

Statistical bulletin

# Coronavirus (COVID-19) Infection Survey, characteristics of people testing positive for COVID-19, UK: 25 August 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 Lighthouse Laboratories to collect and test samples.

Contact:  
Kara Steel and Philippa  
Haughton  
infection.survey.analysis@ons.  
gov.uk  
+44 1633 651689

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# 1 . Main points

- The number of socially distanced and physical contacts that adults and school-age children reported with people outside their household has continued to increase across the UK since March 2021.
- The percentage of those working in patient-facing healthcare roles testing positive for coronavirus (COVID-19) has increased by a similar or smaller amount compared with other adults since late June 2021.
- Analysis of COVID-19 reinfections between 26 April 2020 and 14 August 2021 found that, on average, the viral load is lower for the second infection compared with the first infection.

## About this bulletin

This fortnightly bulletin series presents the latest analysis on the characteristics of people testing positive for SARS-CoV-2, the coronavirus causing the COVID-19 disease in the UK. Our [analysis on the characteristics of people testing positive for COVID-19](#) is still available.

In this bulletin, we refer to the number of COVID-19 infections within the community population; this refers to private residential households, and excludes those in hospitals, care homes and/or other institutional settings 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 weekly bulletin](#). Our [methodology article](#) provides more information on the methods used for our models.

Analysis in this bulletin is for a different time period to the headline figures presented in the weekly COVID-19 Infection Survey bulletin. Reference periods are clearly stated at the start of each section, with more detail on what the analysis covers.

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

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 coronavirus (COVID-19). We asked individuals how many people aged 17 years and under, 18 to 69 years, and 70 years and over they have had contact with outside their household up to seven days prior to each survey visit. "Contact" refers to either of the following:

- socially distanced contact
- physical contact, such as a handshake or personal care, including while wearing personal protective equipment (PPE)

We report on recent trends in this section, but the full time series for this analysis, which covers the period between 12 July 2020 and 7 August 2021 for England, and 20 September 2020 to 7 August 2021 for Wales, Northern Ireland and Scotland, is available in the [accompanying dataset](#). The analysis for Wales, Northern Ireland and Scotland starts at a later date because data collection started later in these countries. Our estimates have been weighted to be representative of the total population in each of the four UK countries.

## **Number of reported socially distanced and physical contacts with people outside the household continues to increase across the UK**

The trends in socially distanced and physical contacts are very similar for England, Wales, Northern Ireland and Scotland. The trends are broadly unchanged since our last bulletin.

Across all four UK nations, the number of socially distanced and physical contacts that adults and school-age children reported with people of all ages outside their household has been increasing since March 2021. Adults appear to consistently have more socially distanced and physical contacts with those aged 18 to 69 years than with those aged under 18 years or aged 70 years and over. School-age children appear to have had more socially distanced and physical contacts with those aged under 18 years.

School term dates, and COVID-19 related school policies vary by nation and this is reflected in the data. For example, following the trend shown by Northern Ireland and Scotland reported in our previous bulletin, in the 14-day period up to 7 August 2021, school-age children in England and Wales also reported fewer contacts with under-18 year olds. This corresponds to schools in England and Wales breaking up for summer during this period.

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](#).

Our findings are generally similar to those reported in the [Opinions and Lifestyle Survey \(OPN\)](#), which examines the impact of the coronavirus pandemic on people, households and communities in Great Britain. The most recent OPN bulletin reported that among adults in Great Britain, from 11 to 15 August 2021:

- the percentage of adults who always or often maintain social distancing (46%) fell slightly this week (49% last week), as did the proportion of adults avoiding physical contact when outside their home (59%) when compared with last week (64%)
- the proportion of adults meeting up indoors with others outside their household (69%) increased compared with last week (64%), as did the proportion of adults meeting up outdoors (67% this week, 60% last week)

## **3 . Percentage testing positive for COVID-19 by adults in patient-facing healthcare job roles and other adults, UK**

This section provides estimates on positivity rates by adults who work in patient-facing health care roles, and those who do not work in patient-facing healthcare roles (including those who are not working) for the UK. The two groups are split by those aged under 35 years and those aged 35 years and over. In this analysis we include only swab test results from individuals aged 16 to 74 years. This analysis covers the period from 21 September 2020 to 9 August 2021.

