Office for National Statistics

Article

Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in the UK, 8 April 2021

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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Release date:
8 April 2021

Next release:
22 April 2021

Correction

19 April 2021 09:08

Following this release, we identified a number of quality issues:

- our grouping of 'classic' symptoms had excluded fever when it should have been included in that category
- results from a small number of participants who had experienced a positive test followed by a negative test within the 35 day period of the analysis had been previously excluded from the analysis due to a coding error
- estimates for March were based on data from 1 March to 20 March 2021 and should have used available data up to and including 22 March 2021

These corrections have resulted in a change to the estimated percentage of people reporting any symptoms from 47% to 49% and the estimated percentage of people reporting no symptoms has changed from 53% to 51%. The estimated percentage of people reporting 'classic' symptoms has also changed from 36% to 43% and there are additional changes to data for past time periods.

These changes have not affected the main trends presented in this release. We are reviewing our quality assurance procedures and apologise for any inconvenience caused.

Notice

12 April 2021

Following this release we have identified a minor quality issue that we are currently investigating. We do not expect this to affect our main findings, but there is a possibility of some figures changing slightly. We will update this publication with corrected data as soon as possible.

Table of contents

1 . Main points

- In March 2021, 49% (95% confidence intervals: 44% to 55%) of people testing positive for the coronavirus (COVID-19) in the UK with a strong positive test reported symptoms and 51% (95% confidence intervals: 45% to 56%) did not report having any symptoms.
- Cough, fatigue and headache were the most commonly reported symptoms from people who tested positive for COVID-19 with a strong positive test between 1 December 2020 and 22 March 2021.
- Nausea, diarrhoea and abdominal pain were less commonly reported symptoms.
- Of those testing positive for COVID-19 with a strong positive test, 20% (95% confidence intervals: 16% to 25%) of people reported a loss or taste of smell only.

2 . Overview

In this article, we refer to the number of coronavirus (COVID-19) infections within the community population; community in this instance refers to private residential households, and it excludes those in hospitals, care homes and/or other institutional settings in the UK.

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

More about coronavirus

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

More information on our headline estimates of the overall number of positive cases in England, Wales, Northern Ireland and Scotland are available in our latest bulletin. It should be noted that the analysis on the characteristics and behaviours of those testing positive in this article is for 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.

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 . Symptoms profile of strong positive cases in the UK

About this analysis

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

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

This analysis considers individuals with any positive test (including repeated positive tests) that had a Ct value less than 30, between 1 December 2020 and 22 March 2021. This analysis considers all symptoms reported at visits within 35 days of the first positive test of the episode, and at each visit we ask about symptoms in the last seven days. This includes symptoms reported even when there is a negative test within this timeframe or a positive test with a higher Ct value.

Individuals taking part in the survey were asked at each visit whether they had experienced a range of possible symptoms[1] in the seven days before they were tested and also separately whether they felt that they had symptoms compatible with COVID-19 infection in the last seven days. In Figure 1 we consider whether individuals report having symptoms on any of these questions.

In Figure 2 we have categorised reported symptoms into the following:

- any: any specific self-reported symptoms
- classic: cough, fever, shortness of breath, loss of taste or loss of smell
- gastrointestinal (GI): abdominal pain, nausea or vomiting, or diarrhoea
- loss of taste or smell only

In March 2021, 49% (95% confidence intervals: 44% to 55%) of people testing positive with a strong positive test in the UK reported symptoms. The confidence intervals are wider in March because of an incomplete month of data.

Figure 1: 49% of people testing positive in the UK reported symptoms in March 2021

Percentage of people who reported having symptoms when testing positive for the coronavirus (COVID-19), including only those who have strong positive tests (Ct less than 30), from 1 December 2020 to 22 March 2021, UK

Download the data

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. The percentage of those with self-reported symptoms in this figure is higher than those with "any" symptoms in the figure below. This is because "any" symptoms in the figure below only includes the 12 specific symptoms that are asked for on the survey, however, those with self-reported symptoms in this figure includes additional symptoms not specified.

4. The confidence intervals are wider in March because of an incomplete month of data.

People testing positive that had a Ct value less than 30 were most likely to report any symptoms and the classic COVID-19 symptoms. In March 2021, , 43% (95% confidence intervals: 37% to 48%) of people testing positive with a strong positive test reported the classic symptoms (cough, fever, shortness of breath, loss of taste or loss of smell).

Loss of taste or smell only and gastrointestinal symptoms were less commonly reported symptoms, with 20% (95% confidence intervals: 16% to 25%) of people testing positive reporting a loss of taste of smell only and 16% (95% confidence intervals: 12% to 20%) reporting gastrointestinal symptoms (abdominal pain, nausea or vomiting, or diarrhoea).

Figure 2: People testing positive were more likely to report any symptoms and the classic COVID-19 symptoms

Percentage of people with symptoms, including only those who have strong positive tests (Ct less than 30), from 1 December 2020 to 22 March 2021, UK

Download the data

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. In this figure we have categorised reported symptoms into the following: any: any specific self-reported symptoms; classic: cough, fever, shortness of breath, loss of taste or loss of smell; gastrointestinal (GI): abdominal pain, nausea or vomiting, or diarrhoea; loss of taste or smell only.

4. Symptoms are self-reported and were not professionally diagnosed.

5. The confidence intervals are wider in March because of an incomplete month of data.

There has been variation in reported symptoms between December 2020 and March 2021.

The most commonly reported symptoms were cough, fatigue and headache and the least commonly reported symptoms were abdominal pain, diarrhoea, and nausea or vomiting.

The prevalence of all symptoms except loss of smell appear to increase from December through to February. However, there is some uncertainty as confidence intervals are wide.

Figure 3: The most commonly reported symptoms among people testing positive were cough, fatigue and headache

Percentage of people with symptoms, including only those who have strong positive tests (Ct less than 30), from 1 December 2020 to 22 March 2021, UK

Download the data

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. Symptoms are self-reported and were not professionally diagnosed.
4. The confidence intervals are wider in March because of an incomplete month of data.

Notes for: Symptoms profile of strong positive cases

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.

4 . Coronavirus (COVID-19) Infection Survey data

Coronavirus (COVID-19) infections in the community in the UK
Dataset | Released 8 April 2021
Characteristics of people testing positive for the 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, 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

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.

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

7 . 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.

8 . 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 | Updated fortnightly
The analyses in this article looks at the 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.

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 26 March 2021
Information on the methods used to collect the data, process it, and calculate the statistics produced from the COVID-19 Infection Survey pilot.

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.