

Article

Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in countries of the UK, 20 May 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. This study is jointly led by the ONS and the Department for Health and Social Care (DHSC) working with the University of Oxford and UK Biocentre to collect and test samples.

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1 . Main points

- In the weeks prior to 2 May 2021, the percentage of people testing positive for the coronavirus (COVID-19) appears to have decreased in both patient-facing and non-patient-facing job roles in the UK.
- The number of socially distanced and physical contacts that adults and school-age children reported with people outside their household has increased since March 2021 up to 2 May 2021 across the UK.
- In April 2021, 53% (95% confidence intervals: 45% to 60%) of people who tested positive for COVID-19 with a strong positive test reported symptoms within 35 days of the test in the UK.

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 the UK.

This article presents analysis on the characteristics of those testing positive for SARS-CoV-2 the coronavirus causing the COVID-19 disease in the UK. We include current COVID-19 infections, which we define as testing positive for SARS-CoV-2, with or without having symptoms, on a swab taken from the nose and throat.

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](#).

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](#). It should be noted that the analysis on the characteristics and behaviours of those testing positive in this article is for a different time period than the headline figures presented in the most recent bulletin. The reference periods for the various analyses are clearly stated at the start of each section.

Further information on what the analysis covers is provided at the start of each section. More information about the methods used for our models is available in our [methodology article](#).

3 . Percentage testing positive for COVID-19 by patient-facing and non-patient-facing job roles, UK

About this analysis

This section provides modelled estimates on positivity rates by patient-facing and non-patient-facing job roles for the UK. [Previously](#) we have reported this analysis for England grouped by those aged under 35 years and 35 years and above, which have shown different patterns of positivity in the past. This age split is now less meaningful since the overall estimate of the percentage of people testing positive for coronavirus (COVID-19) is very low. The analysis presented in this article is not comparable to estimates in previous publications.

The models used to produce positivity rates for patient-facing and non-patient-facing job roles include only swab test results from individuals aged 16 to 74 years. This analysis covers the time period between 21 September 2020 and 2 May 2021.

In the weeks prior to 2 May 2021, the percentage of the population testing positive for the coronavirus (COVID-19) appears to have decreased in both patient-facing and non-patient-facing job roles in the UK. This is after a peak in January 2021, which was more pronounced for patient-facing job roles than non-patient-facing job roles.

Figure 1: In the weeks prior to 2 May 2021, the percentage testing positive appears to have decreased for those in both patient-facing and non-patient-facing job roles in the UK

Estimated percentage of the population testing positive for COVID-19 on nose and throat swabs by patient-facing role, UK, from 21 September 2020 to 2 May 2021

Notes:

1. All results are provisional and subject to revision.
2. There are fewer people in patient-facing job roles in our sample than those in non-patient-facing job roles. Therefore, the estimates for patient-facing roles have a larger degree of uncertainty, represented by wider confidence intervals.
3. This analysis covers the entirety of the UK and is therefore not comparable to previously published analysis, which only includes individuals in non-patient and patient-facing job roles in England.

Download the data

[.XLSX](#)

4 . Number and age of people individuals had contact with, in England, Wales, Northern Ireland and Scotland

About this analysis

This section looks at how often individuals are reporting social contact (either socially distanced or physical contact) with other people outside their own household, regardless of whether they have tested positive for the coronavirus (COVID-19). We asked individuals how many people aged 17 years and under, 18 to 69 years, and 70 years and over, outside their household, they have had contact with up to seven days prior to each visit. "Contact" refers to either of the following:

- socially distanced contact - direct contact with social distancing only
- physical contact - physical contact, such as a handshake or personal care, including wearing personal protective equipment (PPE)

This analysis covers the time period between 13 July 2020 and 2 May 2021 in England, and 21 September 2020 and 2 May 2021 for Wales, Northern Ireland and Scotland.

Further information on the schedule for school re-openings can be viewed for [England](#), [Wales](#), [Northern Ireland](#) and [Scotland](#). Information on lockdown easing can be viewed for [England](#), [Wales](#), [Northern Ireland](#) and [Scotland](#).

We have produced estimates that have been weighted to be representative of the total population in England, Wales, Northern Ireland and Scotland. Analysis includes all people taking part in the survey and we present contact analysis for school-age children (age two years to school Year 11) and adults (school Year 12 and above). We report the number of contacts in the following groups:

- 0 (no reported contact)
- 1 to 5 (reported contacts)
- 6 to 10 (reported contacts)
- 11 to 20 (reported contacts)
- 21 or more (reported contacts)

Socially distanced contacts- school-age children

We present the proportion of school-age children reporting each category of socially distanced contact in England, Wales, Northern Ireland and Scotland in Figure 2.

In England, the proportion of socially distanced contacts school-age children had with those aged under 70 years rose sharply in mid-March 2021, corresponding to schools re-opening in England, with a dip occurring in mid-April 2021 corresponding to the school Easter holidays. The number of contacts children had with people 70 years and above has also increased gradually since mid-January 2021.

