

Article

Symptoms consistent with influenza-like illness in those who tested negative for COVID-19 in England: Coronavirus (COVID-19) Infection Survey, UK: 8 March 2023

The percentage of those testing negative for coronavirus (COVID-19) in England reporting symptoms consistent with influenza-like illnesses (ILI) by age group and the characteristics of people reporting ILI.

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1 . Main points

Symptoms reported in the Coronavirus (COVID-19) Infection Survey among people who test negative for COVID-19 may provide valuable information about other respiratory infections that are circulating among the population, including influenza. Influenza-like illness (ILI) is a term used to describe a diagnosis of possible influenza or other illness causing a set of common symptoms. This article looks at the percentage reporting symptoms consistent with influenza-like illness by age, and the characteristics associated with reporting these symptoms.

- The percentage of people who tested negative for coronavirus (COVID-19) and reported symptoms consistent with influenza-like illness (ILI) peaked for all ages in December 2022, at 5.6% (95% Confidence Interval: 5.3% to 5.9%), or around 1 in 20 people.
- Since January 2023, the percentage of people who tested negative for COVID-19 and reported symptoms consistent with ILI remained relatively low, with 1.7% (95% Confidence Interval: 1.5% to 1.9%) reporting these symptoms in the latest week (week ending 14 February 2023), or around 1 in 60 people.
- In the week ending 14 February 2023, 1 in 10 people reported a sore throat (10.0%; 95% Confidence Interval: 9.5% to 10.5%); 1 in 5 children aged between two years and school Year 6 reported having a cough (20.3%; 95% Confidence Interval: 17.2% to 23.4%); 1 in 20 children aged between two years and school Year 6 reported a fever (5.4%; 95% Confidence Interval: 3.9% to 6.8%).
- Between 14 December 2022 and 10 January 2023, those more likely to report symptoms consistent with ILI were females when compared with males; people who were disabled or lived in a household with someone who was disabled compared with those who lived in households where no one was disabled; people who had contact with those under 18 years of age from outside their household compared with those who did not.
- Over the same four-week period, people who had a flu vaccination in the 2022 to 2023 season, or in both the 2021 to 2022 and the 2022 to 2023 season, were less likely to report symptoms consistent with ILI than those who had not had a flu vaccination in either season.

2 . Overview

Oxford University produce a [Weekly analysis of symptoms reported in those testing negative for SARS-CoV-2 by PCR](#). In partnership with the Office for National Statistics (ONS), they are conducting analyses to find out whether the Coronavirus (COVID-19) Infection Survey could be used to monitor self-reported symptoms consistent with influenza-like illness (ILI) among those who test negative for COVID-19 in England.

Symptoms consistent with ILI were defined following the [United States Centers for Disease Control and Prevention](#) (CDC). A fever, sore throat and cough were also considered individually. The CDC defines ILI as a fever (temperature of 100 degrees Fahrenheit or greater), accompanied by a cough or sore throat (or both).

The [European Centre for Disease Control](#) (ECDC) has a different definition of ILI and estimates of those testing negative and reporting ILI using this definition are available on our website. As the CDC defines ILI using fewer symptoms, it is likely to show lower levels of ILI than the ECDC definition.

To monitor trends in ILI, this analysis presents age-group-specific daily rates of ILI, (as classified by the CDC), along with daily rates of a fever, sore throat and cough. This is to monitor trends in ILI and examine the differences between age groups during the current flu season.

Additionally, for the first time, we have analysed whether specific characteristics affected the likelihood of reporting symptoms consistent with ILI. Characteristics considered included sex, ethnicity, age, deprivation, household size, region, flu vaccination status, work sector, and other wider factors.

All estimates are unweighted and only data from participants with a confirmed negative polymerase chain reaction (PCR) test for coronavirus (COVID-19) were included for analysis. This was to minimise the influence of COVID-19 illness on reported symptoms. Participants were those living in private households in England, who tested negative for COVID-19 on a PCR test, and self-reported symptoms.

As we cannot exclude the possibility that some participants who have COVID-19 still test negative, there may be a small number of COVID-19 positive cases included in these analyses.

3 . Influenza-like illness in those testing negative for COVID-19 by age group

The percentage of people testing negative for coronavirus (COVID-19) in England and who reported symptoms consistent with influenza-like illness (ILI) as classified by the the Centers for Disease Control and Prevention (CDC) definition (a fever and a cough or sore throat), peaked for all ages in December 2022 at 5.6% (95% Confidence Interval: 5.3% to 5.9%) and decreased to 1.4% (95% Confidence Interval: 1.3% to 1.5%) in January 2023. Since January 2023, the percentage of people testing negative for COVID-19 and reporting ILI remained relatively low, with 1.7% (95% Confidence Interval: 1.5% to 1.9%) recently reporting these symptoms (as of 14 February 2023).

