

Article

# Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 25 March 2021

Characteristics of people testing positive for the coronavirus (COVID-19) including patient-facing and non-patient-facing job roles, school-aged children, and disabled and non-disabled people.

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# 1 . Main points

- In recent weeks, there is evidence that the percentage testing positive for the coronavirus (COVID-19) has continued to decrease for those in both patient-facing and non-patient-facing job roles.
- The number of socially distanced and physical contacts that adults and school-age children reported with people outside their household decreased at the start of the year and remained low in early March 2021.
- Disabled people who were limited a lot in their daily activities were less likely to test positive for COVID-19 than non-disabled people.

## 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 the characteristics of those testing positive for SARS-CoV-2 – the coronavirus causing the COVID-19 disease in England. 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 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 an older 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.

### 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](#).

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 by age

### About this analysis

This section provides the modelled estimates on positivity rates by patient-facing and non-patient-facing job roles by age; with the two occupational groups split between those aged under 35 years and those 35 years and over. This week we have improved the methods used to produce this analysis and more information is available in our accompanying [dataset](#).

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 3 September 2020 and 8 March 2021.

In recent weeks, the percentage of the population testing positive for the coronavirus (COVID-19) continued to decrease in all groups: those who worked in both patient-facing and non-patient-facing job roles, and those aged under 35 years and 35 years and over.

### **Figure 1: In recent weeks, there is evidence that the percentage testing positive has continued to decrease for those in both patient-facing and non-patient-facing job roles**

Estimated percentage of the population testing positive for COVID-19 on nose and throat swabs by patient-facing role and age, England, from 3 September 2020 to 8 March 2021

#### **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.
3. 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.
4. The estimates from our last publication were produced using a Bayesian model and cannot be directly compared to the estimates in this article, which were produced using a frequentist model.

#### **Download the data**

[.xlsx](#)

## **4 . Number and age of people individuals had contact with**

### **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. 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 11 August 2020 and 8 March 2021. In England, schools fully opened on 8 March, so this analysis does not include the period following the re-opening of schools. We have produced estimates that have been weighted to be representative of the total population in England. Analysis includes all people taking part in the survey, and is presented for school-age children (age 2 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)

## **In school-age children, the proportion of socially distanced contacts reported with all age groups decreased at the start of the year and has remained low in the first week of March 2021**

We present the proportion of school-age children reporting each category of socially distanced contact in Figure 2. Among school-age children, the number of socially distanced contacts reported with all age groups decreased at the start of the year and has remained low through to the first week of March 2021, compared with December 2020. There is a consistent trend over time, with school-age children reporting more socially distanced contacts with those aged under 18 years than with people aged 18 to 69 years or those aged 70 years and over.

### **Figure 2: The number of socially distanced contacts reported with all age groups for school-age children decreased at the start of the year and remained low in the first week of March**

Proportion of school age children by number of socially distanced contacts with different age groups, England, from 11 August 2020 to 8 March 2021

#### **Notes:**

1. These 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 or other institutional settings.
3. This analysis includes all participants between 11 August 2020 and 8 March 2021, regardless of whether they tested positive or negative for COVID-19.

#### **Download the data**

[.xlsx](#)

Among adults, the number of socially distanced contacts reported with all age groups decreased in early January 2021 and has remained low through to the first week of March 2021, compared with December 2020. Adults reported 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 decreased in January 2021 and remained low in early March**

Proportion of adults by number of socially distanced contacts with different age groups, England, from 11 August 2020 to 8 March 2021

#### **Notes:**

1. These 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 or other institutional settings.
3. This analysis includes all participants between 11 August 2020 and 8 March 2021, regardless of whether they tested positive or negative for COVID-19.

#### **Download the data**

[.xlsx](#)

### **The number of physical contacts reported with all age groups for both school-age children and adults decreased at the start of the year and has remained low through to the first week of March 2021**

Among school-age children, the trends in physical contacts are very similar to socially distanced contacts trends, although the number of physical contacts was lower. The number of physical contacts school-age children reported with those aged under 70 years decreased in early January 2021 and has remained low through to the first week of March 2021, compared with December 2020. 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.

Among adults, trends in physical contacts over time are very similar to socially distanced contact trends, but there are more respondents who have reported physical contact with nobody outside of their household. The number of physical contacts adults reported with those under the age of 70 years decreased in early January 2021 and has remained low through to the first week of March 2021, compared with December 2020. Adults reported more physical contacts with those aged 18 to 69 years than with people under the age of 18 years and those 70 years and over.

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

More information on socially-distanced and physical contact is also available in the [Opinions and Lifestyle Survey](#), which examines the impact of coronavirus (COVID-19) pandemic on people, households and communities in Great Britain.