Patient-facing healthcare job roles include working in healthcare establishments such as hospitals, and do not include job roles in social care or care homes. People who are not working are included within the group “not in patient-facing healthcare job roles”

Since late June, the percentage of those working in patient-facing healthcare roles testing positive for coronavirus (COVID-19) has increased by a similar or smaller amount compared with other adults.

The percentage of people working in patient-facing healthcare roles who tested positive for COVID-19 showed a similar or smaller increase since late June, compared with those who do not work in patient-facing healthcare roles.

For those aged under 35 years, the percentage of people testing positive appears to be lower for those in patient-facing roles than for those not in patient-facing roles, although confidence intervals are wide for those in patient-facing roles. For those aged over 35 years, the increases are similar in those in patient-facing roles and other adults, given the width of the confidence intervals.

### **Figure 1: The percentage of people testing positive for COVID-19 has increased by a similar or smaller amount for those working in patient-facing healthcare roles compared with other adults since late June**

**Estimated percentage of the adult population testing positive for COVID-19 on nose and throat swabs by those in patient-facing and not in patient-facing healthcare job roles, by age, UK, 21 September 2020 to 9 August 2021**

#### **Notes**

1. All results are provisional and subject to revision.
2. There are fewer people in patient-facing healthcare job roles in our sample than those not in patient-facing healthcare roles (which includes those not working). Therefore, the estimates for patient-facing healthcare job 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 with analysis published before 20 May 2021, which includes individuals in patient-facing job roles and not working in patient-facing job roles by age in England only.

#### **Download the data**

[.xlsx](#)

## **4 . Reinfections of COVID-19, UK**

This section looks at the rate of coronavirus (COVID-19) reinfections in the UK between 26 April 2020 and 14 August 2021. We first presented results of reinfection analysis in [Coronavirus \(COVID-19\) Infection Survey technical article: analysis of reinfections of COVID-19: June 2021](#), and this article gives a more detailed explanation of the methods used. Tables 4a to 4f in the [accompanying dataset](#) to this bulletin provide the updated data.

We have updated our definition of reinfection to use a cut-off of 120 days rather than 90 days.

We have updated our reinfection definition since we last published analysis of reinfection in the [Characteristics bulletin](#) on 28 July 2021. Now we take 120 days as a cut-off point, whereas previously we used 90 days.

We have made this change to ensure that our definition of a reinfection, which is necessarily based on swab tests alone, produces the most accurate possible estimates. As we have collected more data and expanded our reinfections analysis, we have improved our understanding of the duration when people test positive. There is evidence that a 120-day cut-off, rather than a 90-day cut-off, is necessary to reduce the risk of long-term intermittent positives being captured as reinfections. By moving to a 120-day cut-off, we minimise the risk that the reinfections we identify are part of a single ongoing infection episode, and not reinfections.

This change reduces the estimated number of reinfections by around 30%, but the impact on the number of reinfections with Ct less than 30, which we class as "strong positives", is small. Median Ct values for the first infection in those who experience a reinfection increase slightly, but this does not affect the main finding that there is lower viral load at the second infection.

The analysis presented in this section therefore includes individuals who have had at least one positive test recorded in the survey and meet our criteria for being "at risk" of reinfection where:

- 120 days has elapsed since an individual's first positive test in the survey and their most recent test result was negative
- if 120 days has not passed since their first positive test in the survey, the individual's last positive test has been followed by four consecutive negative tests

An individual being classified as "at risk" reflects that it is possible for a positive test of theirs to be considered a reinfection. The "at-risk period" refers to the period following the first time we could have defined a reinfection. A reinfection is therefore defined as when an individual who meets these criteria has a positive test.

All estimates of COVID-19 reinfections in this analysis are unweighted. The sample for this analysis includes only those who have tested positive for COVID-19 on a swab test, and so there is no known population of which weighted estimates could be representative.