As of 14 February 2023, the percentage of those testing negative for COVID-19 reporting ILI was:

- highest for those aged two years to school Year 6 at 3.9% (95% Confidence Interval: 2.6% to 5.1%), around 1 in 26 children
- lowest for those aged 65 years and over at 1.0% (95% Confidence Interval: 0.8% to 1.2%), around 1 in 100 people

Figure 1: The percentage of participants who tested negative for COVID-19 and reported symptoms consistent with influenza-like illness peaked in December 2022

The percentage of participants who tested negative for coronavirus (COVID-19) and reported symptoms consistent with influenza-like illness by age group, England, 1 August 2022 to 14 February 2023

Notes:

1. Influenza-like illness was defined using the Centers for Disease Control and Prevention (CDC) classification (a fever, and a cough or sore throat).
2. Those estimates with a wider confidence interval have a higher degree of uncertainty.
3. Data are unweighted and present the percentage of the population living in private households in England.
4. All estimates are provisional and subject to revision.

Download the data

[.xlsx](#)

About our estimates

To estimate the trends in symptoms reported by COVID-19 negative participants over time, generalised additive models (GAM) were fitted on data from study participants in England between 1 August 2022 and the most recently available data (week ending 14 February 2023). Models were estimated separately by age group and for the overall population. Reported symptoms refer to symptoms that participants reported they experienced in the past seven days.

The GAMs used a negative-binomial distribution with log link, estimating the association between daily rates and calendar time with thin plate splines ($k=50$), penalised based on the third derivative. No other explanatory variables than time (measured in the number of days since 1 August 2022) were included in the models.

All estimates contained in this article are therefore unweighted. They present the percentage of the population living in private households in England who tested negative for coronavirus (COVID-19) on a polymerase chain reaction (PCR) test, and self-reported symptoms. As the data are unweighted and the sample for this analysis includes only those who have tested negative for COVID-19 on a [swab test](#), there was no known population of which weighted estimates could be representative.

We describe trends by comparing the predicted prevalence of the most recent data over time. Our [age group](#) analysis separates children and young people by school age.

More detailed information on this analysis, carried out by our research partners at the University of Oxford, is available on their website, hosted at the [Nuffield Department of Medicine](#).

4 . Sore throat symptoms in those testing negative for COVID-19 by age group

The percentage of people testing negative for coronavirus (COVID-19) in England and who reported a sore throat, peaked for all ages in December 2022 at 17.2% (95% Confidence Interval: 16.7% to 17.6%), or around 1 in 6 people. Since January 2023, the percentage of people testing negative for COVID-19 and reporting a sore throat has remained relatively stable with 10.0% (95% Confidence Interval: 9.5% to 10.5%), or 1 in 10 people, reporting sore throat symptoms on 14 February 2023.

In the most recent week (up to 14 February 2023), the percentage of those testing negative for coronavirus (COVID-19) and reporting a sore throat was highest for children and younger adults:

- approximately 1 in 8 of those aged two years to school Year 6 reported a sore throat (13.3%; 95% Confidence Interval: 10.8% to 15.8%)
- for those in school Year 7 to 11, around 1 in 7 reported a sore throat (13.9%; 95% Confidence Interval: 11.6% to 16.3%)
- around 1 in 7 of those in school Year 12 to aged 34 years reported a sore throat (13.4%; 95% Confidence Interval: 11.8% to 14.9%)

In the same week, those aged 65 years and over were least likely to report a sore throat with around 1 in 16 (6.3%) (95% Confidence Interval: 5.7% to 6.8%) reporting this symptom.

Figure 2: Around 1 in 10 people who tested negative for COVID-19, reported a sore throat in the most recent week

The percentage of participants who tested negative for coronavirus (COVID-19) and reported a sore throat by age group, England, 1 August 2022 to 14 February 2023

Notes:

1. We describe trends by comparing the predicted prevalence in the most recent data over time.
2. Those estimates with a wider confidence interval have a higher degree of uncertainty.
3. Data are unweighted and present the percentage of the population living in private households in in England.
4. All estimates are provisional and subject to revision.

Download the data

[.xlsx](#)

5 . Fever symptoms in those testing negative for COVID-19 by age group

Of those testing negative for coronavirus (COVID-19) in the week ending 14 February 2023:

- around 1 in 50 reported a fever (2.1%; 95% Confidence Interval: 1.9% to 2.3%)
- the percentage of participants reporting a fever was highest for those aged two years to school Year 6 (5.4%; 95% Confidence Interval: 3.9% to 6.8%) and lowest for those aged 65 years and over (1.2%; 95% Confidence Interval: 1.0% to 1.5%)

Figure 3: The percentage of participants testing negative for coronavirus (COVID-19) and who reported a fever was highest for those aged 2 years to school Year 6

The percentage of participants who tested negative for coronavirus (COVID-19) and reported a fever by age group, England, 1 August 2022 to 14 February 2023

Notes: