Office for National Statistics

Article

Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, August 2020

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

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Correction

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The data in Figure 3: A higher percentage of people exhibiting one or more symptoms of COVID-19 at the time of the test tested positive on a nose and throat swab than those reporting no symptoms, was incorrectly labelled. Figure 3 has now been corrected so that each data bar is assigned to the correct label.

Apologies for any inconvenience caused.

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1 . Main points

- 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 or other institutional settings in England.
- There is evidence that Asian or Asian British individuals were more likely to test positive for COVID-19 than White individuals over the most recent eight weeks of the study, and there is also some evidence to suggest a higher percentage of individuals from ethnic minorities have had COVID-19 in the past.
- Those in one-person households were more likely to test positive for COVID-19 on a nose and throat swab than individuals in two-person households over the latest eight-week period of the study, but there was no evidence of differences for larger households.
- It is not possible to say whether those working in patient-facing healthcare roles were more likely to test positive for COVID-19 than other individuals based on swabs taken over the most recent eight-week period of the study, although there is evidence to suggest this was not the case earlier in our study.
- A higher percentage of those in patient-facing healthcare roles or resident-facing social care roles tested positive for antibodies, indicating past infection, than individuals not working in these roles.
- While those who have symptoms are more likely to test positive on nose and throat swabs than those without symptoms, out of those who have ever tested positive for COVID-19 on nose and throat swabs over the whole period of our study just 28% reported any evidence of symptoms around the time of their positive swab test.
- There is no evidence to suggest differences in the likelihood of people of different ages testing positive for COVID-19 on nose and throat swabs over the most recent eight-week period of the study, but there is some limited evidence to suggest a smaller proportion of older people within community settings test positive for COVID-19 antibodies, indicating they have had COVID-19 in the past.
- There is no evidence to suggest differences in the likelihood of males and females testing positive for COVID-19 on nose and throat swabs over the most recent eight-week period of the study nor evidence of differences in the percentage of people of either sex testing positive for COVID-19 antibodies, indicating they have had COVID-19 in the past.
- It is not possible to say whether there were differences in the likelihood of testing positive for COVID-19 on a nose and throat swab over the most recent eight-week period of the study based on working location nor whether there were differences in the percentage of individuals testing positive for COVID-19 antibodies by working location, indicating they have had COVID-19 in the past.

2 . What this analysis covers

This article presents analysis on the characteristics of those testing positive for SARS-CoV-2 – the coronavirus causing the COVID-19 disease based on findings from the COVID-19 Infection Survey. The analysis is based on survey results from England. We include both 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, and past infections, which we define as testing positive for antibodies to SARS-CoV-2. In this article, we use COVID-19 to mean testing positive for SARS-CoV-2, with or without having symptoms.

More information on our headline estimates of the overall number of positive cases in England and Wales are available in our latest bulletin.

Further information on what the analysis covers is provided at the start of each section.

3 . Likelihood of testing positive for COVID-19 by characteristics

Analysis in this section

This section covers the likelihood of individuals testing positive for the coronavirus (COVID-19) by different characteristics. The results are presented in two models:

- entire population model: relevant to all participants regardless of age (individuals aged 2 years and over)
- working age population model: relevant to individuals of working age (those aged 16 to 74 years)

The modelled analysis is based on nose and throat swab test results provided by study participants during the eight-week period between 8 June and 2 August 2020.

Both models include a set of general characteristics: sex, age, ethnicity, household size and whether individuals have come into recent contact with confirmed or suspected cases of COVID-19. The working age model also includes characteristics that relate to work: working location and whether individuals work in patient-facing healthcare roles.

Estimates are modelled to identify the risk associated with each characteristic, while controlling for the effects of other characteristics. This gives a better reflection of the true risk associated with each characteristic. This approach differs from our previous article, in which infection rates for each characteristic were presented. More information on the modelling used is available in Section 7: COVID-19 Infection Survey methodology.

Interpreting the charts

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 base category (for example, being female). An odds ratio of higher than one means that there is an increased likelihood of infection compared with the base category. An odds ratio of lower than one means that there is a reduced likelihood of infection compared with the base category. The base categories are presented in Figures 1 and 2 as "Comparison groups".

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 base 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.

Results from the entire population model

Figure 1 presents the likelihood of COVID-19 infection for the general characteristics based on nose and throat swabs taken over the most recent eight-week period of the study. A more detailed explaination of how to interpret the graph is available in Section 7: COVID-19 Infection Survey methodology.

Figure 1: Modelled likelihood of testing positive for COVID-19 by general characteristics

The odds ratios of any individual testing positive for the coronavirus (COVID-19) on a nose and throat swab by sex, age bands, ethnic groups, household size and recent contact with confirmed or suspected cases of COVID-19, England, 8 June to 2 August 2020

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.

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No evidence of differences in the likelihood of individuals testing positive for COVID-19 by sex or age

Figure 1 indicates that there was no evidence of a difference in the likelihood of males contracting COVID-19 compared with females over the most recent eight-week period of the study (8 June to 2 August 2020). This is controlling for other general factors such as age, ethnicity, household size and contact with known or suspected COVID-19 cases.

By age bands, there is not enough evidence to say with confidence that there were differences in the likelihood of those aged 2 to 11 years, 12 to 19 years, 20 to 49 years or 70 years and over being infected with COVID-19 compared with those aged 50 to 69 years. While the odds ratio estimates appear to indicate that it is less likely for people in other age groups to be infected than individuals aged 50 to 69 years, the confidence intervals overlap one (same odds), meaning that we cannot say this with confidence.

Individuals from the Asian and Asian British ethnic group are more likely to test positive for COVID-19 than those from the White ethnic group

Individuals identifying as Asian or Asian British were 4.8 times (95% confidence interval: 2.1 to 10.9) more likely to test positive for COVID-19 on a swab test than people of White ethnicity. This is based on nose and throat swabs taken during the most recent eight-week period of the study (8 June to 2 August 2020). While the 95% confidence intervals surrounding this estimate are large, the lower interval still indicates a higher chance of infection for those of the Asian or Asian British ethnic group.

For the remaining ethnic groups, the limited number of positive cases reported in our study over the latest eight-week period means that it is difficult to make conclusions about differences between ethnic groups.

The confidence intervals accompanying all odds ratios for ethnic groups in the model are wide, as the number of people from all ethnic groups other than the White ethnic group testing positive in our survey is small.

Individuals in one-person households are more likely to test positive for COVID-19 than those in two-person households

There is some evidence to suggest that household size affects the percentage of individuals testing positive for COVID-19 on a swab test taken between 8 June and 2 August 2020.

Those in one-person households were estimated to be around 2.1 times more likely (95% confidence interval: 1.2 to 3.9) to test positive for COVID-19 on a swab test than those in two-person households. Recently, we have introduced new questions in the study about contacts, so we will investigate why those in one-person households might be more likely to test positive in a future article.

There is no evidence to suggest that those living in larger households, containing either three, four or more than four people, are at higher or lower risk of testing positive for COVID-19 than those living in two-person households. The estimated odds of testing positive for individuals living in larger households are similar to those living in two-person households, while the confidence intervals accompanying the estimates indicate that the actual odds could be either higher or lower.

Our previous article showed that infection rates were higher in larger households than two-person households. However, this analysis was not adjusted to account for other factors. The swab tests analysis in the previous article also related to an earlier time period in the study (26 April to 27 June 2020). Risk factors may not have the same effects over time; for example, factors affecting the likelihood of infection when prevalence was higher in April and May may not have the same effect when prevalence is lower.

Individuals coming into recent contact with suspected or confirmed cases of COVID-19 were more likely to test positive themselves than those not reporting recent contact

The study participants were asked whether they have had any contact with either a known or suspected case of COVID-19 and when this was. People who had come into recent contact with a known or suspected case (contact within the last 30 days) were 3.8 times more likely (95% confidence interval: 1.8 to 7.9) to have a positive swab test than those who did not report recent contact with a known or suspected case. This is based on nose and throat swabs taken during the most recent eight-week period of the study (8 June to 2 August 2020).

More about coronavirus

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

Results from the working age population model

Figure 2 shows the odds ratios of COVID-19 infection for characteristics of the working age population (those aged 16 to 74 years) based on nose and throat swabs taken during the most recent eight-week period of the study (8 June to 2 August 2020). The model controls for the general characteristics in Figure 1 as well as for working location and whether the individual works in patient-facing healthcare roles.

The odds ratios for the general characteristics from this model were very similar to those in Figure 1. The full model results are available in our data tables.

Figure 2: Modelled likelihood of testing positive for COVID-19 by working characteristics

The odds ratios of any working age individuals (aged 16 to 74 years) testing positive for the coronavirus (COVID-19) by working location and patient-facing healthcare roles, England, 8 June to 2 August 2020

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. The model also controls for the following factors: age, sex, ethnic groups, household size, recent contact with known or suspected coronavirus (COVID-19) cases. The full model results are available in our data tables.