In Wales, the proportion of socially distanced contacts school-age children had with those aged under 70 years rose throughout March and April 2021, corresponding to the re-opening of schools. A dip in the number of reported contacts occurred in mid-April corresponding with the school Easter holidays. The number of contacts children had with people over 70 years has also increased gradually since March 2021.

In Northern Ireland, the proportion of socially distanced contacts school-age children had with those aged under 70 years has been increasing since early March 2021. This corresponds with the full re-opening of schools.

In Scotland, the proportion of socially distanced contacts school-age children had with all age groups has been increasing since early March 2021. This corresponds to the phased re-opening of schools.

There is a consistent trend over time and across all nations with school-age children reporting to have more socially distanced contacts with those aged under 18 years than with those aged 18 to 69 years or over 70 years.

Figure 2: The number of socially distanced contacts reported with people aged under 70 years increased as schools fully reopened across the UK

Proportion of school-age children by number of socially distanced contacts with different age groups, UK, from 13 July 2020 to 2 May 2021

Notes:

1. These results are provisional and subject to revision.
2. This analysis includes all participants between 13 July 2020 to 2 May 2021 in England and participants between 21 September 2020 to 2 May 2021 in Wales, Northern Ireland and Scotland; regardless of whether they tested positive or negative for COVID-19.

Download the data

[.XLSX](#)

Socially distanced contacts - adults

We present the proportion of adults reporting each category of socially distanced contact in England, Wales, Northern Ireland and Scotland in Figure 3.

In England, the proportion of socially distanced contacts with all age groups for adults have been increasing throughout April 2021.

In Wales, Northern Ireland and Scotland the proportion of socially distanced contacts across all age groups for adults has been increasing since early March 2021. The rise in contact rates with people over 70 years has been less pronounced in Northern Ireland and Scotland.

There is a consistent trend over time and across all nations, with adults reporting more socially distanced contacts with those aged 18 to 69 years than with people under the age of 18 years or 70 years and over.

Figure 3: In adults, the number of reported socially distanced contacts increased from March and throughout April across the UK

Proportion of adults by number of socially distanced contacts with different age groups, UK, from 13 July 2020 to 2 May 2021

Notes:

1. These results are provisional and subject to revision.
2. This analysis includes all participants between 13 July 2020 to 2 May 2021 in England and participants between 21 September 2020 to 2 May 2021 in Wales, Northern Ireland and Scotland; regardless of whether they tested positive or negative for COVID-19.

Download the data

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Physical contacts - school-age children

Among school-age children, the trends in physical contacts are very similar to socially distanced contact trends across the UK, with increases in contacts through March and April 2021 to 2 May 2021.

In school-age children in England, Wales, Northern Ireland and Scotland, the number of physical contacts follows a similar trend to the number of socially distanced contacts.

There is a consistent trend over time, with school-age children reporting to have more physical contacts with those aged under 18 years than with those aged 18 to 69 years or 70 years and over.

Physical contacts - adults

Among adults, trends in physical contacts over time are very similar to socially distanced contact trends across the UK, with increases in contacts through March and April 2021, although the number of physical contacts was lower.

Adults in England, Wales, Northern Ireland and Scotland report to have had more physical contacts with those aged 18 to 69 years than with under 18s or over 70s.

Additional information on the proportions of physical contacts by school-age children and adults can be found in the accompanying [dataset](#).

Our findings appear consistent with what has been reported in the [Opinions and Lifestyle Survey](#), which examines the impact of the coronavirus pandemic on people, households and communities in Great Britain. The most recent Opinions and Lifestyle Survey bulletin reported that among adults in Great Britain, from 5 to 9 May 2021:

- the proportion of adults meeting up indoors with someone not in their household, childcare or support bubble in the last seven days was 19% compared with 10% in the previous week (28 April to 3 May); this proportion had previously been relatively stable since the start of 2021
- the proportion of adults meeting up outdoors with someone not in their household, childcare or support bubble was 57%, similar to 56% in the previous week; this proportion had increased quickly as related restrictions eased across Great Britain from late March 2021, prior to which it was 23% (17 to 21 March 2021)

5 . Symptoms profile of strong positive cases, UK

About this analysis

The analysis in this section looks at each person who tested positive for the coronavirus (COVID-19) who had a strong positive test in the UK. The strength of the test is determined by how quickly the virus is detected, measured by a cycle threshold (Ct) value. The lower the Ct value, the higher the viral load and stronger the positive test. Positive results with a high Ct value can be seen in the early stages of infection when virus levels are rising, or late in the infection, when the risk of transmission is low.

Participants who only have positive tests with these high values are excluded from this analysis to exclude the possibility that symptoms are not identified because we pick up individuals very early or later on in their infection. You can find [more information on Ct values](#) in a paper written by academic partners at the University of Oxford.

