Office for National Statistics

Statistical bulletin

Coronavirus (COVID-19) Infection Survey, antibody data, UK: 24 March 2022

Headline results of antibody data by UK country and regions in England from the Coronavirus (COVID-19) Infection Survey. This analysis has been produced in partnership with the University of Oxford, University of Manchester, UK Health Security Agency, and Wellcome Trust. This study is jointly led by the Office for National Statistics (ONS) and the Department for Health and Social Care (DHSC) working with the University of Oxford and Lighthouse Laboratory to collect and test samples.

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1 . Main points

The following statistics show the percentage of the population that are estimated to have antibodies against SARS-CoV-2, the specific virus that causes coronavirus (COVID-19).

In the week beginning 28 February 2022, the percentage of the population that were estimated to have antibodies against SARS-CoV-2 above a threshold of 179 nanograms per millilitre (ng/ml) were:

- in England, 99.0% of the adult population (95% credible interval: 98.8% to 99.2%)
- in Wales, 98.9% of the adult population (95% credible interval: 98.6% to 99.2%)
- in Northern Ireland, 98.8% of the adult population (95% credible interval: 98.2% to 99.2%)
- in Scotland, 99.0% of the adult population (95% credible interval: 98.7% to 99.2%)
- across the UK, the percentages for children ranged from 96.2% to 97.1% for those aged 12 to 15 years and from 77.0% to 81.6% for those aged 8 to 11 years

2 . Antibodies by age group

Figure 1: The percentage of the population who were estimated to have antibodies against SARS-CoV-2 remained high for those aged 8 years and over across the UK in the week beginning 28 February 2022

Modelled percentage of the population with levels of antibodies to SARS-CoV-2 at or above an antibody threshold of 179ng/ml, by age group, UK countries, 7 December 2020 to 28 February 2022

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to antibody tests for individuals living in private households.
3. In Northern Ireland, the number of people sampled is low compared with England, Wales and Scotland; therefore, adults aged 50 to 69 years are included in the same age group, and those aged 70 years and over are included in the same age group.
4. All estimates are subject to uncertainty, given that a sample is only part of the wider population. A credible interval gives an indication of the uncertainty of an estimate from data analysis.
5. The denominators used for antibodies are the total for each age group in the sample at that particular time point, then post-stratified by the mid-year population estimate.
6. Estimates show the percentage of the population who are estimated to have antibodies against SARS-CoV-2 above an antibody threshold of 179 ng/ml.
7. Estimates for children aged 8 to 15 years are not available before 29 November 2021.

Download the data

.xlsx

In the week beginning 28 February 2022, the percentage of the adult population estimated to have antibodies against SARS-CoV-2 above an antibody threshold of 179 ng/ml remained high across all regions of England. Regional data and percentages of the population who are estimated to have antibodies above the previously reported antibody threshold of 42 ng/ml, can be found in the accompanying dataset.

3 . Coronavirus (COVID-19) Infection Survey data

Coronavirus (COVID-19) antibody and vaccination data for the UK
Dataset | Released 24 March 2022
Antibody data by UK country and regions in England from the Coronavirus (COVID-19) Infection Survey. This analysis has been produced in partnership with the University of Oxford, University of Manchester, UK Health Security Agency and Wellcome Trust. This study is jointly led by the Office for National Statistics and the Department for Health and Social Care (DHSC) working with the University of Oxford and Lighthouse Laboratory to collect and test samples.

4 . Glossary

Antibodies

We measure the levels of antibodies in people who live in private households to understand who has had coronavirus (COVID-19) in the past, and the impact of vaccinations. It takes between two and three weeks after infection or vaccination for the body to make enough antibodies to fight the infection. Antibodies can help prevent individuals from getting the same infection again. Once infected or vaccinated, antibodies remain in the blood at low levels and can decline over time.

SARS-CoV-2

This is the scientific name given to the specific virus that causes COVID-19.

Credible interval

A credible interval gives an indication of the uncertainty of an estimate from data analysis. A 95% credible interval is calculated so that there is a 95% probability of the true value lying in the interval.

5 . Measuring the data

Reference dates

The antibody estimates for the most recent week in this publication include data from 28 February to 6 March 2022.