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It is not possible to say whether there were differences in the likelihood of contracting COVID-19 by working location

It is not possible to say whether individuals who reported working outside of the home, either entirely or partly, were more likely to be infected with COVID-19 than those working only from home. This is based on nose and throat swabs taken during the most recent eight-week period of the study (8 June to 2 August 2020).

There is also no evidence to suggest that adults aged between 16 and 74 years who reported not being in work were more likely to be infected with COVID-19 than those working from home. This includes individuals who are retired, students, furloughed or not working for another reason. As with those who work outside the home, the confidence intervals do not suggest that there was any evidence of the actual likelihood being higher or lower.

It is not possible to say whether the likelihood of COVID-19 infection was greater for patient-facing healthcare workers than for others for the most recent period of the study, unlike in earlier periods

It is not possible to say whether the likelihood of testing positive for COVID-19 was greater for individuals working in patient-facing healthcare roles compared with individuals not working in these roles, based on nose and thoat swabs taken during the most recent eight-week period of the study (8 June to 2 August 2020). However, there is evidence that patient-facing healthcare workers were at greater risk than others earlier on in our study.

Our previous article showed that infection rates were higher for those working in patient-facing or resident-facing health and social care roles, which related to an earlier time period in the study (26 April to 27 June 2020). Further modelling[1] consistent with the methodology used in this article suggests that in more recent periods, the heightened risk of infection for patient-facing healthcare workers has reduced in comparison to individuals not in these roles.

Notes for Likelihood of testing positive for COVID-19 by characteristics:

1. Additional similar logistic regression models were produced based on the latest 10 weeks and latest six weeks of data. Further, multivariable multi-level regression and post-stratification models based on those used to estimate positivity rates over time provide strong evidence of increased risk to those in patient-facing healthcare roles through 29 June, effects that are substantially attenuated fitting the same models to the last six weeks of data.

4 . Infection rates by symptoms of COVID-19

About this analysis

Unlike Section 3: Likelihood of testing positive for COVID-19 by characteristics, the analysis in this section does not control for other factors. The analysis is based on individuals who have ever tested positive for the coronavirus (COVID-19) from a nose and throat swab at any point in the study (26 April to 2 August 2020), even if they now test negative. Including all those who ever tested positive or never tested positive on nose and throat swabs gives a larger dataset, enabling more accurate analysis.

Infection rates are higher for those reporting evidence of symptoms of COVID-19

Individuals taking part in the COVID-19 Infection Survey were asked whether they had experienced a range of possible symptoms[1] on the day when they were tested[2] and also separately whether they felt that they had symptoms compatible with COVID-19 infection. In this analysis, we compare these factors at the first positive swab test for anyone testing positive in the study and the last negative swab test for anyone who never had a positive test. It is important to note that participants were not professionally diagnosed and symptoms were self-assessed.

Of those reporting any evidence of symptoms of COVID-19 from either question, 2.73% (95% confidence interval: 1.76% to 4.03%) tested positive on a swab test. By comparison, the infection rate for those not reporting any symptoms was much lower at 0.26% (95% confidence interval: 0.22% to 0.31%).

When narrowing down to those reporting specifically having a cough or fever or loss of taste or smell on the day of testing, 6.87% (95% confidence interval: 4.12% to 10.64%) tested positive for COVID-19. This compares with 0.27% of those who did not report having these specific symptoms on the day of their positive test (95% confidence interval: 0.23% to 0.31%).

Figure 3: A higher percentage of people exhibiting one or more symptoms of COVID-19 at the time of the test tested positive on a nose and throat swab than those reporting no symptoms

Estimated percentage of those ever testing positive for the coronavirus (COVID-19) in the study, by symptoms reported, England, 26 April to 2 August 2020

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.

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Only around 28% of individuals testing positive for COVID-19 reported having symptoms

The analysis before shows that those reporting symptoms are much more likely to have contracted the virus. However, despite this, of those who had tested positive, only 28% (95% confidence interval: 22% to 36%) reported any evidence of symptoms at the time of their swab test or at either the preceding or subsequent swab test. The share fell to 16% of those testing positive when accounting for those who reported evidence of symptoms only at the time of their swab test.

