

Article

Coronavirus (COVID-19) Infection Survey: antibody data for the UK: 3 February 2021

Antibody data by UK country and English regions from the Coronavirus (COVID-19) Infection Survey. This survey is being delivered in partnership with University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

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1 . Main points

- In England, an estimated 1 in 7 people (95% confidence interval: 1 in 7 to 1 in 6) would have tested positive for antibodies against SARS-CoV-2 on a blood test in the 28 days up to 18 January 2021, suggesting they had the infection in the past.
- In Wales, an estimated 1 in 9 people (95% confidence interval: 1 in 12 to 1 in 7) would have tested positive for antibodies against SARS-CoV-2 on a blood test in the 28 days up to 18 January 2021, suggesting they had the infection in the past.
- In Northern Ireland, an estimated 1 in 11 people (95% confidence interval: 1 in 17 to 1 in 7) would have tested positive for antibodies against SARS-CoV-2 on a blood test in the 28 days up to 18 January 2021, suggesting they had the infection in the past.
- In Scotland, an estimated 1 in 10 people (95% confidence interval: 1 in 12 to 1 in 9) would have tested positive for antibodies against SARS-CoV-2 on a blood test in the 28 days up to 18 January 2021, suggesting they had the infection in the past.
- The highest percentages of people testing positive for antibodies were those aged 80 years and over in England and Scotland, those aged 16 to 24 years in Wales and those aged 25 to 69 years in Northern Ireland in the 28 days up to 18 January 2021.

2 . Overview

In this article, we refer to the number of coronavirus (COVID-19) infections within the community population; community in this instance refers to private residential households, and it excludes those in hospitals, care homes and/or other institutional settings in England.

This article presents analysis on past infections, which we define as testing positive for antibodies to SARS-CoV-2 for England, Wales, Northern Ireland and Scotland – based on findings from the COVID-19 Infection Survey in the UK. SARS-CoV-2 is the scientific name given to the specific virus that causes COVID-19. More information on our headline estimates of the overall number of positive cases in England, Wales, Northern Ireland and Scotland are available in our [latest bulletin](#).

Previous antibodies data were published in [Coronavirus \(COVID-19\) Infection Survey: antibody data for the UK, January 2021](#) on 19 January 2021 as part of a [series of articles](#) on the characteristics of those testing positive for COVID-19. To make the antibodies data and analysis easier to find, all future releases will be published in this [Coronavirus \(COVID-19\) Infection Survey: antibody data for the UK](#) article series.

Our [methodology article](#) provides further information around the survey design, how we process data, and how data are analysed. The [study protocol](#) specifies the research for the study. Further information on what the analysis covers is provided at the start of each section.

About this analysis

The analysis in this section of the article is based on blood test results taken from a randomly selected subsample of individuals aged 16 years and over, which are used to test for antibodies against SARS-CoV-2. This can be used to identify individuals who have had the infection in the past or have developed antibodies as a result of vaccination.

It takes between two and three weeks after infection or vaccination for the body to make enough antibodies to fight the infection. Antibodies remain in the blood at low levels, although these levels can decline over time to the point that tests can no longer detect them. Having antibodies can help to prevent individuals from getting the same infection again.

We measure the presence of antibodies to understand who has had coronavirus (COVID-19) in the past and the impact of vaccinations. Once infected, the length of time antibodies remain at detectable levels in the blood is not fully known. It is also not yet known how having detectable antibodies, now or at some time in the past, affects the chance of getting COVID-19 again.

We have changed the way we report our antibody estimates and are now presenting weighted estimates for 28-day periods of antibody positivity for England, Wales, Northern Ireland and Scotland, rather than monthly estimates. This approach will allow us to provide more frequent updates on antibody data. We also present the weighted estimates of antibody positivity for regions of England and, for the first time, broken down by age for each of the UK countries. Please note that these monthly estimates cannot be directly compared with previously published antibody estimates.

We will also be increasing our antibody publication to fortnightly.

More about coronavirus

- Find the latest on [coronavirus \(COVID-19\) in the UK](#).
- [Explore the latest coronavirus data](#) from the ONS and other sources.
- All ONS analysis, summarised in our [coronavirus roundup](#).
- View [all coronavirus data](#).
- Find out how we are [working safely in our studies and surveys](#).

3 . Likelihood of testing positive for COVID-19 antibodies in England

An estimated 15.3% (95% confidence interval: 14.7% to 15.9%) of the population in England would have tested positive for antibodies to SARS-CoV-2 from a blood sample in the 28 days up to 18 January 2021. The estimate is weighted to be representative of the overall population and suggests that an average of 6.9 million people aged 16 years and over in England would have tested positive for antibodies to SARS-CoV-2 during this time (95% confidence interval: 6.6 million to 7.2 million). This equates to 1 in 7 people aged 16 years and over (95% confidence interval: 1 in 7 to 1 in 6).

