically ill patient population and could serve as an effective treatment for patients hospitalized with COVID-19.

“Although this was a small-dose escalation trial, there was clearly a strong signal toward benefit at both acute and chronic timepoint,” Gusdon said. “The possibility that this therapy could also benefit patients with other diseases that lead to systemic inflammatory responses, including various forms of brain injury, is extremely exciting.”

●► The results of the trial were published in *Science Translational Medicine* in the article, [“Dendrimer nanotherapy for severe COVID-19 attenuates inflammation and neurological injury markers and improves outcomes in a Phase IIa clinical trial.”](#)

July 23, 2022

**World Health Organization declares rapidly spreading monkeypox outbreak a global health emergency!**



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