The remaining 72% of positive cases either did not report having any of the specific or general symptoms on the day of their positive swab test, preceding swab test or subsequent swab test or did not answer both questions. This suggests there is a potentially large number of asymptomatic cases, but it is important to note that symptoms were self-reported rather than professionally diagnosed. Additionally, those without any evidence of symptoms will include instances where the questions relating to symptoms were not answered.

This analysis is based on 165 individuals in the sample who tested positive for COVID-19. This is a very small denominator, meaning the confidence intervals are wide. If any of these are false-positives, this could have an effect on the results. Generally, false-positives would be expect to make the real effects smaller rather than larger, as these individuals would not be expected to have any symptoms; that is, for our estimates to be underestimates of real effects rather than overestimates.

Notes for Infection rates by symptoms of COVID-19

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.

2. Here, we compare symptoms from the first time a person tested positive or from their most recent test if they have never tested positive in the study.

5 . Characteristics of individuals testing positive for COVID-19 antibodies

About this analysis

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

It takes between two and three weeks for the body to make enough antibodies to fight the infection but once a person recovers, 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 COVID-19 in the past, although 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.

The analysis in this section is based on results from 4,840 individuals received since the start of the study on 26 April up to 26 July 2020. Of those who have provided blood samples, 241 tested positive for antibodies.

The analysis in this section of the article is different to the analysis and results presented in earlier sections of this article, which are based on swab test results identifying current infections.

The latest headline figures for the overall number of people and in England and by region of England testing positive for antibodies are available in our latest bulletin. The analysis in our bulletin is presented over a different time period to the analysis in this article.

No evidence of differences in the percentage of individuals testing positive for antibodies by sex, but there is some evidence of differences by age groups

There was no evidence of differences in the proportions of males or females testing positive for antibodies to COVID-19, based on blood samples taken during the study.

There was some evidence to suggest a trend towards a decreasing percentage of individuals testing positive for antibodies with increasing age. However, this is not fully reflected in the statistical testing conducted that compares each categorical age group with the others, which is done rather than directly testing for the trend.

It is important to recognise that our survey concerns community settings and so does not include people in institutional settings, such as care homes. Care homes are particularly important in understanding the infection rate provided for those aged 70 years or over. Further insight into COVID-19 infections in care homes can be found in the first results from the Vivaldi study.

The initial findings of the Imperial College London REACT-2 study support the findings of our study. The REACT-2 findings also suggest that there is no difference in seroprevalence by sex and that younger age groups were more likely to test positive for antibodies than older age groups. The REACT-2 study uses a finger prick test to generate data for antibody analysis. It is important to note that blood samples in the REACT-2 study are self-administered, rather than taken by a trained nurse, phlebotomist or healthcare assistant.

Figure 4: Percentage of people testing positive for COVID-19 antibodies by sex and age bands

Estimated percentage of those ever testing positive for antibodies to the coronavirus (COVID-19) in the study, by age and sex, England, 26 April to 26 July 2020

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.

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A higher percentage of ethnic minorities have tested positive for antibodies than those of White ethnicity

There is some evidence of differences in the percentage of individuals testing positive for antibodies between people of different ethnic groups. Initial findings show that those identifying as White are less likely to test positive for antibodies than ethnic minorities.[1] Around 4.8% (95% confidence interval: 4.2% to 5.4%) of those identifying as White tested positive for COVID-19 antibodies, compared with 11.1% (95% confidence interval: 6.5% to 17.4%) of individuals from those of all other ethnic groups.

When looking at specific ethnic groups, there is some evidence from statistical testing that those identifying as Asian or Asian British are more likely to test positive for antibodies than individuals identifying as White. For the remaining ethnic groups, however, it is difficult to make conclusions about differences in the percentage testing positive for COVID-19 antibodies because of the limited number of individuals from these groups providing positive blood tests so far in our study.

This is similar to the initial findings of the REACT-2 study, which also showed higher prevalence of antibodies among ethnic minorities compared with individuals of White ethnicity.

Figure 5: Evidence that the percentage of people of ethnic minorities testing positive for COVID-19 antibodies is greater than for those of White ethnicity

Estimated percentage of those ever testing positive for antibodies to the coronavirus (COVID-19) in the study, by ethnic groups, England, 26 April to 26 July 2020

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.

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Evidence to suggest that the percentage of individuals working in patient- or resident-facing health and social care roles testing positive for antibodies to COVID-19 is higher than for other working age adults

Our study shows that those working in patient-facing healthcare or resident-facing social care roles are more likely to have ever been infected by COVID-19 over the study period than those not working in these roles. This includes NHS professionals, such as nurses and doctors, as well as social care workers, such as nursing home or home care workers and social workers.

Of those in our study who reported working in patient-facing healthcare or resident-facing social care roles, 12.6% tested positive for COVID-19 antibodies from a blood test during the study period (95% confidence interval: 8.3% to 18.2%). By comparison, the percentage of people reporting not working in these types of roles testing positive for COVID-19 on a swab test was lower at 4.7% (95% confidence interval: 4.1% to 5.5%).

This complements the initial findings of the REACT-2 study, which also found that seroprevalence was higher among public-facing essential workers, including those in healthcare and care home roles.

Study participants were also asked whether they worked from home, outside of the home, or a combination of the two. Statistical testing shows that it is not possible to confirm whether there are true differences in the percentage of people who ever reported working outside the home, either fully or partially, testing positive for COVID-19 antibodies compared to those working from home.[2]

Figure 6: Percentage of people testing positive for COVID-19 antibodies by working characteristics

Estimated percentage of those ever testing positive for antibodies to the coronavirus (COVID-19) in the study, by working location and patient- or resident-facing health and social care roles, England, 26 April to 26 July 2020

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.

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Notes for Characteristics of individuals testing positive for COVID-19 antibodies:

1. Ethnic minories include Asian or Asian British; Black, African, Caribbean or Black British; Mixed or multiple ethnic groups; and Other ethnic groups.
2. Individuals reported as working outside the home include those who only worked outside the home and those who reported both working from home and outside the home. Specifically, it relates to those who reported this prior to the first time they tested positive for antibodies against COVID-19.

6 . Coronavirus (COVID-19) Infection Survey data

Coronavirus (COVID-19) infections in the community in England
Dataset | Released 18 August 2020
Characteristics of people testing positive for the coronavirus (COVID-19) in England taken from the COVID-19 Infection Survey.

7 . COVID-19 Infection Survey methodology

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

Methodology

The characteristic models presented in Section 3: Likelihood of testing positive for COVID-19 by characteristics are mixed-effect multivariable logistic regression models, which simultaneously estimate the effect of different factors that impact on the odds of testing positive for COVID-19 within the time frame (8 June to 2 August 2020). They are based on nose and throat swab test results taken from survey participants. The model takes one observation per participant in the period – their latest positive if they test positive and otherwise their latest negative result. The models include various fixed effects and a random effect for region. The odds ratios from the fixed effects explain relative likelihood of infection while controlling for the effects of the other characteristics. The odds are presented as compared with the odds for testing positive in a base category (that is, as an odds ratio). This base category was always the category for which we had the largest sample, for example, each other age category is compared to 50 to 69 year olds. The random effect allows for the variation at the regional level to be accounted for in these calculations.

We included characteristics within the models to describe two different groups of the population, one of the entire population and one of the working age population. We did not compare multiple models to compare model fit but instead included appropriate characteristics selected based on the interest of stakeholders (government and the public) and based on previously described variation from univariate and other analyses conducted. Because of the relatively low number of positives in the sample across the period, results should be interpreted cautiously. The results from the models presented in this article were very similar to those from penalised ridge logistic regression models over the same time period and also further Bayesian generalised additive multilevel models (GAMM) over the most recent six-week period.

For the findings in Section 4: Infection rates by symptoms of COVID-19 and Section 5: Characteristics of individuals testing positive for COVID-19 antibodies, pairwise statistical testing was conducted to determine the evidence for differences in infection rates between pairs of groups for each characteristic in the univariate analyses of symptoms and antibody characteristics. For instance, to identify any evidence of differences in infection rates between those aged 2 to 11 years and those aged 12 to 19 years. Fisher's exact test was used to determine whether the differences were compatible with chance given the numbers sampled. More information on the statistical testing we conducted is available in our methodology article.

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.

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

Odds ratio

An odds ratio is a measure of association between a characteristic and an outcome. The odds ratio represents the likelihood that an outcome will occur given a particular characteristic, compared with the likelihood of the outcome occurring in the absence of that characteristic. The odds ratio can be used to determine whether a particular characteristic is a risk factor for a particular outcome and to compare the magnitude of various risk factors for that outcome.

9 . Related links

Coronavirus (COVID-19) Infection Survey pilot
Statistical bulletin | Updated weekly
Initial data from the COVID-19 Infection Survey. This survey is being delivered in partnership with IQVIA, Oxford University and UK Biocentre.

COVID-19 Infection Survey (Pilot): methods and further information
Methods article | Updated 6 July 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
Blog | 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.