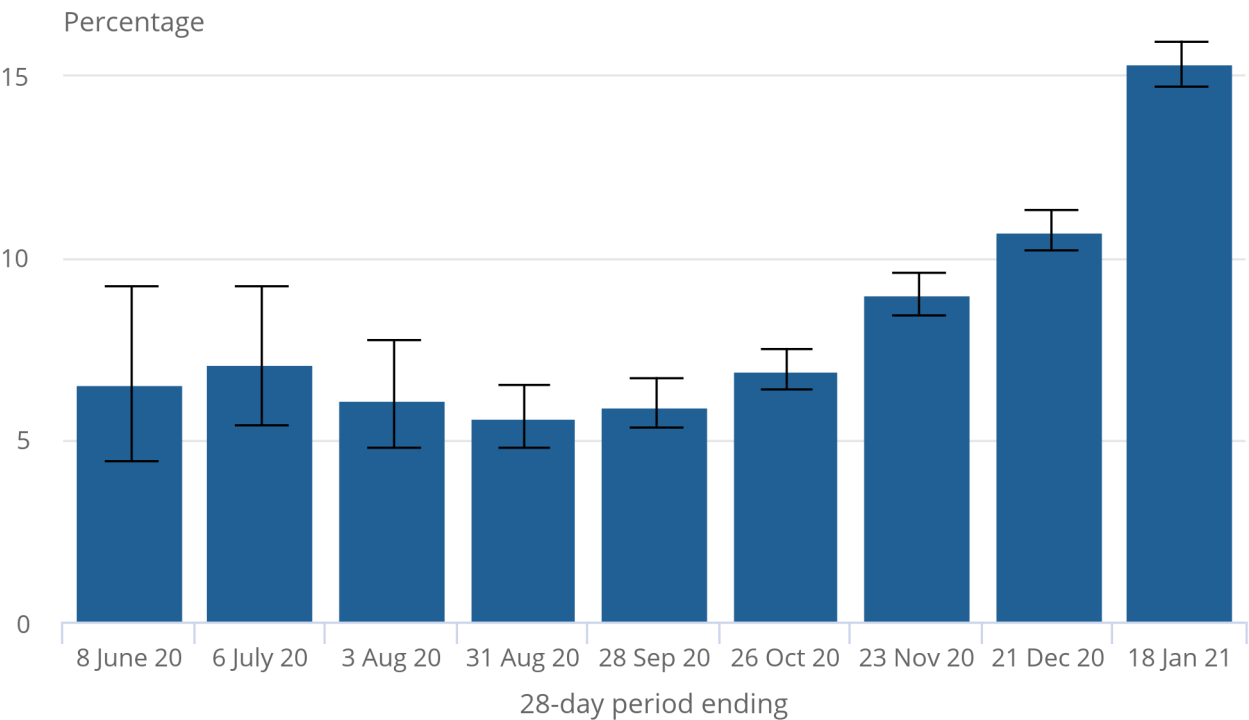
Weighted estimates of the percentage of people testing positive for SARS-CoV-2 antibodies for 28-day periods in England are presented in Figure 1; the estimates suggest there has been an increase in antibody positivity in the most recent 28-day period.

Figure 1: Around 1 in 7 people tested positive for antibodies in the 28 days up to 18 January 2021 in England

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 12 May 2020 to 18 January 2021, England

Figure 1: Around 1 in 7 people tested positive for antibodies in the 28 days up to 18 January 2021 in England

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 12 May 2020 to 18 January 2021, England



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

Regional analysis of antibody data for England

The analysis in this section uses data taken from the 28 days up to 18 January 2021 to produce weighted antibodies estimates. There is substantial variation in antibody positivity between regions, from 21.0% (95% confidence interval: 19.3% to 22.8%) in London compared with 8.3% (95% confidence interval: 6.9% to 9.9%) in the South West. The populations in the south and east of England have positivity rates below the England national average.

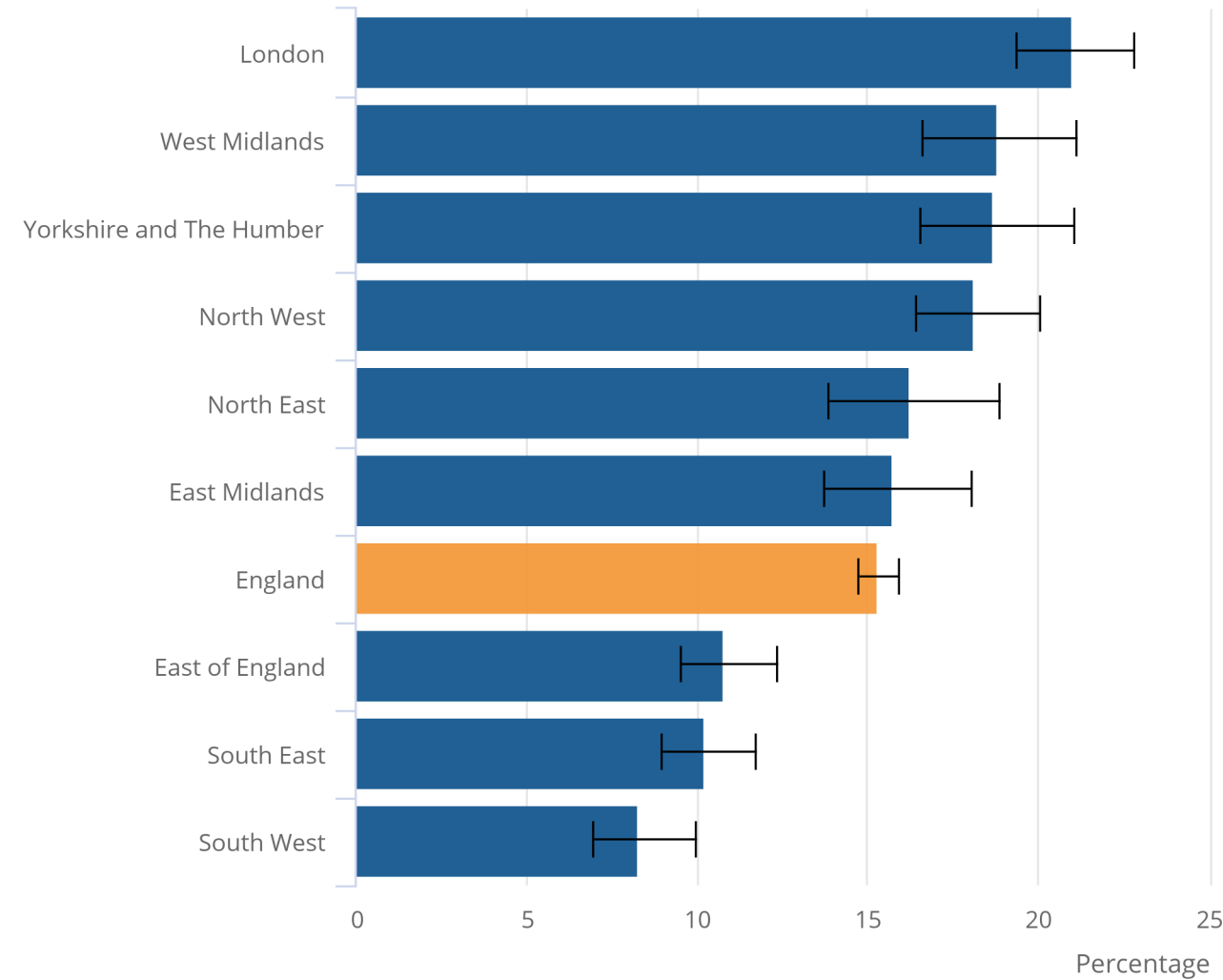
Confidence intervals are large for some regions indicating high uncertainty in those estimates but there is still evidence of differences in the percentage of people testing positive for antibodies between regions.

Figure 2: The highest antibody positivity was seen in London, followed by the West Midlands and Yorkshire and The Humber in the 28 days up to 18 January 2021

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample in the 28 days up to 18 January 2021, England

Figure 2: The highest antibody positivity was seen in London, followed by the West Midlands and Yorkshire and The Humber in the 28 days up to 18 January 2021

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample in the 28 days up to 18 January 2021, England



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

- 1. All results are provisional and subject to revision.
- 2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

Antibody data by age for England

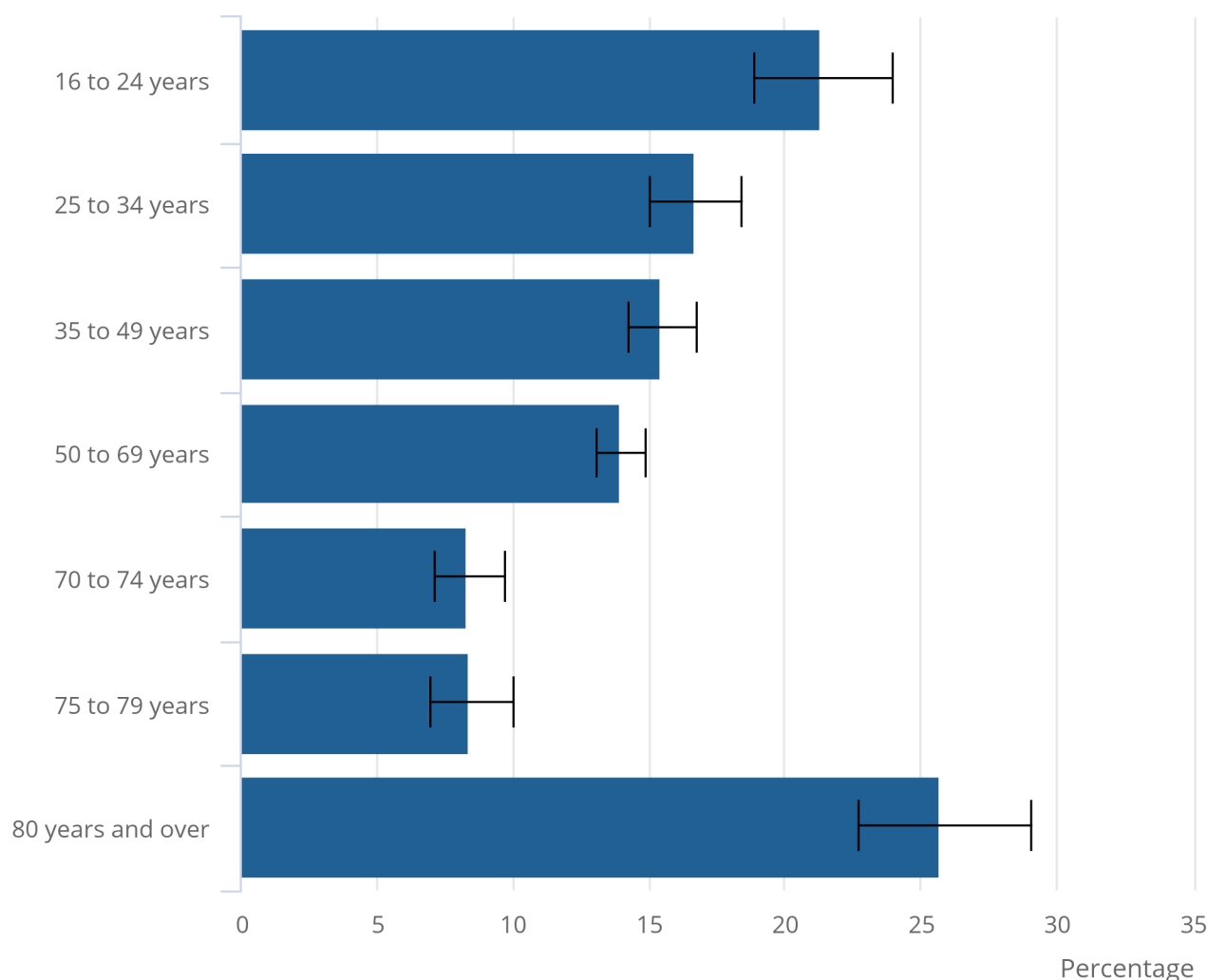
The analysis in this section uses data taken from the 28 days up to 18 January 2021 to produce weighted antibody estimates by age in England. The highest percentage of people testing positive for antibodies was those aged 80 years and over at 25.7% (95% confidence interval: 22.7% to 29.0%). The percentage of people aged 16 to 24 years testing positive for antibodies was 21.3% (95% confidence interval: 18.8% to 23.9%). The lowest number of people testing positive for antibodies was in those aged 70 to 74 years at 8.3% (95% confidence interval: 7.1% to 9.7%).