Our methodology article provides further information around the survey design, how we process data, and how data are analysed. The Quality and Methodology Information explains the strengths and limitations of the data, methods used, and data uses and users.

More information on measuring the data is available in the Coronavirus (COVID-19) Infection Survey statistical bulletin.

Survey data

The analysis on antibodies in this bulletin is based on blood test results taken from a randomly selected subsample of individuals aged eight years and over who live in private households. The survey excludes those in hospitals, care homes and other communal establishments. The blood samples are used to test for antibodies against SARS-CoV-2.

Antibodies and immunity

Antibody positivity is defined by having a fixed concentration of antibodies in the blood. A negative test result occurs if there are no antibodies, or if antibody levels are too low to reach a threshold at the time of testing. It does not mean that their antibody level is at zero or that a person has no protection against COVID-19. Additionally, there are other parts of the immune system that will offer protection, for example, a person's T-cell response. This will not be detected by blood tests for antibodies. A person's immune response is affected by a number of factors, including health conditions and age.

Our blog on antibodies and immunity gives further information on the link between antibodies and immunity and the vaccine programme. Our blog on vaccine effectiveness provides information on the effectiveness of vaccinations against Alpha and Delta variants, which is based upon the research conducted by partners from the University of Oxford.

Measuring antibody positivity

Our antibody threshold is currently 179 nanograms per millilitre (ng/ml). This threshold is based upon research by our academic partners, and used to determine the percentage of adults who are likely to have a strong enough antibody response to provide some protection from getting a new COVID-19 infection. This threshold is higher than our previously reported standard threshold of 42 ng/ml and will provide earlier signs of any changes in antibody levels. Antibody levels below this threshold do not mean that a person has no antibodies or immune protection at all.

This antibody threshold was identified as providing a 67% lower risk of getting a new COVID-19 infection with the Delta variant after two vaccinations with either Pfizer or AstraZeneca vaccines, compared with someone who was unvaccinated and had not had COVID-19 before. It is unlikely that this threshold will provide equivalent protection against the Omicron variant, and we will keep the threshold used in our analysis of antibodies under regular review. We may update the threshold used in our antibody tests if research shows that an alternative threshold would identify changes in antibody levels earlier.

The test used for spike antibodies measures their concentration in ng/ml. The antibody threshold of 179 ng/ml corresponds to 100 binding antibody units (BAU)/ml using the World Health Organization's (WHO) standardised units (enabling comparison across different antibody assays).

6 . Related links

Coronavirus (COVID-19) Infection Survey, UK
Bulletin | Updated weekly
Estimates for England, Wales, Northern Ireland and Scotland. This survey is being delivered in partnership with the University of Oxford, University of Manchester, UK Health Security Agency and Wellcome Trust.

Coronavirus (COVID-19) Infection Survey, characteristics of people testing positive for COVID-19 in England
Bulletin | Updated fortnightly
Characteristics of people testing positive for COVID-19 from the Coronavirus (COVID-19) Infection Survey, including antibody data by UK country, and region and occupation for England. Antibodies data published before 3 February 2021 are available in this series.

Coronavirus (COVID-19) Infection Survey technical article: Analysis of characteristics associated with vaccination uptake
Article | Released 15 November 2021
Analysis of populations in the UK by likelihood of being vaccinated against COVID-19 using the Coronavirus (COVID-19) Infection Survey. This survey is being delivered in partnership with University of Oxford, University of Manchester, UK Health Security Agency and Wellcome Trust.

Coronavirus (COVID-19) Infection Survey Technical Article: Impact of vaccination on testing positive in the UK: October 2021
Technical article | Released 18 October 2021
The reduction in risk of testing positive for COVID-19 associated with vaccination overall and by different vaccine types using data from the Coronavirus (COVID-19) Infection Survey. Two time periods were analysed; when the Alpha variant was dominant in the UK (1 December 2020 to 16 May 2021), and when the Delta variant was dominant (17 May to 14 August 2021).

Coronavirus (COVID-19) Infection Survey QMI
Methodology | Released 16 July 2021
Quality and Methodology Information for the Coronavirus (COVID-19) Infection Survey (CIS), detailing the strengths and limitations of the data, methods used, and data and users.