

# Omicron explained: Why scientists are worried

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Authorities around the world have reacted with alarm to a new coronavirus variant detected in South Africa.



Source: Reuters/Sumaya Hisham

Britain, the European Union and India are among those announcing stricter border controls as scientists carry out tests to determine if the mutation is more transmissible or infectious than other variants, or is resistant to vaccines.

## Where and when was new variant found?

South African scientists detected a small number of the variant known as B.1.1.529 on Tuesday in samples taken from November 14 to November 16.

On Wednesday, South African scientists sequenced more genomes, informed the government that they were concerned and asked the World Health Organization (WHO) to convene its technical working group on virus evolution for Friday.

The country has identified about 100 cases of the variant, mostly from its most populated province, Gauteng, where Johannesburg and Pretoria are located.

## Why is it worrying scientists?

All viruses - including SARS-CoV-2, the virus that causes Covid-19 - change over time. Most changes have little or no impact on their properties.

However, some changes may affect how easily they spread, their severity, or the performance of vaccines against them.

This variant has drawn particular scrutiny because it has more than 30 mutations of the spike protein that viruses use to get into human cells, UK health officials say.

That's about double the number of the Delta variant and makes it substantially different from the original coronavirus that current Covid vaccines were designed to counteract.



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South African scientists say some of the mutations are associated with resistance to neutralising antibodies and enhanced transmissibility, but others are not well understood, so its full significance is not yet clear.

UK Health Security Agency chief medical advisor, Susan Hopkins told BBC radio that some mutations had not been seen before so it was not known how they would interact with other ones, making it the most complex variant seen to date.

So more tests will be needed to confirm if it's more transmissible, infectious or can evade vaccines.

The work will take a few weeks, the WHO's technical lead on Covid-19, Maria van Kerkhove, said. In the meantime, vaccines remain a critical tool to contain the virus.

No unusual symptoms have been reported following infection with the B.1.1.529 variant and, as with other variants, some individuals are asymptomatic, South Africa's National Institute for Communicable Diseases (NICD) said.

## Where else has the variant been detected?

South African scientists say early signs from diagnostic laboratories suggest it has spread rapidly in Gauteng and may already be present in the country's other eight provinces.

South Africa's daily infections nearly doubled on Thursday to 2,465. The NICD did not attribute the resurgence to the new variant, though local scientists suspect it is the cause.

Neighbouring Botswana said it had detected four cases, all foreigners who arrived on a diplomatic mission and have since left the country.

Hong Kong has one case, a traveller from South Africa; Israel also has one, a traveller returning from Malawi in southern Africa, while Belgium has detected Europe's first case.

Scientists say early detection due to genomic surveillance in Botswana and South Africa may have limited the spread of the variant.

The international GISAID open database of coronavirus variants has 58 cases of B.1.1.529 registered in South Africa, six in Botswana and two in Hong Kong.

The variant is relatively easy to distinguish in PCR tests from the Delta variant, the dominant and most infectious Covid-19 mutation so far. Unlike the Delta variant, it has a mutation known as the S-gene drop-out.

However, this is not a unique identifier because the Alpha variant, first identified in Britain, also has that mutation.

## **How does the World Health Organization label variants?**

The United Nations agency said its advisers recommended that the variant be designated one of concern, its most serious level. It has been given the Greek name Omicron.

The WHO has identified four other variants - Alpha, Beta, Gamma and Delta.

It has named two variants as ones of interest, which is the next level down: Lambda, identified in Peru in December 2020, and Mu, in Colombia in January.

They had genetic changes that are known to affect virus characteristics such as transmissibility, disease severity or the ability to evade vaccines and drugs. They also caused significant community transmission or multiple Covid-19 clusters in multiple countries with increasing relative prevalence alongside increasing number of cases over time and were an emerging risk to public health.

## **ABOUT THE AUTHOR**

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