Figure 3: The highest antibody positivity was seen in those aged 80 years and over in the 28 days up to 18 January 2021 in England

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, England

Figure 3: The highest antibody positivity was seen in those aged 80 years and over in the 28 days up to 18 January 2021 in England

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, England



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

While there were 25.7% of people aged 80 years and over testing positive for antibodies, this figure relates to the community population who live in private households. Therefore, people in the age group who live in establishments such as care homes are not included in this survey. Since this group was the priority for receiving vaccinations, the true figure among those aged 80 years and over in the population may be different. An [estimated](#) 90% of people aged 80 years and over live in private households and 10% live in other establishments such as care homes.

4 . Likelihood of testing positive for COVID-19 antibodies in Wales

An estimated 11.2% of the population in Wales would have tested positive for antibodies to SARS-CoV-2 from a blood sample (95% confidence interval: 8.4% to 14.4%) in the 28 days up to 18 January 2021. It is estimated that an average of 283,000 people aged 16 years and over in Wales would have tested positive for antibodies during this time (95% confidence interval: 214,000 to 365,000). This equates to 1 in 9 people aged 16 years and over (95% confidence interval: 1 in 12 to 1 in 7).

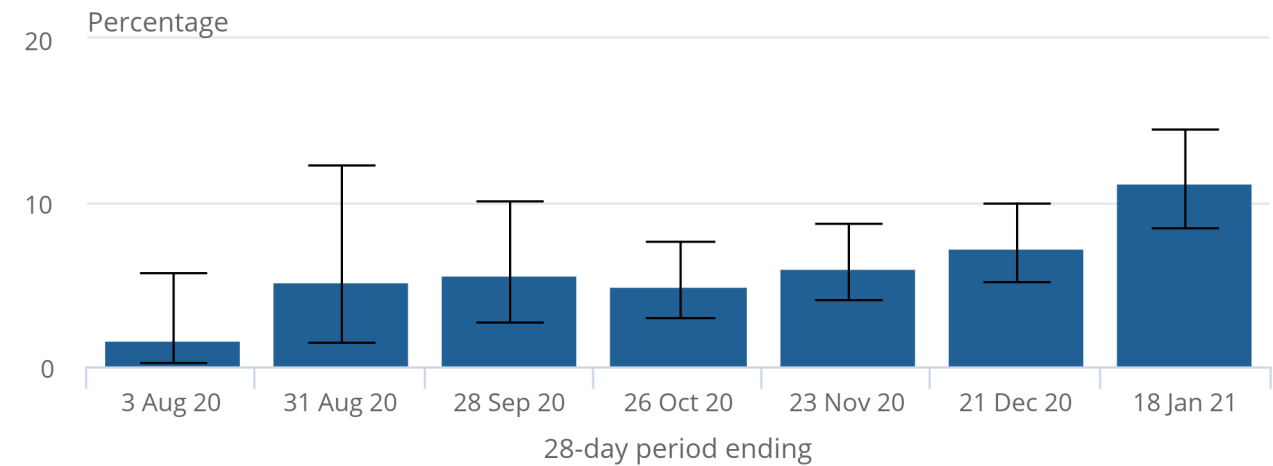
In the data used to produce these estimates, the number of people sampled in Wales who tested positive for antibodies to SARS-CoV-2 is low compared with England. This means there is a higher degree of uncertainty in the regional estimates for this period, as indicated by larger confidence intervals.

Figure 4: Around 1 in 9 people tested positive for antibodies in the 28 days up to 18 January 2021 in Wales

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 7 July 2020 to 18 January 2021, Wales

Figure 4: Around 1 in 9 people tested positive for antibodies in the 28 days up to 18 January 2021 in Wales

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 7 July 2020 to 18 January 2021, Wales



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

Antibody data by age for Wales

The analysis in this section uses data taken from the 28 days up to 18 January 2021 to produce weighted antibody estimates by age in Wales. The highest percentage of people testing positive for antibodies was those aged 16 to 24 years at 22.1% (95% confidence interval: 9.2% to 40.6%). The percentage of people aged 80 years and over testing positive for antibodies was 14.3% (95% confidence interval: 3.7% to 33.9%). The lowest number of people testing positive for antibodies was in those aged 70 to 74 years at 5.0% (95% confidence interval: 1.4% to 12.3%).

