

Statistical bulletin

# COVID-19 Schools Infection Survey, England: mental health and long COVID, November to December 2021

Analysis of COVID-19 findings on mental health and long COVID from the Schools Infection Survey's headteacher, parent and pupil questionnaires. The Schools Infection Survey is jointly led by the London School of Hygiene and Tropical Medicine, UK Health Security Agency and the Office for National Statistics.

Contact:  
Andrea Lacey  
schools.infection.survey@ons.  
gov.uk  
+44 1633 651663

Release date:  
28 February 2022

Next release:  
To be announced

## Table of contents

1. [Main points](#)
2. [Long COVID](#)
3. [Mental health](#)
4. [Mental health provision in schools](#)
5. [COVID-19 Schools Infection Survey data](#)
6. [Collaboration](#)
7. [Glossary](#)
8. [Measuring the data](#)
9. [Strengths and limitations](#)
10. [Related links](#)

# 1 . Main points

- Since March 2020, 1.0% of primary school-aged pupils and 2.7% of secondary school-aged pupils met the Delphi criteria for having experienced long COVID lasting at least 12 weeks.
- "Loss of taste or smell" was the only symptom group where the prevalence was significantly higher for those who had received a positive coronavirus (COVID-19) test since March 2020 than those who hadn't, for both primary and secondary school-aged pupils aged under 16 years.
- Both primary and secondary school pupils who tested positive for COVID-19 showed no significant difference in the number presenting with a "probable mental disorder" compared with those without a positive test.
- Primary school pupils with long COVID (under the Delphi criteria) were significantly more likely to have a probable mental disorder (30.0%) than those without long COVID (7.7%); the trend was similar for secondary school pupils (22.6% compared with 13.6%), but this is not statistically significant.

Where differences between groups exist, confidence intervals provided in reference tables should be used to assess statistical significance. The word "significantly" is used to highlight differences that have been found to be statistically significant.

## 2 . Long COVID

To estimate the prevalence of long COVID, we used the [CLoCK Delphi consensus criteria \(PDF, 588KB\)](#) for non-hospitalised children and young people with long COVID (the CLoCK study) for our calculations. This defines long COVID as being present if all the following conditions are met.

- A positive test for coronavirus (COVID-19) infection.
- The presence of symptoms continuously over a 12-week period or longer.
- Everyday life is affected by these symptoms.

Parents responded on behalf of pupils in school Years Reception to Year 6 and pupils in school Years 7 to 13 responded on behalf of themselves. In addition, for pupils in school Years 7 to 11, parents responded about specific symptoms on their behalf because of the difficulty in children under 16 years recalling specific symptoms since the start of the pandemic.

The prevalence estimates reported here are not directly comparable with those from the Office for National Statistics (ONS) COVID-19 Infection Survey because of differences in time periods measured, long COVID definition and sample design (see [Measuring the data](#)).

## Long COVID among primary school-aged pupils

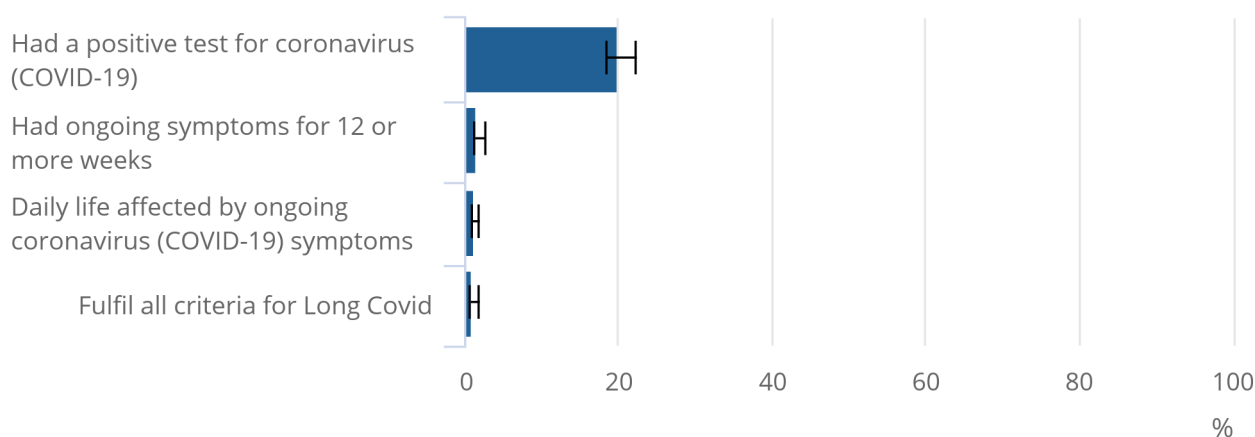
Around 1 in 100 (1.0%) pupils in primary schools fulfilled all the criteria for long COVID at some point since March 2020 (Figure 1).

