Do COVID-19 antibodies protect against a new infection?

New research aims to reveal whether healthcare workers who were already infected with COVID-19 are protected against the virus afterwards.

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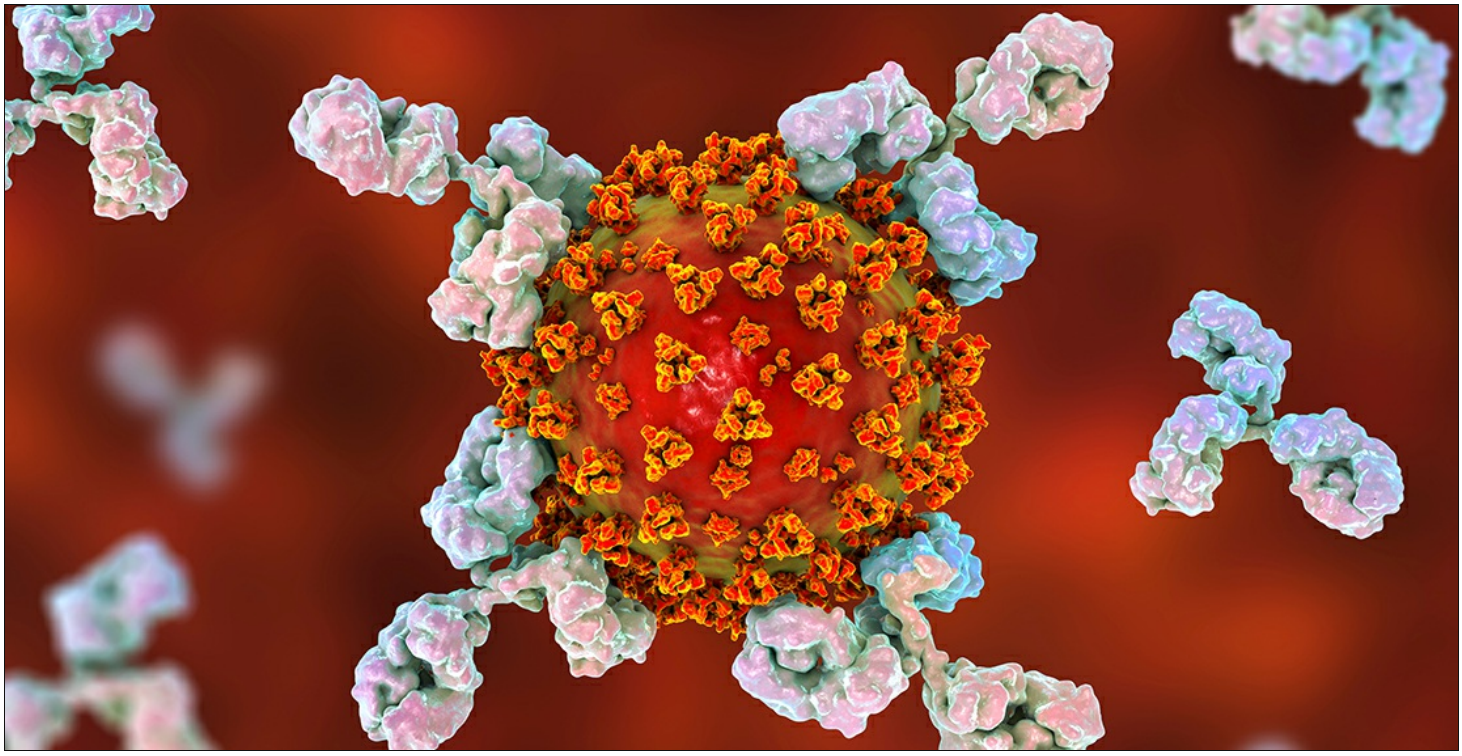

Dit is de omschrijving

Researchers from ITM, the University of Antwerp and Sciensano will follow up health workers who have already become ill with the COVID-19 virus. During a possible new outbreak of the virus, health workers are most at risk for a new infection. The research is led by ITM and supported through an accelerated procedure by the Research Foundation of Flanders (FWO) to respond to the urgency of COVID-19 research.

Antibody tests against COVID-19 are essential to find out what percentage of the population was infected. However, these antibody tests reveal nothing about the amount of protection given by antibodies during a second exposure to the virus. The scientists will investigate this by applying a new antibody detection test using a virus neutralisation test. By doing so, not only will they measure whether and how long antibodies are present, they will also investigate to what extent the antibodies are capable of neutralising the virus.

During the second part of the research, Sciensano scientists want to investigate the presence of 'memory B cells'. "After all, it is possible that no more antibodies will be found in the blood, however this does not necessarily mean that people are no longer protected. In case of new exposure to the virus, the body could possibly activate memory B-cells in order to quickly re-create antibodies," explains Isabelle Desombere, immunologist at Sciensano.

In a final part of the research, the scientists will investigate whether it is possible that an 'antibody-mediated infection' may occur. This happens when the number of antibodies against COVID-19 falls below a critical threshold. This phenomenon has already been described for other viruses such as dengue, influenza and RSV (respiratory syncytial virus). When this happens, antibodies are still present, but no longer sufficient to neutralise the virus completely, and the antibodies can therefore carry the virus into certain body cells and lead to a more serious infection.

ITM Prof Kevin Ariën, principal investigator of the study: "This research not only enables us to find out how long and how effectively antibodies provide protection after a COVID-19 infection, it is also a step in the right direction to investigate how effective vaccines will be."

The FWO has approved a total of nine research projects across Flanders, amounting to € 2.5 million.