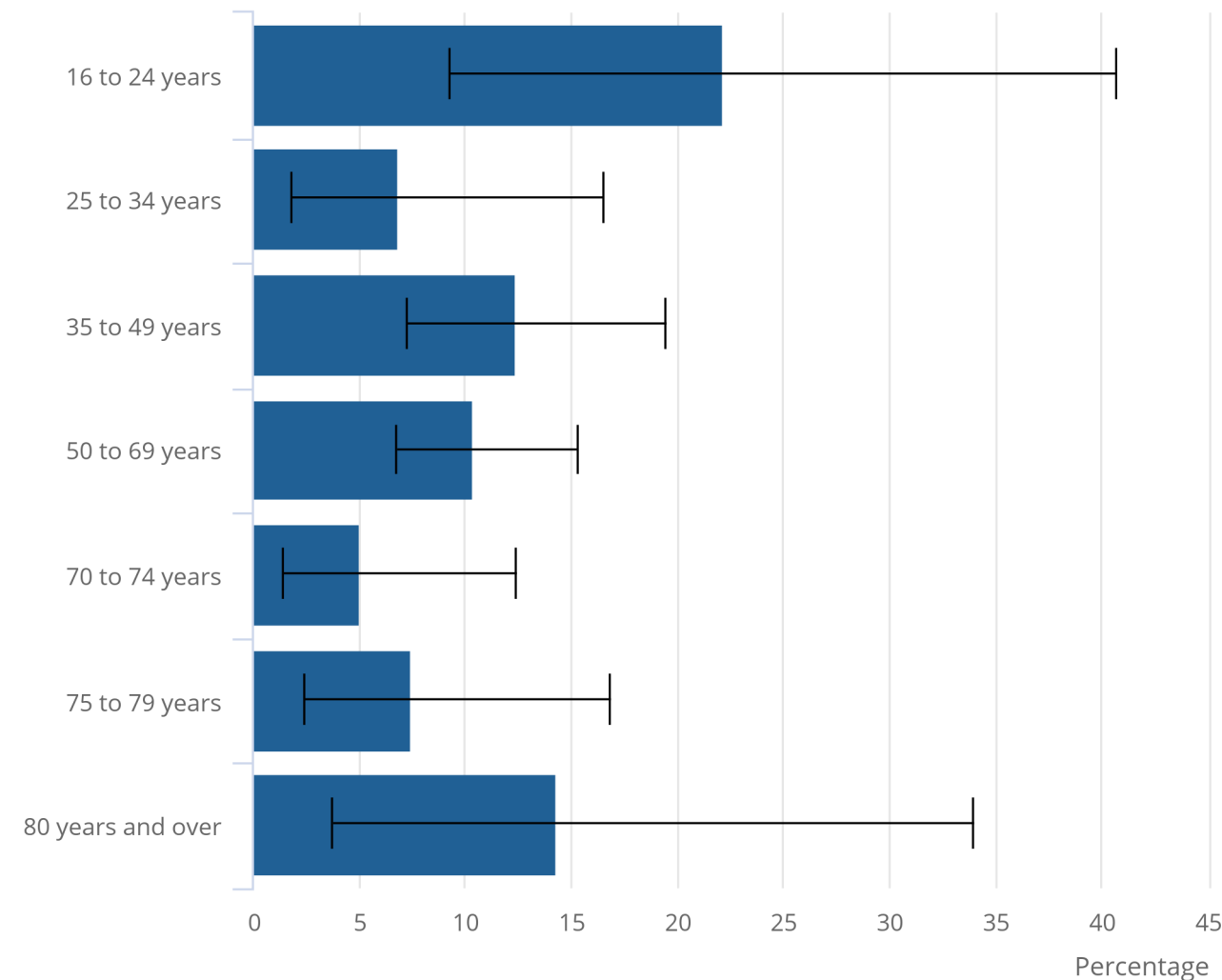
Confidence intervals are wide and the sample sizes relatively small, meaning there is greater uncertainty in these figures.

Figure 5: The highest antibody positivity was seen in those aged 16 to 24 years in the 28 days up to 18 January 2021 in Wales

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Wales

Figure 5: The highest antibody positivity was seen in those aged 16 to 24 years in the 28 days up to 18 January 2021 in Wales

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Wales



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

5 . Likelihood of testing positive for COVID-19 antibodies in Northern Ireland

An estimated 9.2% of the population in Northern Ireland would have tested positive for SARS-CoV-2 from a blood sample (95% confidence interval: 5.8% to 13.6%) in the 28 days up to 18 January 2021. It is estimated that an average of 136,000 people aged 16 years and over in Northern Ireland would have tested positive for antibodies during this time (95% confidence interval: 86,000 to 202,000). This equates to 1 in 11 people aged 16 years and over (95% confidence interval: 1 in 17 to 1 in 7).

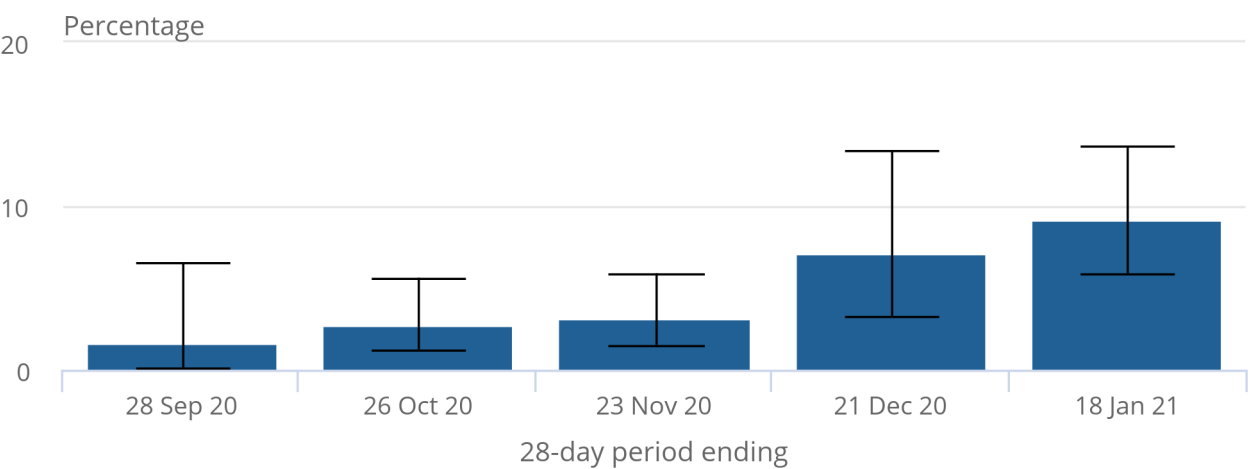
In the data used to produce these estimates, the number of people sampled in Northern Ireland who tested positive for antibodies to SARS-CoV-2 is low compared with England. This means there is a higher degree of uncertainty in the regional estimates for this period, as indicated by larger confidence intervals.