**Figure 1: Since March 2020, 1% of primary school pupils fulfilled all the criteria for long COVID at some point**

Long COVID in primary school pupils, England, December 2021

Figure 1: Since March 2020, 1% of primary school pupils fulfilled all the criteria for long COVID at some point

Long COVID in primary school pupils, England, December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

### Notes:

1. Question: Has your child had a positive coronavirus (COVID-19) test of any kind since March 2020? Has your child had at least one symptom of coronavirus (COVID-19) that continued for 12 weeks or more after the start of their coronavirus (COVID-19) infection? How much have the ongoing coronavirus (COVID-19) symptoms affected the following for your child?
2. Base: All pupils of primary school age. All question responses are based on the total sample.

We asked parents about any of 28 symptoms their children had displayed for a period of 12 weeks or more since March 2020. This was asked of everyone, not just those reporting to have had COVID-19. We have compared two groups - those that had a positive COVID-19 test at any time since March 2020, and those without a positive test (this can include people who believe they have had COVID-19 but never got tested, and those who do not believe they have had COVID-19).

## More about coronavirus

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

Nearly half (47.5%) of primary school pupils with a positive COVID-19 test since March 2020 were reported by their parents to have experienced at least one recurring symptom (Figure 2). This was 46.6% for those without a positive test.

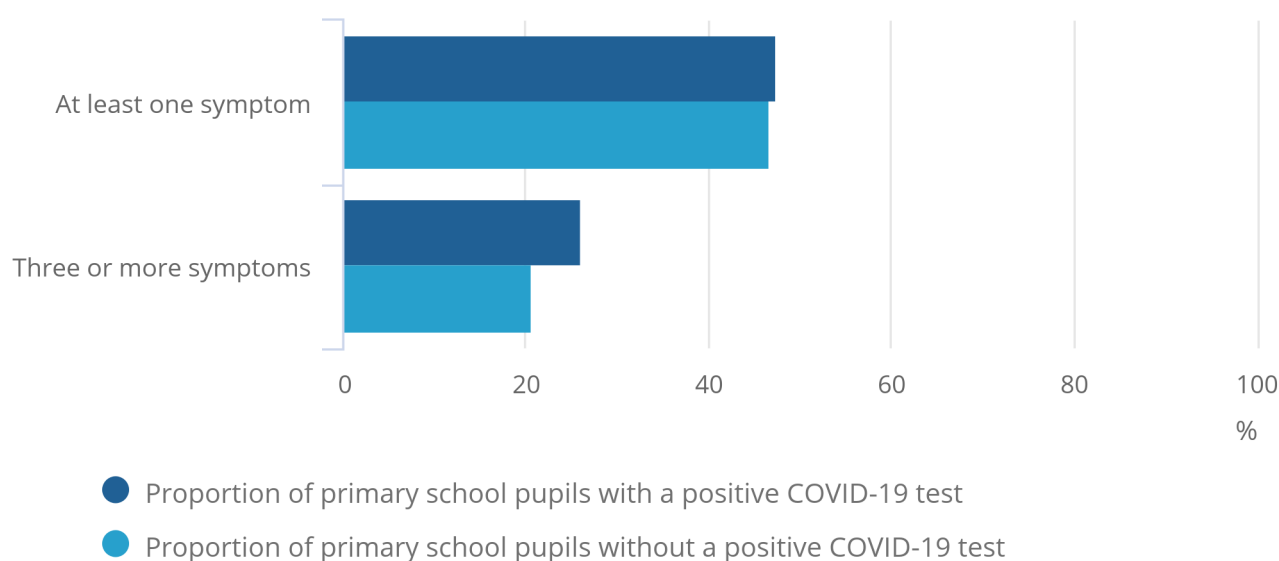
Over a quarter (26.0%) of primary school pupils with a positive test and 20.7% of those without a positive test experienced three or more symptoms.

### Figure 2: Primary school pupils experienced recurring symptoms for 12 weeks or more regardless of COVID-19 test status

Number of recurring symptoms experienced by primary school-aged pupils for 12 weeks or more, England, November to December 2021

#### Figure 2: Primary school pupils experienced recurring symptoms for 12 weeks or more regardless of COVID-19 test status

Number of recurring symptoms experienced by primary school-aged pupils for 12 weeks or more, England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

#### Notes:

1. Question: Which of the following symptoms has your child experienced in a persistent or recurring way for more than 12 weeks since March 2020?
2. Base: All pupils in primary school with and without a positive COVID-19 test.
3. Those without a positive test can include people who believe they have had COVID-19 but never got tested, and those who don't believe they have had COVID-19.

