Office for National Statistics

Statistical bulletin

Coronavirus (COVID-19) Infection Survey, characteristics of people testing positive for COVID-19, UK: 17 November 2021

Characteristicsof 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, UK Health Security Agency andWellcomeTrust.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 Laboratory to collect and test samples.

Contact:
Rhiannon Yapp and Eleanor Fordham
infection.survey.analysis@ons.gov.uk
+44 1633 560499

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1 . Main points

- Those who have received at least one dose of a coronavirus (COVID-19) vaccine continued to be less likely to test positive for COVID-19 than those not vaccinated; people who received a booster were even less likely to test positive than those who had a second dose of Astra Zeneca or Pfizer more than 90 days ago in the fortnight ending 6 November 2021.

- Those living in a household of two or more people continued to be more likely to test positive than those living in single occupancy households in the fortnight ending 6 November 2021.

- Adults who lived with someone aged 16 years or under were more likely to test positive, and people aged under 70 years who lived with someone aged 70 years or over were less likely to test positive, in comparison to those not living with people of these ages in the fortnight ending 6 November 2021.

- People working in the education industry sector continued to be more likely to test positive in comparison to those working in other sectors in the fortnight ending 6 November 2021; the higher risk is likely related to the recent high infection levels among school aged children.

- Those who spent more time socialising outside the home were more likely to test positive for COVID-19 in the fortnight ending 6 November 2021.

- 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, although school age children had fewer contacts during the school holidays.

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. This is part of our series of analysis on the characteristics of people testing positive for COVID-19.

In this bulletin, we refer to the number of current COVID-19 infections within the population living in private residential households. We exclude those in hospitals, care homes and/or other communal establishments. In communal establishments, rates of COVID-19 infection are likely to be different.

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. In addition, our recent analysis shows that vaccination reduces the risk of testing positive.

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 . Predictors of positivity, UK

This analysis was first presented in our analysis of populations in the UK by risk of testing positive for coronavirus (COVID-19) September 2021 release, which provides a more detailed explanation of the methods used. We present findings for the most recent fortnight in this section, but a longer time series covering 23 May to 6 November 2021 is available in the accompanying dataset.

Estimates of the likelihood of some specific characteristics affecting an individual testing positive can fluctuate from one fortnight to another, meaning that findings which were significant in one period may not necessarily be significant in another period. This may be because the effect of a characteristic is genuinely changing or because we do not have sufficient individuals with that characteristic in a particular fortnight to exclude any differences we find being down to chance.

Our latest data for the fortnight ending 6 November 2021 continue to show similar conclusions to our last publication, namely:

- those who have received at least one dose of a coronavirus vaccine continued to be less likely to test positive for COVID-19 than those not vaccinated; those who received a booster[1] were even less likely to test positive than those who had a second dose of Astra Zeneca or Pfizer more than 90 days ago, this is the first time we have included boosters in the model
- those living in a household of multiple occupancy continued to be more likely to test positive than those living in single occupancy households
- people working in the education sector[2] continued to be more likely to test positive in comparison with those working in other sectors; this is likely related to the continuing higher infection levels among school-aged children
- those who have had a COVID-19 infection previously continued to be less likely to test positive than those who had not
- individuals who regularly carry out lateral flow tests continued to be more likely to test positive than those who did not; this is consistent with lateral flow tests being carried out by those who are otherwise at higher risk

In the same fortnight:

- people who work outside of their home were more likely to test positive than those working from home
- people who live in a household where someone had contact with a hospital or care home were less likely to test positive, in comparison to households where no-one had contact
- school aged children and adults aged around 40 to 50 years were more likely to test positive than other ages
- adults who lived with someone aged 16 years or under were more likely to test positive, and people aged under 70 years who lived with someone aged 70 years or over were less likely to test positive, in comparison to those not living with people of these ages

The findings on people living with a child and the elderly come from a set of "household characteristic" variables that were included for the first time in this model, which also looked at the effect of living with someone with a disability.

Figure 1: Characteristics of people associated with being more or less likely to test positive for coronavirus (COVID-19) in the fortnight ending 6 November 2021

Estimated likelihood of testing positive for coronavirus on nose and throat swabs by screened characteristic, UK, 24 October to 6 November 2021

Notes:

1. The core demographic variables (as explained in the Coronavirus (COVID-19) Infection Survey technical article: analysis of populations in the UK by risk of testing positive for COVID-19, September 2021) are included to adjust for these factors. We do not draw conclusions about the core demographic variables in this model.

2. An odds ratio indicates the likelihood of an individual testing positive for COVID-19 given a particular characteristic/variable. See glossary for full definition.

Download the data

An additional model examines the effect of behavioural characteristics on the likelihood of testing positive, while controlling for the core demographic variables and significant screening characteristics shown above. This model now includes two types of face covering variables – "use of face coverings in enclosed spaces" and "use of face coverings in school or work" – separately for various age groups. There was no statistical evidence in the fortnight ending 6 November 2021 that face masks affected a person's likelihood of testing positive, which is different to previous findings. Results of the use of face coverings over time can be found in the accompanying dataset alongside other variables used in the model.