Figure 6: Around 1 in 11 people tested positive for antibodies in the 28 days up to 18 January 2021 in Northern Ireland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 1 September 2020 to 18 January 2021, Northern Ireland

Figure 6: Around 1 in 11 people tested positive for antibodies in the 28 days up to 18 January 2021 in Northern Ireland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day periods, 1 September 2020 to 18 January 2021, Northern Ireland



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

Antibody data by age for Northern Ireland

The analysis in this section uses data taken from the 28 days up to 18 January 2021 to produce weighted antibody estimates by age in Northern Ireland. Because of low numbers, everyone over the age of 70 years was included in the 70 years and over age group. The percentage of people aged 70 years and over testing positive for antibodies was 0.0% (95% confidence interval: 0.0% to 0.1%). Between 5.2% and 12.1% of people in the other age groups tested positive for antibodies.

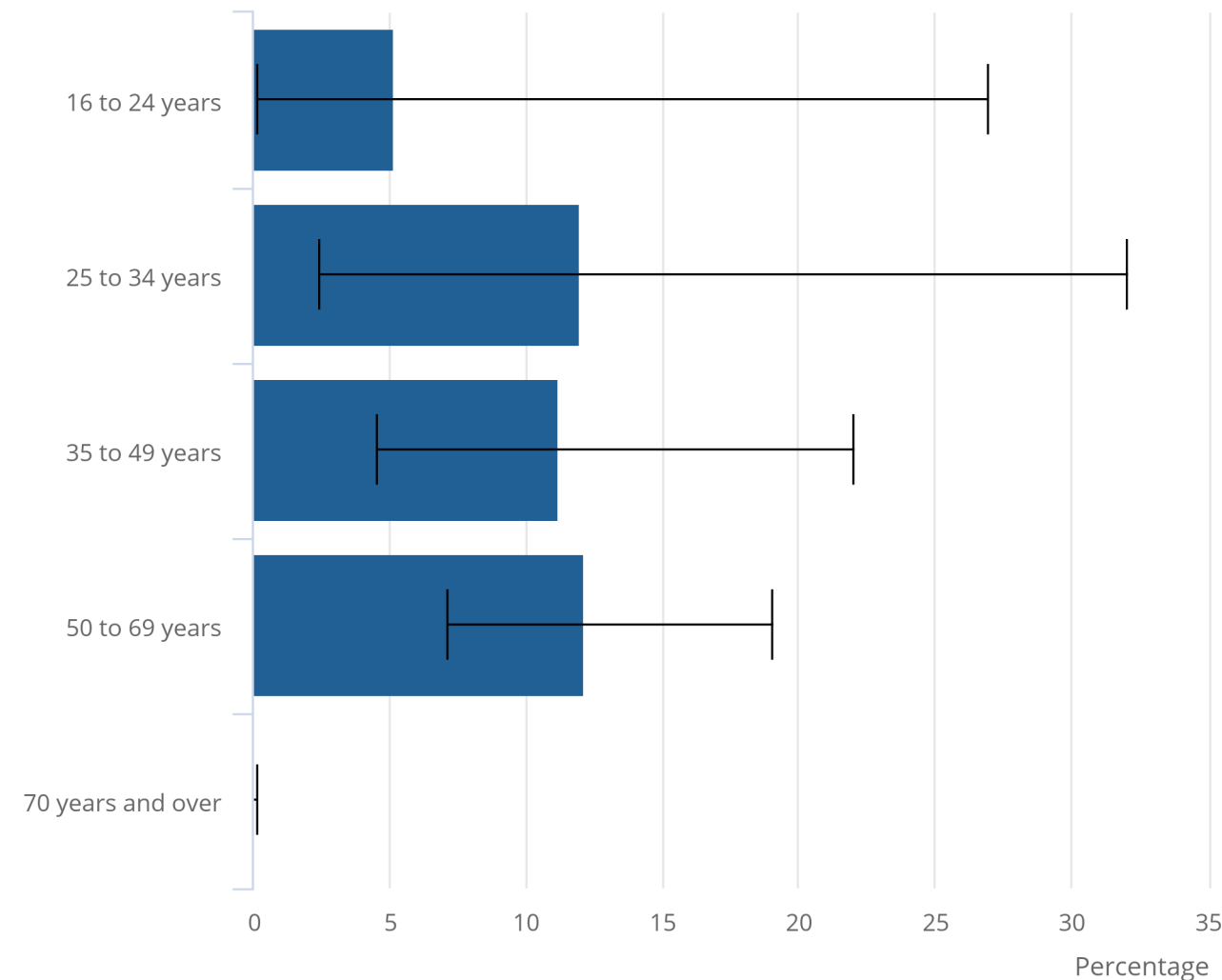
Confidence intervals are wide and the sample sizes relatively small, meaning there is greater uncertainty in these figures.

Figure 7: The highest antibody positivity was seen in those aged 25 to 69 years in the 28 days up to 18 January 2021 in Northern Ireland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Northern Ireland

Figure 7: The highest antibody positivity was seen in those aged 25 to 69 years in the 28 days up to 18 January 2021 in Northern Ireland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Northern Ireland



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

6 . Likelihood of testing positive for COVID-19 antibodies in Scotland

An estimated 10.1% of the population in Scotland would have tested positive for antibodies to SARS-CoV-2 from a blood sample (95% confidence interval: 8.5% to 11.8%) in the 28 days up to 18 January 2021. It is estimated that an average of 450,000 people aged 16 years and over in Scotland would have tested positive for antibodies during this time (95% confidence interval: 382,000 to 525,000). This equates to 1 in 10 people aged 16 years and over (95% confidence interval: 1 in 12 to 1 in 9).

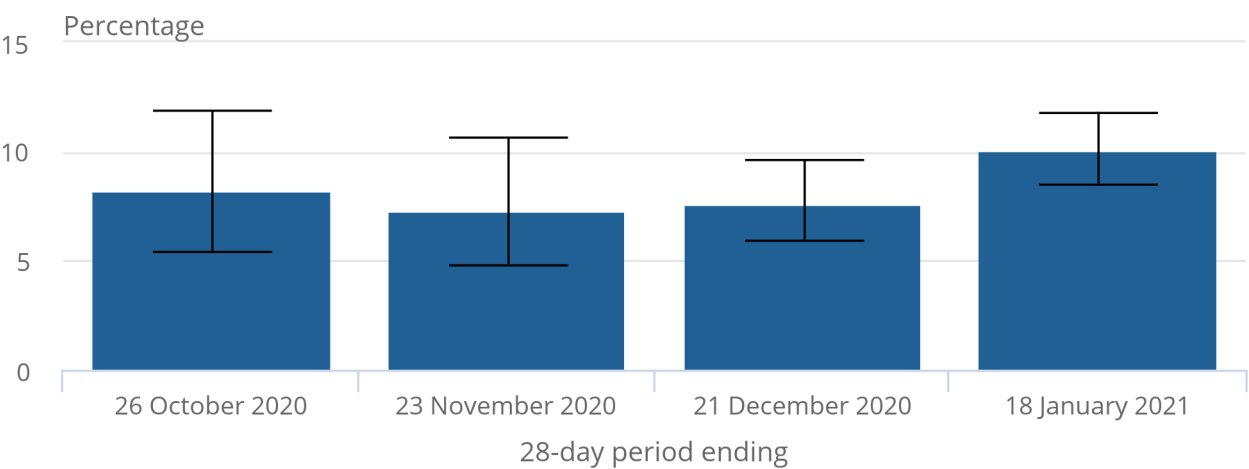
In the data used to produce these estimates, the number of people sampled in Scotland who tested positive for antibodies to SARS-CoV-2 is low compared with England. This means there is a higher degree of uncertainty in the regional estimates for this period, as indicated by larger confidence intervals.

Figure 8: Around 1 in 10 people tested positive for antibodies in the 28 days up to 18 January 2021 in Scotland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day period, 29 September 2020 to 18 January 2021, Scotland

Figure 8: Around 1 in 10 people tested positive for antibodies in the 28 days up to 18 January 2021 in Scotland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by 28-day period, 29 September 2020 to 18 January 2021, Scotland



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

Antibody data by age for Scotland

The analysis in this section uses data taken from the 28 days up to 18 January 2021 to produce weighted antibody estimates by age in Scotland. The highest percentage of people testing positive for antibodies was those aged 80 years and over at 16.1% (95% confidence interval: 7.5% to 28.8%). Between 6.6% and 12.3% of people in the other age groups tested positive for antibodies.

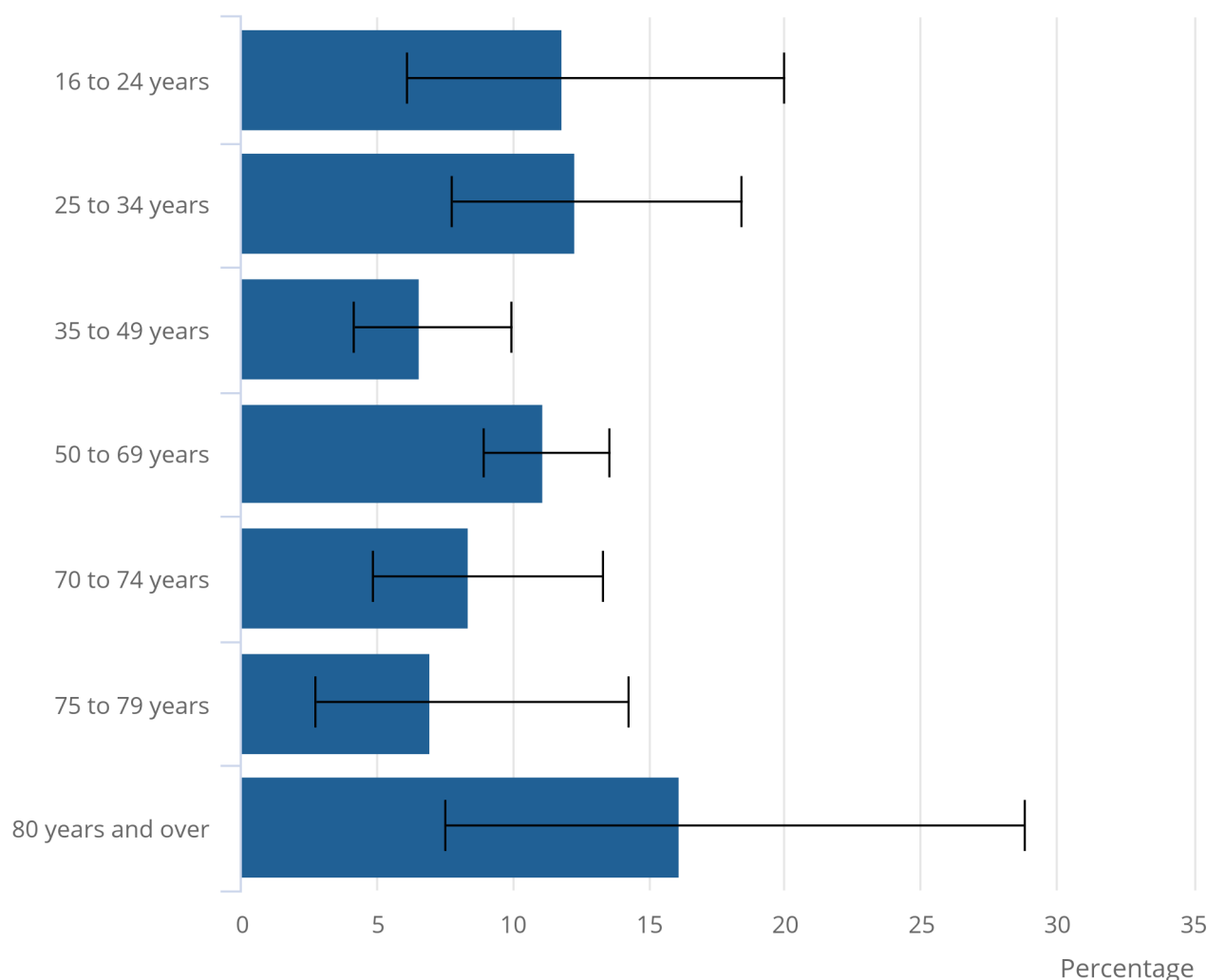
Confidence intervals are wide and the sample sizes relatively small, meaning there is greater uncertainty in these figures.

