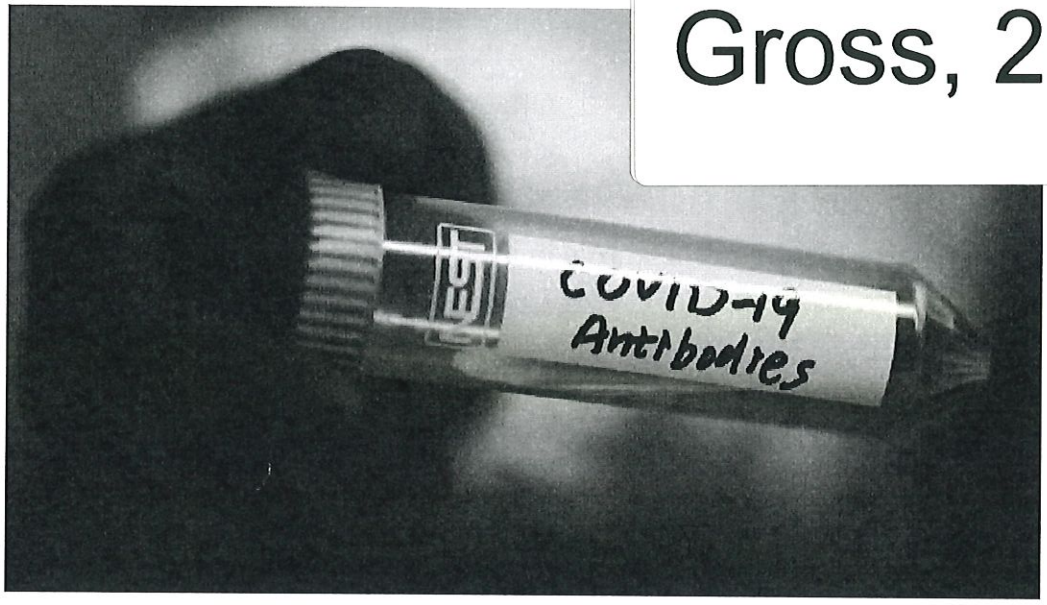
COVID-19 timeline/ Global situation

Coronavirus treatment

Covid-19 herd immunity theory dealt blow by UK research

Testing of more than 350,000 people shows that antibodies fa

Gross, 2020



Covid-19 antibodies may behave like those triggered by the common cold, dissipating over time and leaving patients susceptible once more © Thomas Peter/Reuters

Anna Gross in London OCTOBER 27 2020

The proportion of people in Britain with antibodies that protect against Covid-19 declined over the summer, according to research that adds to evidence that natural immunity can wane in a matter of months.

The number of people with antibodies fell by a quarter, from 6 per cent of the population in June to 4.4 per cent in September, according to a study of hundreds of thousands of people, one of the largest of its kind to date.

The results, from researchers at Imperial College London, are the latest sign that immunity to Covid-19 may be shortlived and cast further doubt on the idea that any population could develop herd immunity naturally.

The study suggests that the immune system's response to the virus is similar to its reaction to influenza and other coronaviruses such as the common cold, which can be contracted annually.

"This is a really big challenge to the idea that herd immunity can be achieved through natural immunity," said Helen Ward, professor of public health at Imperial, and study co-author.

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Helen Ward, Imperial College London

The research also raises questions about how long a vaccine would last. But Wendy Barclay, another co-author and head of the department of infectious disease at Imperial, said: "A good vaccine may well be better than natural immunity."

Other scientists continue to question the significance of antibody analysis, arguing that certain cell types whose presence is not detected by the tests play a crucial role in immunity.

The Imperial researchers, who tested more than 365,000 adults over five months, found a decline in antibody levels in all age groups. The smallest drop was among young adults and the largest in the elderly. A bigger decline was also seen in those who reported asymptomatic infection versus those who had symptoms.

"These data suggest the possibility of decreasing population immunity and increasing risk of reinfection as detectable antibodies decline in the population," said the study, which has not yet been peer-reviewed.

Ms Barclay said: "What we do know is that seasonal coronaviruses that circulate every year can reinfect people after six to 12 months and we suspect that the way the body reacts to these coronaviruses is similar."

Participants in the study, named React-2, were tested in three phases: June to July, July to August, and September. They were randomly selected and did not overlap.

Antibody levels were established using a rapid antibody test, also known as a lateral flow immunoassay. Some experts question the accuracy of such tests.

The evidence follows several studies published earlier this year from China, the UK and the US, which found that people's antibody levels declined sometimes as early as two months after infection.

Jonathan Ball, professor of molecular virology at Nottingham university, said that while the React-2 study "confirms suspicions" about waning immunity in elderly populations, it is less clear what the relationship is between declining immunity and susceptibility to reinfection.

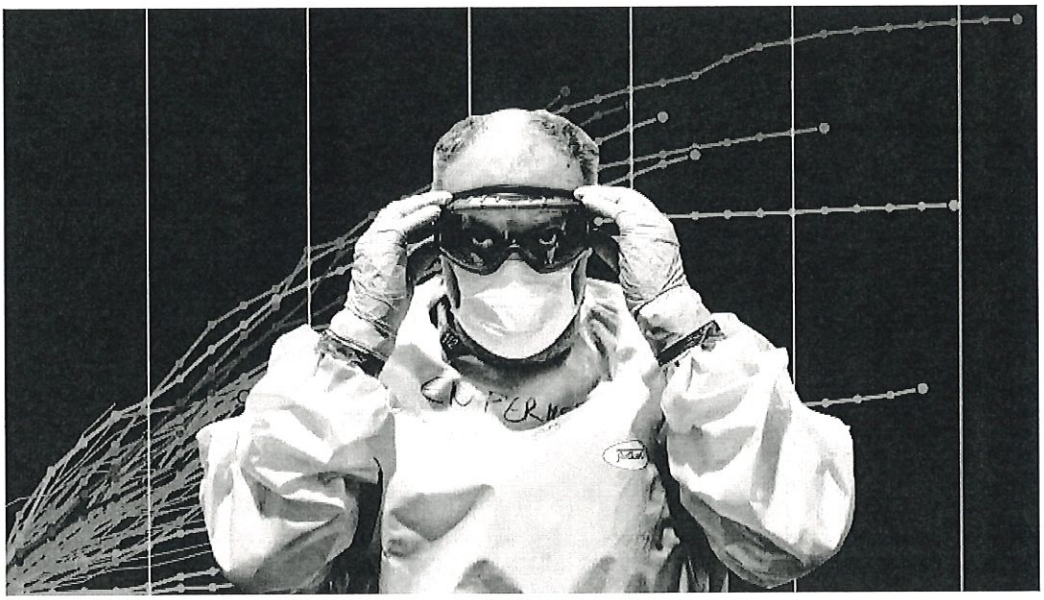
"Antibodies are likely to be important in protecting us from future infection and disease, but other arms of the immune system, for example cellular immunity, might also be key," he said.

Prof Barclay, however, disagreed that T-cells — believed to fight off infection after antibodies wane — would have much impact on overall immunity. "The fact that people get reinfected by seasonal coronaviruses suggests that T-cell mediation probably isn't very long-lasting," she said.

The React-2 study found that antibody prevalence was highest across all three rounds in London, at 9.5 per cent, compared to 1.6 per cent in the south-west of England. Antibodies were more commonly found among people of black ethnicity, at 13.8 per cent, than those of white ethnicity, at 3.6 per cent.

The study also found that most infections were reported by participants to have taken place between mid-March and mid-April.

Latest coronavirus news



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