Our findings suggest that in the fortnight ending 6 November 2021:

- those who had physical contact with individuals aged under 18 years were more likely to test positive than those that had no contact with individuals aged under 18 years

- those who spent more time socialising outside the home were more likely to test positive for COVID-19

Figure 2: Behavioural characteristics of people associated with being more or less likely to test positive for coronavirus (COVID-19) in the fortnight ending 6 November 2021

Estimated likelihood of testing positive for coronavirus on nose and throat swabs by screened behaviour, UK, 24 October to 6 November 2021

Notes:

1. The core demographic variables and screened characteristic variables presented in Figure 1 (as explained in the Coronavirus (COVID-19) Infection Survey technical article: analysis of populations in the UK by risk of testing positive for COVID-19, September 2021) are included to adjust for these factors. We do not draw conclusions about the core demographic variables or screened characteristic variables in this model.

2. An odds ratio indicates the likelihood of an individual testing positive for COVID-19 given a particular characteristic/variable. See glossary for full definition.

Download the data

About this analysis

This analysis is based on models that are fitted at the UK level and include all participants aged two years and over. Key demographic variables were age, region, sex, ethnicity, deprivation, household size, multi-generational household, and urban or rural classification. Additional variables are included only if found to be significant in the two weeks presented in the bulletin. More information on the methods used in this analysis can be found in our Coronavirus (COVID-19) Infection Survey technical article: analysis of populations in the UK by risk of testing positive for COVID-19, September 2021.

Notes for: Predictors of positivity, UK

1. We asked respondents how many doses of vaccine they have received. We describe those who have received three doses as having received a booster.

2. Work sectors are self-reported and cover a wide variety of occupations; for example, someone working in the education sector could be a teacher at a primary school or could be a chef at a college.

3 . Number and age of people with whom individuals had contact

We report on recent trends in this section, but the full time series for this analysis, which covers the period between 11 July 2020 and 30 October 2021 for England, and 19 September 2020 to 30 October 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 contacts with people outside the household continued to increase across the UK

The trends in socially-distanced and physical contacts are very similar for England, Wales, Northern Ireland and Scotland, and 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, although school age children had fewer contacts during the school holidays. 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 coronavirus (COVID-19) related school policies vary by nation and this is reflected in the data. 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 findings on socially distanced and physical contact reported in the Opinions and Lifestyle Survey (OPN), which examines the impact of the coronavirus pandemic on people, households and communities in Great Britain.

4 . 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 17 November 2021
Characteristics of people testing positive for coronavirus (COVID-19) taken from the COVID-19 Infection Survey.

5 . 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, UK Health Security Agency 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

6 . 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.

Odds ratio

An odds ratio indicates the likelihood of an individual testing positive for coronavirus (COVID-19) given a particular characteristic or variable. When a characteristic or variable has an odds ratio of one, this means there is neither an increase nor a decrease in the likelihood of testing positive for COVID-19 compared with the reference category. An odds ratio greater than one indicates an increased likelihood of testing positive for COVID-19 compared with the reference category. An odds ratio less than one indicates a decreased likelihood of testing positive for COVID-19 compared with the reference category.

Deprivation

Deprivation is based on an index of multiple deprivation (IMD) score or equivalent scoring method for the devolved administrations, from 1, which represents most deprived, up to 100, which represents least deprived.

For more information, see our methodology page on statistical uncertainty.

7 . 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.

8 . 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.

9 . Related links

Coronavirus (COVID-19) Infection Survey, UK
Bulletin | Released 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, UK Health Security Agency and Wellcome Trust. This study is jointly led by the Office for National Statistics (ONS) and the Department for Health and Social Care (DHSC) working with the University of Oxford and Lighthouse Laboratory to collect and test samples.

Coronavirus (COVID-19) Infection Survey: antibody and vaccination data for the UK
Bulletin | Released 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 the University of Oxford, the University of Manchester, UK Health Security Agency, 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 Laboratory to collect and test samples.

COVID-19 Infection Survey: methods and further information
Methodology 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.

Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK
Bulletin | Released monthly
Estimates of the prevalence of self-reported "long COVID" and associated activity limitation, using UK Coronavirus (COVID-19) Infection Survey data.

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

COVID-19 Schools Infection Survey, England: Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in school pupils and staff: July 2021
Bulletin | Released 28 September 2021
Initial estimates of prevalence of ongoing symptoms following coronavirus (COVID-19) infection in staff and pupils from the COVID-19 Schools Infection Survey (SIS) across a sample of schools, within selected local authority areas in England. SIS is jointly led by the London School of Hygiene & Tropical Medicine, Public Health England and the Office for National Statistics.

Symptoms and SARS-CoV-2 positivity in the general population in the UK
Preprint article | Released 19 August 2021
Using data and samples collected by the COVID-19 Infection Survey at regular visits to representative households across the UK, researchers from the University of Oxford compared symptoms in new PCR-positives and comparator test-negative controls.