Figure 9: The highest antibody positivity was seen in those aged 80 years and over in the 28 days up to 18 January 2021 in Scotland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Scotland

Figure 9: The highest antibody positivity was seen in those aged 80 years and over in the 28 days up to 18 January 2021 in Scotland

Estimated percentage of those testing positive for antibodies to SARS-CoV-2 from a blood sample, by age, 22 December 2020 to 18 January 2021, Scotland



Source: Office for National Statistics – Coronavirus (COVID-19) Infection Survey

Notes:

1. All results are provisional and subject to revision.
2. These statistics refer to infections reported in the community, by which we mean private households. These figures exclude infections reported in hospitals, care homes and/or other institutional settings.

7 . Coronavirus (COVID-19) Infection Survey data

[Coronavirus \(COVID-19\) antibody data for the UK](#)

Dataset | Released 3 February 2021

Antibody data for the UK taken from the Coronavirus (COVID-19) Infection Survey.

8 . Collaboration

The Coronavirus (COVID-19) Infection Survey analysis was produced by the Office for National Statistics (ONS) in partnership with the University of Oxford, the University of Manchester, Public Health England and Wellcome Trust. Of particular note are:

- Sarah Walker – University of Oxford, Nuffield Department for Medicine: Professor of Medical Statistics and Epidemiology and Study Chief Investigator
- Koen Pouwels – University of Oxford, Health Economics Research Centre, Nuffield Department of Population Health: Senior Researcher in Biostatistics and Health Economics
- Thomas House – University of Manchester, Department of Mathematics: Reader in mathematical statistics

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ONS COVID-19 Infection Survey dissemination team – Hannah Donnarumma, Eleanor Fordham, Byron Davies, Kyle Knights, Alice McTiernan, George Feldman

9 . Glossary

A confidence interval gives an indication of the degree of uncertainty of an estimate, showing the precision of a sample estimate. The 95% confidence intervals are calculated so that if we repeated the study many times, 95% of the time the true unknown value would lie between the lower and upper confidence limits. A wider interval indicates more uncertainty in the estimate. Overlapping confidence intervals indicate that there may not be a true difference between two estimates.

For more information, see our [methodology page on statistical uncertainty](#).

10 . 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 University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

[Coronavirus \(COVID-19\) Infection Survey: antibody data for the UK, January 2021](#)

Article | 19 January 2021

Antibody data by UK country and English regions from the Coronavirus (COVID-19) Infection Survey. This survey is being delivered in partnership with University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

[Coronavirus \(COVID-19\) Infection Survey: characteristics of people testing positive for COVID-19 in England, 27 January 2021](#)

Article | 27 January 2021

Characteristics of people testing positive for COVID-19 from the Coronavirus (COVID-19) Infection Survey. This survey is being delivered in partnership with University of Oxford, University of Manchester, Public Health England and Wellcome Trust.

[Coronavirus \(COVID-19\) weekly insights: latest health indicators in England](#)

Article | Updated weekly

Brings together data about the coronavirus (COVID-19) pandemic in England and explores how these measures interact with each other can improve understanding of the severity and spread of the pandemic.

[COVID-19 Infection Survey \(Pilot\): methods and further information](#)

Methods article | Updated 21 September 2020

Information on the methods used to collect the data, process it, and calculate the statistics produced from the COVID-19 Infection Survey pilot.

[COVID-19 Infection Survey \(CIS\)](#)

Article | Updated 14 May 2020

Whether you have been invited to take part, or are just curious, find out more about our COVID-19 Infection Survey and what is involved.

[Coronavirus \(COVID-19\) roundup](#)

Web page | Updated as and when data become available

Catch up on the latest data and analysis related to the coronavirus pandemic and its impact on our economy and society.