This analysis considers individuals with any positive test (including repeated positive tests) that had a Ct value less than 30 between 1 December 2020 and 30 April 2021 in the UK. This analysis considers all symptoms reported at visits within 35 days of the first positive test of the episode, and at each visit we ask about symptoms in the last seven days. This includes symptoms reported even when there is a negative test within this timeframe or a positive test with a higher Ct value. For this article, we are presenting the percentage of people reporting symptoms by strong positive test for the whole of the UK, instead of separately by each UK nation. More details on this analysis can be found in [Section 9](#).

Individuals taking part in the survey were asked at each visit whether they had experienced a range of possible symptoms¹ in the seven days before they were tested and also separately whether they felt that they had symptoms compatible with COVID-19 infection in the last seven days.

In Figure 5 we have categorised reported symptoms into the following:

- any: any specific self-reported symptom, including cough, fever, shortness of breath, loss of taste, loss of smell, myalgia, fatigue, sore throat, headache, abdominal pain, diarrhoea, nausea or vomiting
- classic: cough, fever, shortness of breath, loss of taste or loss of smell
- gastrointestinal (GI): abdominal pain, nausea or vomiting, or diarrhoea
- loss of taste or smell only

In the UK, people testing positive for COVID-19 with a strong positive test were more likely to report 'classic' symptoms than gastrointestinal or loss of taste or smell only

This analysis is based on all individuals who test positive for COVID-19 with a strong positive test (Ct <30) and considers what percentage of these individuals reported symptoms within 35 days of the first positive test in the episode.

In April 2021, 53% (95% confidence interval: 45% to 60%) of people testing positive for COVID-19 in the UK reported symptoms. The confidence intervals are wider because of lower numbers of people testing positive in our survey during March and April 2021.

Figure 4: In the UK, over half of people testing positive for COVID-19 reported symptoms in April 2021

Percentage of people with symptoms, including only those who have strong positive tests (Ct less than 30), UK countries, 1 December 2020 to 30 April 2021

Notes:

1. All results are provisional and subject to revision.
2. Symptoms are self-reported and were not professionally diagnosed.
3. These data are unweighted percentages of people with any positive test result that had a Ct value less than 30.

Download the data

[.XLSX](#)

Figure 5: In the UK, people testing positive for COVID-19 with a strong positive test were more likely to report "classic" symptoms than gastrointestinal or loss of taste or smell only

Percentage of people with symptoms, including only those who have strong positive tests (Ct less than 30), UK, 1 December 2020 to 30 April 2021

Notes:

1. All results are provisional and subject to revision.
2. Symptoms are self-reported and were not professionally diagnosed.
3. These data are unweighted percentages of people with any positive test result that had a Ct value less than 30.

Download the data

[.XLSX](#)

Figure 6 shows, the most commonly reported symptoms in the UK have consistently been cough, headache and fatigue. The least commonly reported symptoms have consistently been abdominal pain, diarrhoea and nausea or vomiting.

The prevalence of most symptoms appeared to increase between December 2020 and February 2021, but there is no clear trend since then.

Figure 6: The most commonly reported symptoms among people testing positive for COVID-19 with a strong positive test were cough, fatigue and headache

Percentage of people with symptoms, including only those who have strong positive tests (Ct less than 30), UK, 1 December 2020 to 30 April 2021

Notes:

1. All results are provisional and subject to revision.
2. Symptoms are self-reported and were not professionally diagnosed.
3. These data are unweighted percentages of people with any positive test result that had a Ct value less than 30.

Download the data

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Notes for: Symptoms profile of strong positive cases for England, Wales, Northern Ireland and Scotland

1. The symptoms respondents were asked to report are: fever, muscle ache (myalgia), fatigue (weakness or tiredness), sore throat, cough, shortness of breath, headache, nausea or vomiting, abdominal pain, diarrhoea, loss of taste or loss of smell.

6 . Coronavirus (COVID-19) Infection Survey data

[Coronavirus \(COVID-19\) infections in the community in the UK](#)

Dataset | Released 20 May 2021

Characteristics of people testing positive for the coronavirus (COVID-19) in the UK taken from the COVID-19 Infection Survey.

7 . 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

8 . Glossary

Confidence interval

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](#).

9 . Data sources and quality

More information on [measuring the data](#) and its [strengths and limitations](#) is available in the Coronavirus (COVID-19) Infection Survey statistical bulletin.

Our [methodology article](#) provides further information around the survey design, how we process data and how data are analysed.

Symptoms analysis

The analysis on the symptoms profile of strong positive cases in the UK considers individuals with any positive test (including repeated positive tests) that had a Ct value less than 30 between 1 December 2020 and 30 April 2021. Positive episodes are now being defined as "a new positive test 90 days or more after an initial first positive test and following a previous negative test, or, if within 90 days, a subsequent positive test following four consecutive negative tests", rather than using a 90-day threshold alone.

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 and vaccination data for the UK](#)

Article | Updated fortnightly

Antibody data by UK country and regions in England 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.

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

Methods article | Updated 26 March 2021

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

[Coronavirus \(COVID-19\) latest insights](#)

Interactive tool | Updated as and when data become available

Explore the latest data and trends about the coronavirus (COVID-19) pandemic from the ONS and other official sources.

[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.

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

Article | Updated regularly

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.