## **5 . Impact of disability on positivity over time and social contacts over time**

## About this analysis

This section covers the likelihood of individuals testing positive for the coronavirus (COVID-19) from nose and throat swabs in England, from 1 September 2020 to 28 February 2021 by self-reported disability status.

## Definitions

In this article, a person is considered disabled if they have a self-reported long-standing illness, condition or impairment, which causes difficulty with day-to-day activities. This definition is consistent with the Equality Act 2010 and the [Government Statistical Service \(GSS\) harmonised definition](#).

In this analysis, the reference group, those who are referred to as non-disabled, is made up of individuals who either responded “no” to having a long-term health condition or who responded “yes” but reported the long-term health condition did not reduce their ability to carry out day-to-day activities. The group referred to as “disabled people – limited a little” is made up of individuals who answered “yes” to having a long-term health condition and reported that their condition reduced their ability to carry out their day-to-day activities a little, while the group referred to as “disabled people – limited a lot” also answered “yes” and reported that their condition reduced their ability to carry out their day-to-day activities a lot. The distinction between limited a little and limited a lot is based solely on data from the survey and not inferred from any other information. Therefore, it only implies a difference based on self-reported activity restriction.

For more information on the questions used in our analysis, please see our latest participant [questionnaire](#).

## Methodology

This analysis is based on data from participants aged 18 to 80 years in England, from 1 September 2020 to 28 February 2021 and is presented by self-reported disability.

Where participants self-reported that their long-term health condition had a different level of impact on their daily activities at different dates during the study period, the highest level of restrictions on activity was taken<sup>1</sup>. For example, if a respondent reported that their health condition had a little impact on their day-to-day life at one point in the study and a lot of impact at another, they would be placed in the category of “disabled people – limited a lot”.

Likelihood of testing positive is based on a statistical model accounting for calendar time, age (varying effect over calendar time), sex, ethnicity, household size, multigenerational household, Index of Multiple Deprivation rank<sup>2</sup>, region, and urban or rural status. It is important to note that English regions were modelled separately, allowing the effect of age to vary over calendar time, to reflect changes in infection levels across regions and age groups over the period studied. Estimates were then combined to produce an average estimate by disability status across England overall.

This analysis considers the likelihoods of testing positive for disabled people who are limited a little or a lot, compared with those who are not disabled.

## Interpreting the chart

Results are presented as odds ratios. When a characteristic (for example, being male) has an odds ratio of one, this means that there is neither an increase nor a decrease in the likelihood of infection compared with a reference category (for example, being female).

An odds ratio of higher than one means that there is an increased likelihood of infection compared with the reference category.

An odds ratio of lower than one means that there is a reduced likelihood of infection compared with the reference category.

For the purpose of this analysis, the model will show the likelihood of individuals in the “disabled people – limited a little” group and “disabled people – limited a lot” group testing positive for COVID-19 compared with individuals in the “non-disabled people” group (the reference category).

The odds ratios are presented with 95% [confidence intervals](#). If the range of the confidence interval crosses the threshold of one, we cannot say with any certainty whether infection is more or less likely for that characteristic compared with the reference category, even if the estimate is not close to one. In some instances, this will be because we estimate there to be no differences (where the odds ratio estimate is close to one), but it can also reflect less information about a characteristic in our sample.

From 1 September 2020 to 28 February 2021, disabled people who are limited a lot were significantly less likely to test positive for COVID-19 compared with non-disabled people. However, the estimated reduction in risk of testing positive was small, at 12% less likely (odds ratio: 0.88; 95% confidence intervals: 0.78 to 0.98).

There is no evidence of a difference in the likelihood of testing positive for COVID-19 between disabled people who are limited a little and non-disabled people (odds ratio: 0.98, 95% confidence interval: 0.90 to 1.07).

A possible explanation for disabled people who are limited a lot being less likely to test positive for COVID-19 could be that these individuals engage in more protective behaviours, such as shielding.

There was some limited evidence of regional variation, but overall, the differences were small. The data for the regional models is in our accompanying [dataset](#).

#### **Figure 4: Disabled people who were limited a lot were less likely to test positive for COVID-19 compared with non-disabled people**

The odds ratios of disabled people – limited a little and limited a lot testing positive for coronavirus (COVID-19) on a swab test compared with individuals from the non-disabled group, England, between 1 September 2020 and 28 February 2021

#### **Notes:**

1. These 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 or other institutional settings.
3. Disability status is self-reported and the distinction between limited a lot and limited a little is based on self-reported data from the survey and not inferred from any other information.

#### **Download the data**

[.xlsx](#)

## Analysis of socially distanced and physical contacts over time by disability status

This analysis is based on weighted data from participants aged 18 to 80 years who responded to the survey between 1 September 2020 and 28 February 2021 in England and looks at how often individuals are reporting contact with other people outside their own household by self-reported disability status. We classify contact and report the number of contacts in the same way as the analysis reported in [Section 4](#).

Our analysis suggests since September 2020, the number of socially distanced contacts reported with people across all ages has decreased among both disabled and non-disabled people.

However, since September 2020, non-disabled and disabled people who are limited a little have reported more socially distanced contacts than disabled people who are limited a lot.

There is limited evidence of a difference in the number of physical contacts reported between non-disabled and disabled people. Non-disabled people may have been more likely to have physical contacts with larger numbers of people, in particular prior to Christmas 2020.

The number of physical contacts has decreased over time from September and October 2020, among both disabled people who are limited a little and limited a lot.

The data for social and physical contact by disability status is presented in the accompanying [dataset](#).

### **Figure 5: Non-disabled people and disabled people who are limited a little have reported more socially distanced contact than disabled people who are limited a lot**

Proportion of socially distanced contacts with those aged 18 to 69 years by self-reported disability status, England, from 1 September 2020 to 28 February 2021

#### **Notes:**

1. These 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 or other institutional settings.
3. This analysis includes participants aged 18 to 80 years between 1 September 2020 and 28 February 2021, regardless of whether they tested positive or negative for COVID-19.
4. Disability status is self-reported and the distinction between limited a lot and limited a little is based on self-reported data from the survey and not inferred from any other information.

#### **Download the data**

[.xlsx](#)



This difference in the number of reported socially distanced and physical contacts between non-disabled people and disabled people who are limited a little in comparison with disabled people who are limited a lot could be because of protective behaviours, such as social distancing and shielding undertaken during the pandemic. In addition, those who are limited a lot may be less able to see people than those in both other groups analysed because of greater limits on their mobility.

In July 2020, [Coronavirus and the social impacts on disabled people](#) reported around 1 in 10 disabled people (9%) reported feeling very unsafe when outside their home because of the coronavirus pandemic, compared with fewer than 1 in 25 non-disabled people (3%). Similarly, disabled people were less likely to report leaving their homes, for exercise, to meet up with people in a personal place, to eat or a drink at a restaurant, café, bar or pub, to travel to work or to take children to and from school. These issues with feelings of safety and the impact on mobility for disabled people, particularly for those who are impacted a lot, could also help to explain the trends in positivity seen previously.

Analysis from February 2021 provides [estimates of differences in COVID-19 mortality risk by self-reported disability status](#) and diagnosed learning disability status for deaths occurring up to 20 November 2020, using linked data from the 2011 Census, death registrations, and primary care and hospital records. Analysis such as this around the increased rates of mortality from COVID-19 among disabled people demonstrate the risks of contracting COVID-19 for disabled people, even if the likelihood of disabled people contracting COVID-19 is the same for those limited a little or slightly lower for those limited a lot.

For further data on home-leaving behaviour and socialising among disabled people, please see datasets from [March 2020 to February 2021](#). These data were not collected from the same cohort of respondents and were looking at different time periods to the ones shown previously so all connections between these results and this analysis should be interpreted with caution.

These [data from 2020](#), look at pre-pandemic rates of loneliness among disabled people between the year ending April 2014 and the year ending March 2019. In March 2019, 13.9% of disabled people reported feelings of loneliness often or always compared with 3.8% of non-disabled people.

## Notes for Section 5: Likelihood of testing positive for COVID-19 by disability status

1. Where participants self-reported that their long-term health condition had a different level of impact on their daily activities at different dates, the highest level of restrictions on activity was taken. The highest level of [self-reported](#) restriction is “Yes, a lot”, followed by “Yes, a little” and “Not at all”.
2. [The Index of Multiple Deprivation \(IMD\)](#) is the official measure of relative deprivation in England. It combines indicators of individuals’ living conditions from seven domains – income, employment, education, health, crime, housing and environment – to rank the deprivation experienced by people in small areas of England in relation to other small areas in England. People can be regarded as deprived if they lack any kind of resources, not just income.

## 6 . Coronavirus (COVID-19) Infection Survey data

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

Dataset | Released 25 March 2021

Characteristics of people testing positive for the coronavirus (COVID-19) in England 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](#).

### Odds ratio

An odds ratio is a measure of how likely an outcome is given a particular characteristic. In the COVID-19 context, they can be used to determine whether a characteristic (for example, age) is a risk factor for testing positive for the disease. The odds ratio measures can also be compared with each other to compare the different levels of risk associated with different characteristics (for example, age groups).

## 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.

## 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](#)

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.

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

Article | 22 February 2021

The analyses in this article compares the likelihood of testing positive for the coronavirus (COVID-19) on a swab test at any time between 1 September 2020 and 7 January 2021 between occupations.

### [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.

### [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 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 \(COVID-19\) 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.