Ct values are significantly lower for the first infection than for the second infection, indicating a lower viral load at the second infection between 26 April 2020 and 14 August 2021

The estimated rate for all reinfections including those with a lower viral load was 10.9 per 100,000 participant days at risk (95% confidence interval: 9.4 to 12.5) over the entire at-risk period. The estimated rate for reinfections with a strong positive test (with Ct less than 30) was 4.1 per 100,000 participant days at risk (95% confidence interval: 3.2 to 5.2) over the entire at-risk period. This suggests that the number of reinfections is low overall, and reinfections with a high viral load (which are more likely to cause illness) are even lower.

Analysis of Ct values (please see the [glossary](#)) at first and second infection found that Ct values are significantly lower for the first infection than for the second infection. This indicates that there is a lower viral load at the second infection. A lower viral load suggests a person is less likely to experience illness.

The estimated rate of COVID-19 reinfection according to time at risk and additional Ct analysis can be found in the [accompanying dataset](#) for this bulletin.

Table 1: Rate of reinfections per 100,000 participant days at risk  
 Estimated rate of COVID-19 reinfections per 100,000 participant days at risk, averaged for entire at-risk period,  
 26 April 2020 to 14 August 2021, UK

Definition	Number of participants at risk	Number of identified reinfections	Estimated rate of reinfections (per 100,000 participant days at risk)	Lower 95% confidence interval	Upper 95% confidence interval
<b>All reinfections definition</b>	19,467	191	10.9	9.4	12.5
<b>Reinfections with Ct less than 30</b>	19,467	72	4.1	3.2	5.2

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

#### Notes

1. For the purposes of this analysis we define reinfection as a new positive test 120 days or more after an initial first positive test which was preceded by at least one negative test or where an individual has had a subsequent positive test following four consecutive negative tests regardless of the time since the first positive.
2. A confidence interval gives an indication of the degree of uncertainty of an estimate, showing the precision of a sample estimate. A wider interval indicates more uncertainty in the estimate.

## 5 . Characteristics of people testing positive for COVID-19 data

[Coronavirus \(COVID-19\) Infection Survey, characteristics of people testing positive for COVID-19, UK](#)

Dataset | Released 25 August 2021

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

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

## 7 . 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.

### Credible interval

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

### Cycle threshold (Ct) values

The strength of a positive coronavirus (COVID-19) 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.

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

## 8 . Measuring the data

Additional information on strengths, limitations, appropriate uses, and how the data were created is available in the [Coronavirus \(COVID-19\) Infection Survey Quality Methodology Information \(QMI\)](#). Our [methodology article](#) provides further information around the survey design, how we process data and how data are analysed.

## 9 . Strengths and limitations

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

Further information on test accuracy can be found in our blog: [Accuracy and confidence: why we trust the data from the COVID-19 infection survey](#).

## 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 the University of Oxford, the University of Manchester, Public Health England 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 laboratories to collect and test samples.

### [Coronavirus \(COVID-19\) Infection Survey: antibody and vaccination data for the UK](#)

Article | Updated fortnightly

Antibody and vaccination data by UK country and regions in England from the Coronavirus (COVID-19) Infection Survey. This analysis has been produced 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 Lighthouse Laboratories to collect and test samples.

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

Methods article | Updated 24 August 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.

### [Coronavirus and vaccination rates in people aged 70 years and over by socio-demographic characteristic, England](#)

Article | Released 7 June 2021

First dose COVID-19 vaccination rates among people aged 70 years and older who live in England, both in private households and communal establishments. Includes estimates for the population as a whole by age and sex, and for ethnic minorities, religious groups, those identified as disabled and by area deprivation.

### [The prevalence of long COVID symptoms and COVID-19 complications](#)

Article | Released 4 June 2021

Estimates of the prevalence of self-reported "long COVID", and the duration of ongoing symptoms following confirmed coronavirus infection, using UK Coronavirus (COVID-19) Infection Survey data to 6 March 2021.

### [COVID Symptom Study - what are the new top 5 COVID symptoms?](#)

Web page | Updated 23 June 2021

Daily reports on the ZOE COVID Study app used to identify the current top five symptoms that have emerged in recent weeks, which differ depending on if you've been vaccinated, and how many doses you've had.