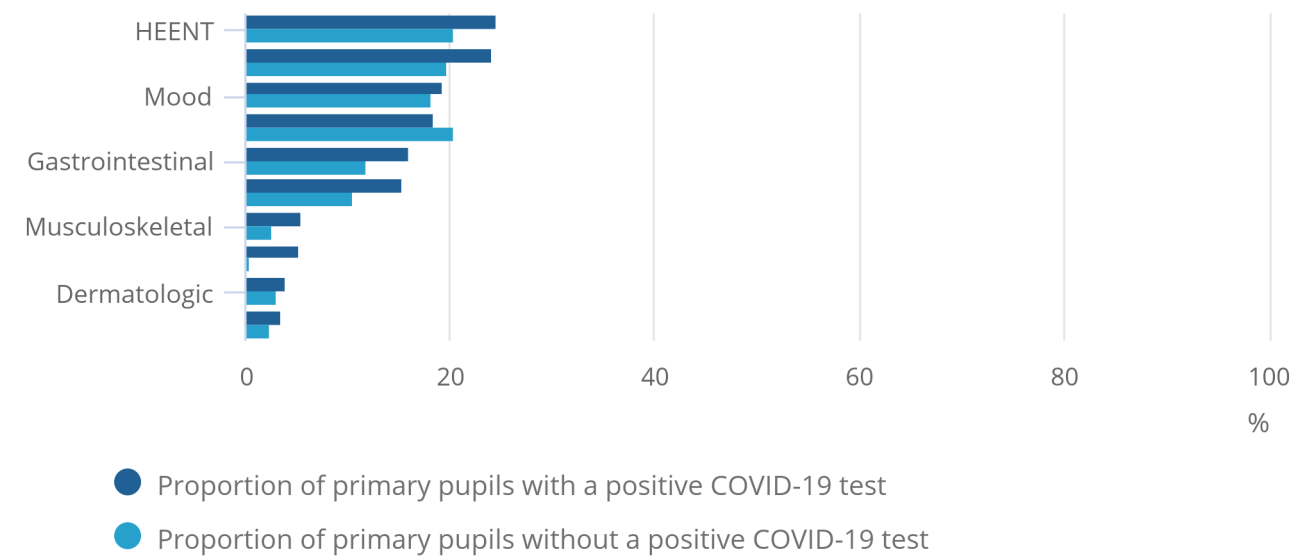
“Loss of taste or smell” was the only symptom group where the prevalence was significantly higher for those who had received a positive COVID-19 test (5.2%) than those who hadn’t (0.4%). Other symptom groups showed no significant difference by positive test status.

**Figure 3: Primary school pupils who’d had a positive COVID-19 test reported similar levels of symptoms to those without a test, except for “Loss of taste or smell”**

12-week symptom prevalence for primary school pupils with and without a positive COVID-19 test

Figure 3: Primary school pupils who’d had a positive COVID-19 test reported similar levels of symptoms to those without a test, except for “Loss of taste or smell”

12-week symptom prevalence for primary school pupils with and without a positive COVID-19 test



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

Notes:

- 1. Question: Which of the following symptoms has your child experienced in a persistent or recurring way for more than 12 weeks since March 2020?
- 2. Base: All pupils in primary school with and without a positive COVID-19 test.
- 3. Those without a positive test can include people who believe they have had COVID-19 but never got tested, and those who don't believe they have had COVID-19.

For primary school pupils, 25.3% of parents reported that they believed their child had had COVID-19 since March 2020 (including those that had a positive COVID-19 test and those that hadn't). Of those, 6.3% experienced ongoing symptoms for 12 or more weeks.

Among those pupils who had experienced ongoing symptoms, nearly half (49.2%) of primary school-aged pupils were reported as having their emotional well-being "affected a little" or "a lot" by their symptoms. Over a third (37.1%) were reported as having their ability to stay physically active affected and just over a third (34.0%) as having their ability to learn affected. Among the same pupils, almost half (49.1%) said they were now "fully recovered" and a further 27.6% were "greatly" or "somewhat improved". Nearly a fifth (17.7%) said their symptoms "vary day by day".

## **Long COVID among secondary school-aged pupils**

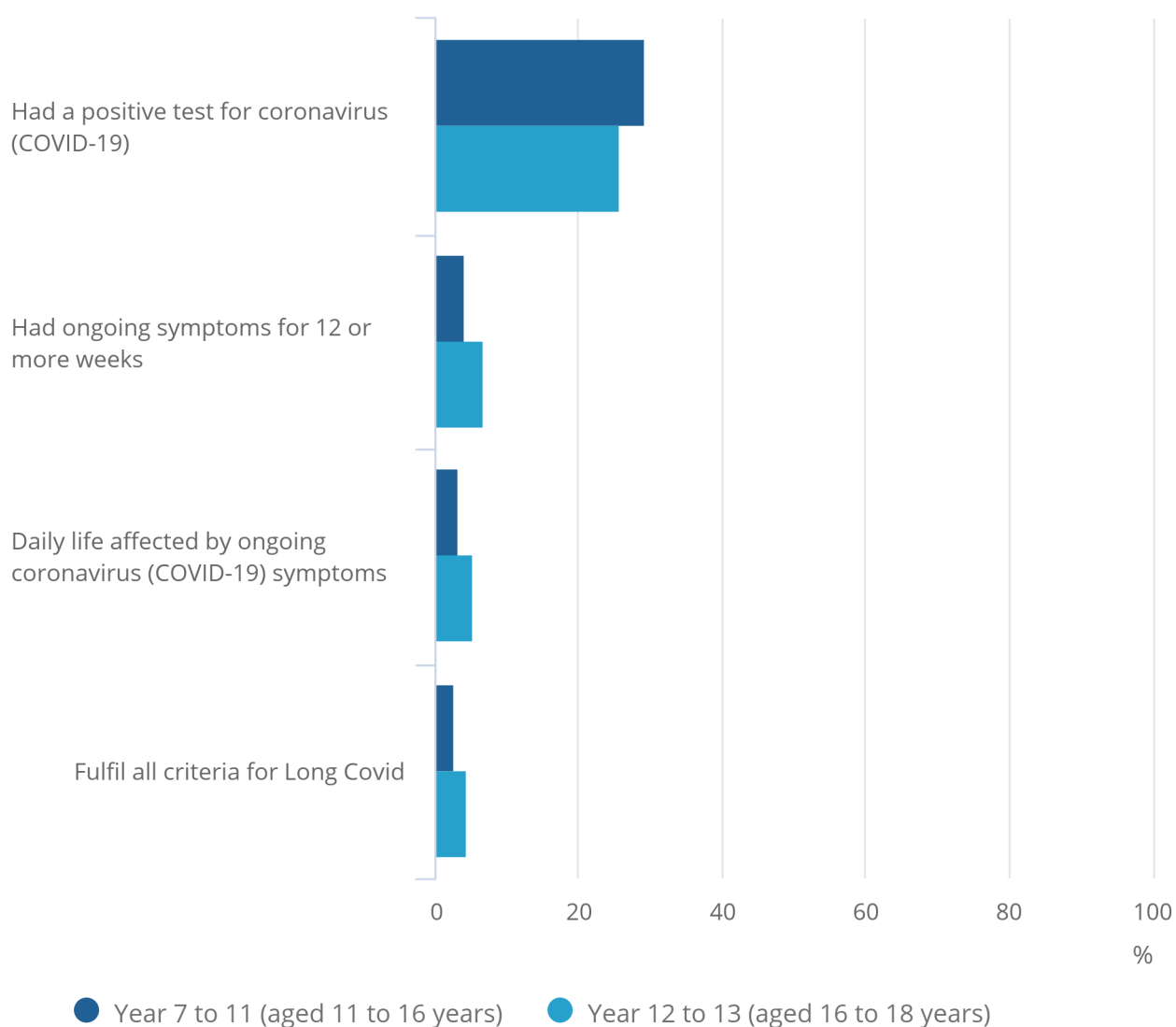
2.7% of pupils in secondary schools fulfilled all the criteria for long COVID (as defined by CLoCK Delphi consensus) at some point since March 2020. This was 2.5% for pupils in school Years 7 to 11 (aged 11 to 16 years) and 4.4% for pupils in school Years 12 to 13 (aged 16 to 18 years).

**Figure 4: 2.7% of secondary school pupils fulfilled all the criteria for long COVID at some point since March 2020**

Presence of long COVID in secondary school pupils, England, November to December 2021

**Figure 4: 2.7% of secondary school pupils fulfilled all the criteria for long COVID at some point since March 2020**

Presence of long COVID in secondary school pupils, England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

**Notes:**

1. Questions: Have you had a positive COVID-19 test of any kind since March 2020? Have you had at least one symptom of COVID-19 that continued for 12 weeks or more after the start of your COVID-19 infection? How much have the ongoing COVID-19 symptoms affected the following for you?
2. Base: All pupils in secondary school.

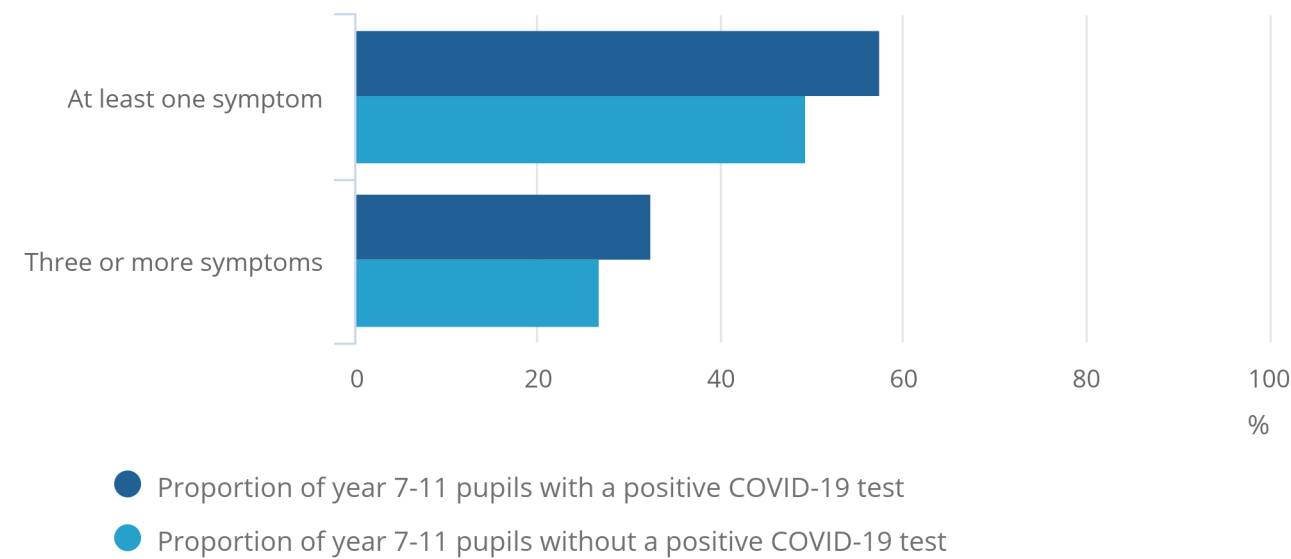
57.6% of Year 7 to 11 pupils with a positive COVID-19 test were reported as having experienced at least one recurring symptom for 12 weeks or more since March 2020 (Figure 5). Half (49.5%) of those without a positive test experienced at least one recurring symptom. A third (32.5%) of Year 7 to 11 pupils with a positive test and 26.9% of those without a positive test experienced three or more recurring symptoms.

**Figure 5: Secondary school pupils experienced recurring symptoms for 12 weeks or more regardless of COVID-19 test status**

Number of recurring symptoms experienced by Year 7 to 11 pupils for 12 weeks or more, England, November to December 2021

Figure 5: Secondary school pupils experienced recurring symptoms for 12 weeks or more regardless of COVID-19 test status

Number of recurring symptoms experienced by Year 7 to 11 pupils for 12 weeks or more, England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

Notes:

1. Question: Which of the following symptoms has your child experienced in a persistent or recurring way for more than 12 weeks since March 2020?
2. Base: All pupils in school Years 7 to 11 with and without a positive COVID-19 test.
3. Those without a positive test can include people who believe they have had COVID-19 but never got tested, and those who don't believe they have had COVID-19.

“Loss of taste or smell” was the only symptom group where the prevalence was significantly higher for those who had received a positive COVID-19 test (16.6%) than those who hadn’t (0.4%). Other symptom groups showed no significant difference by positive test status.

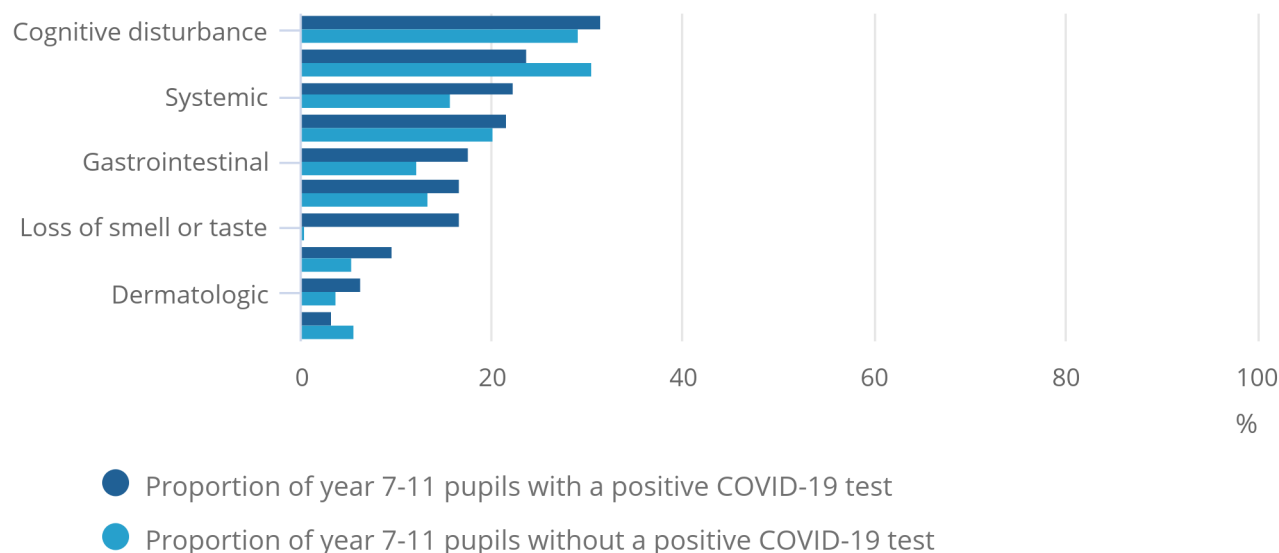


**Figure 6: Secondary school pupils who'd had a positive COVID-19 test reported similar levels of symptoms to those without a test, except for "Loss of taste or smell"**

12-week symptom prevalence for Year 7 to 11 pupils with and without a positive test for COVID-19, England, November to December 2021

Figure 6: Secondary school pupils who'd had a positive COVID-19 test reported similar levels of symptoms to those without a test, except for "Loss of taste or smell"

12-week symptom prevalence for Year 7 to 11 pupils with and without a positive test for COVID-19, England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

**Notes:**

1. Question: Which of the following symptoms has your child experienced in a persistent or recurring way for more than 12 weeks since March 2020?
2. Base: All pupils in school Years 7 to 11 with and without a positive COVID-19 test.
3. Those without a positive test can include people who believe they have had COVID-19 but never got tested, and those who don't believe they have had COVID-19.

Of all Year 7 to 11 pupils, 35.5% reported that they believed they had previously had COVID-19 since March 2020 (including those that had a positive COVID-19 test and those that hadn't). Of those who believed they had COVID-19, 11.3% of pupils reported that they had experienced ongoing symptoms. Of these pupils, 51.7% reported their ability to stay physically active was affected a little or a lot by their symptoms and 47.5% said their emotional well-being was affected a little or a lot. Of those experiencing ongoing symptoms, 17.8% said they were "fully recovered" from their symptoms, a further 55.6% said they were "greatly improved" or "somewhat improved" and 20.3% said they "vary day by day".

### 3 . Mental health

This analysis relates to the mental health of the pupil population. The measurement approach taken by the COVID-19 Schools Infection Survey (SIS) is to use parent-reported measures for primary school-aged pupils and self-reported measures for secondary school-aged pupils. The Strengths and Difficulties Questionnaire is used to define "probable", "possible" and "unlikely" mental disorders using a scoring algorithm. More detail can be found in the [Glossary](#).

Caution should be used when comparing with other published studies such as the Mental Health of Children and Young People study (MHCYP). There are differences in sample design and measurement which means the data are not directly comparable.

#### Primary school-aged pupils' mental health

We found that 8.0% of primary school-aged pupils had a probable mental disorder and a further 7.6% of pupils had a possible mental disorder. Significantly more primary school-aged pupils had a probable hyperactivity disorder (5.9%) than a probable emotional disorder (1.7%) or a probable conduct disorder (1.9%).

Around 1 in 10 male primary school-aged pupils had a probable mental disorder, which was significantly higher than female primary school-aged pupils (5.8%). Primary school-aged pupils with a long-term health condition were significantly more likely to have a probable mental disorder (21.5%) than those without (6.4%). Further breakdowns are available in our [accompanying dataset](#).

#### Secondary school and sixth form aged pupils' mental health

We found 13.8% of pupils of secondary school age (11 to 18 years) had a probable mental disorder, this was significantly higher for girls (18.9%) than boys (8.8%). A further 12.0% of pupils had a possible mental disorder. Probable hyperactivity disorders had the highest prevalence (9.4%), significantly higher than probable emotional disorder prevalence (4.1%) and probable conduct disorder prevalence (1.9%). Significantly more secondary school pupils eligible for free school meals had a probable mental health disorder compared with those who were not eligible (28.3% compared with 12.4%).

## Long COVID and mental health

This analysis does not account for mental health status before having COVID-19, thus causality cannot be inferred.

For primary school pupils, 11.1% of those who received a positive COVID-19 test had a probable mental disorder and 7.2% of those who hadn't received a positive test had a probable mental disorder. For secondary school pupils (school Years 7 to 13), 13.9% of those who received a positive COVID-19 test had a probable mental disorder and 13.6% of those who hadn't received a positive test had a probable mental disorder; these differences were not significant.

Primary school pupils with long COVID were significantly more likely to have at least one probable mental disorder (30.0%) than those without long COVID (7.7%).

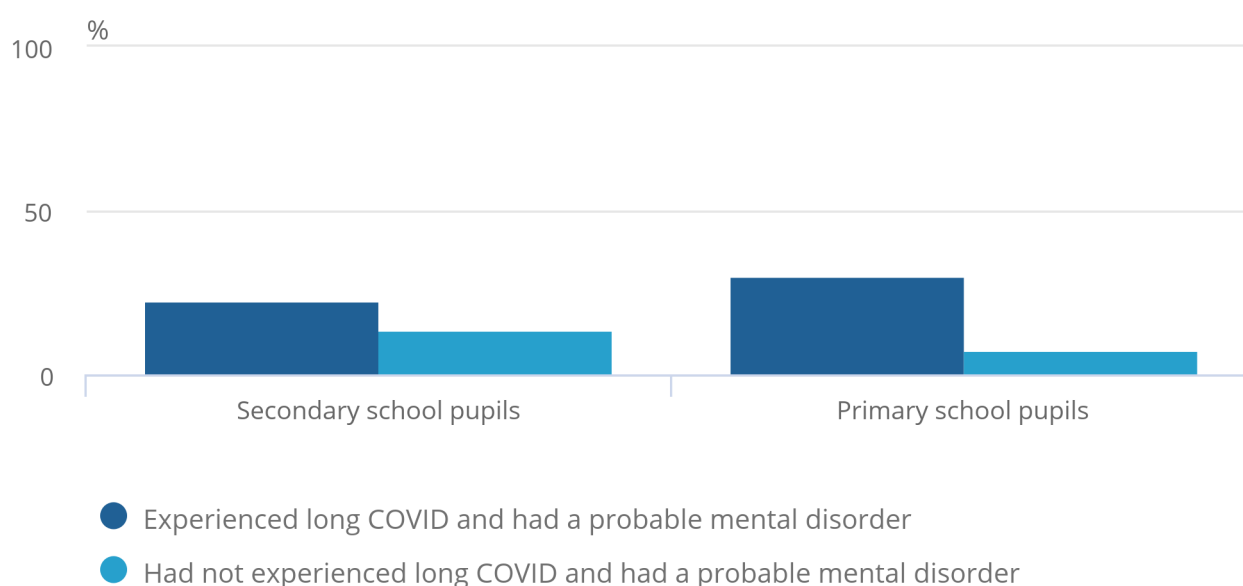
For secondary school pupils, 22.6% of those who had experienced long COVID had a probable mental health disorder, compared with 13.6% of pupils who had not. These differences were not significant.

### Figure 7: Pupils who have experienced long COVID are more likely to have a probable mental disorder

England, November to December 2021

#### Figure 7: Pupils who have experienced long COVID are more likely to have a probable mental disorder

England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

#### Notes:

1. Questions for primary school pupils: Has your child had a positive COVID-19 test of any kind since March 2020? How much have the ongoing COVID-19 symptoms affected the following for your child?
2. Questions for secondary school pupils are identical but asked of them rather than of an informant answering on their behalf.
3. Base: All primary and secondary school pupils in school years Reception to Year 6 or Year 7 to Year 13.

## 4 . Mental health provision in schools

This section contains analysis of the headteacher survey. More information on the collection of data can be found in the [Measuring the data section](#).

The data in this section are unweighted.

Over half (64%) of headteachers said some or all of their staff had received additional training on pupil mental health since September. This was 58% for primary schools and 77% for secondary schools.

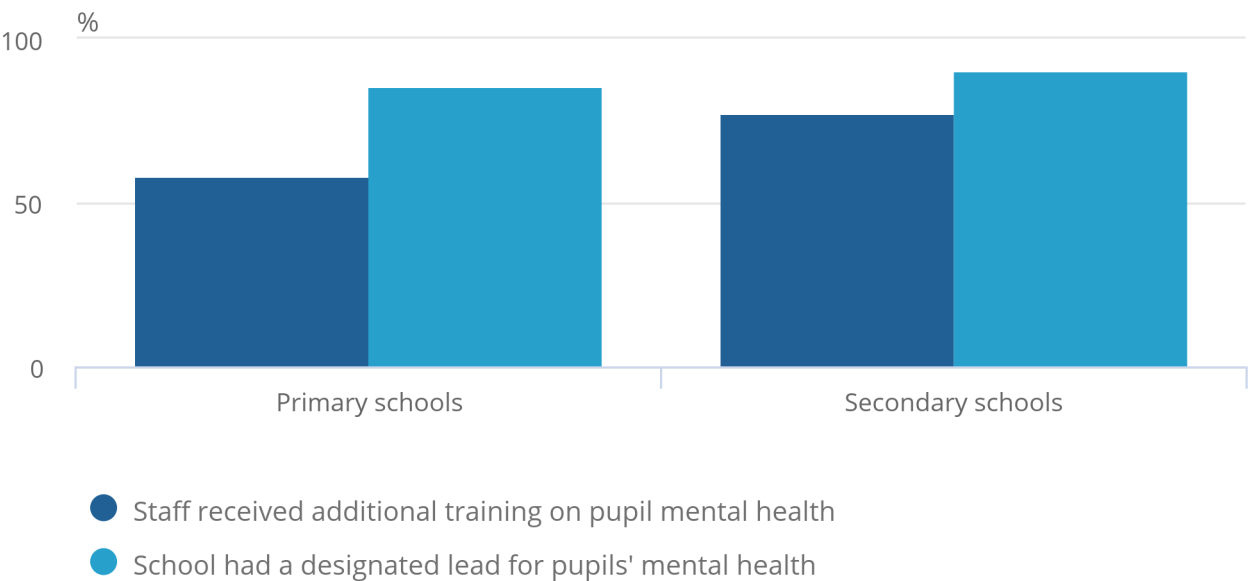
Over four-fifths (87%) of headteachers said that their school had a designated lead for pupils' mental health. Of those with a designated lead, 95% said they felt very or fairly confident that their school was able to implement the activities needed to develop a whole-school approach to mental health. Of the remaining 5%, reasons for not feeling confident were because of lack of time and staff resource pressures.

**Figure 8: Most primary and secondary schools had additional mental health training for staff and a designated mental health lead**

England, November to December 2021

Figure 8: Most primary and secondary schools had additional mental health training for staff and a designated mental health lead

England, November to December 2021



Source: Office for National Statistics – Coronavirus (COVID-19) Schools Infection Survey

Notes:

1. Questions: Since September 2021, have staff in your school received any new or additional training on pupil mental health? Does your school have a designated lead for pupils' mental health?
2. Base: All headteachers of primary schools and secondary schools.

## 5 . COVID-19 Schools Infection Survey data

[COVID-19 Schools Infection Survey, questionnaire data, England](#)

Dataset | Released 28 February 2022

Indicators from the Schools Infection Survey to understand the impact of the coronavirus (COVID-19) pandemic on young people and schools. Including antibody data, questionnaire analysis, and breakdowns by age, sex and region where possible.

## 6 . Collaboration

LONDON  
SCHOOL *of*  
HYGIENE  
& TROPICAL  
MEDICINE



UK Health  
Security  
Agency

The Coronavirus (COVID-19) Schools Infection Survey analysis was produced by the Office for National Statistics (ONS) in collaboration with our research partners at the London School of Hygiene and Tropical Medicine and UK Health Security Agency.

## 7 . Glossary

### Primary school pupils

Primary school pupils are those in school Years Reception to Year 6. These school year groups cover pupils aged 4 to 11 years.

### Secondary school pupils

Secondary school pupils are those in school Years 7 to 13. These school year groups cover pupils aged 11 to 18 years.

### Long COVID

The term "Long COVID" is generally used to describe the persistence of symptoms, long after you would usually expect them to have resolved, after coronavirus (COVID-19) infection, which can't be explained by another cause.

### Delphi consensus on long COVID

The Delphi consensus approach is a well-established, systematic and iterative method that relies on a panel of experts to move towards agreement. Researchers working on the non-hospitalised children and young people with long COVID (CLOCK) study, funded by UK Research and Innovation and the National Institute for Health Research (NIHR), participated in the Delphi approach and agreed that Long COVID could be defined by the presence of all the following:

- a positive test for COVID-19 infection
- the presence of symptoms continuously over a 12-week period or longer
- everyday life is affected by these symptoms

This is a working definition for research purposes, rather than a clinical definition for diagnosing long COVID, such as those published by the National Institute for Health and Care Excellence (NICE) and the World Health Organisation (WHO).

Definitions of long COVID can vary between studies and articles. The Office for National Statistics prevalence of ongoing symptoms analysis uses different criteria, namely people who had a confirmed or suspected COVID-19 infection and responded positively to the survey question “Would you describe yourself as having ‘long COVID’, that is, you are still experiencing symptoms more than 4 weeks after you first had COVID-19, that are not explained by something else?”.

## **Symptom groupings**

The list of COVID-19 symptoms has been grouped following an approach taken by the Patient-Led Research Collaborative.

### **Head, ears, eyes, nose and throat symptoms**

- Lost or husky voice.
- Sore throat.
- Sore or uncomfortable eyes.
- Earache or ringing in ears.

### **Cardiovascular symptoms**

- Chest pain or tightness.
- Palpitations (feeling like your heart is beating heavily or racing).

### **Dermatologic**

- Raised, red, itchy bumps on skin or swelling of the face or lips.
- Red or purple blisters on your feet or toes.
- Prickling, tingling or burning sensations in skin.

### **Gastrointestinal**

- Diarrhoea.
- Not feeling hungry nor wanting to eat.
- Feeling or being sick.
- Stomach pain.

## **Mood**

- Worry or anxiety.
- Low mood or not enjoying anything.

## **Musculoskeletal**

- Strong aches or pains in muscles or joints.

## **Cognitive disturbance**

- Feeling lightheaded or disorientated.
- Feeling dizzy.
- Trouble sleeping.
- Headache.
- Memory loss or confusion.
- Difficulty concentrating.

## **Pulmonary**

- Cough.
- Feeling short of breath.

## **Systemic**

- Fever or high temperature.
- Chills or shivers.
- Weakness or tiredness.

## **Loss of smell or taste**

- Loss of smell or taste.

## **Strengths and Difficulties Questionnaire (SDQ)**

SDQ is a brief behavioural screening questionnaire about 3 to 16-year-olds. It exists in several versions to meet the needs of researchers, clinicians and educationalists. The questionnaire asks about 25 attributes, some positive and others negative. These 25 items are divided between 5 scales:

- emotional symptoms (5 items)
- conduct problems (5 items)
- hyperactivity or inattention (5 items)
- peer relationship problems (5 items)
- prosocial behaviour (5 items)

The SDQ also includes an impact supplement which asks whether the respondent considers the child or young person to have difficulties, how long they have been present, and the extent to which they cause distress and impairment in functioning in everyday life.

Responses provided in the SDQ were combined using a diagnostic algorithm to indicate whether each child was unlikely, possibly or probably demonstrating a mental health condition in the following domains: emotional, behaviour and hyperactivity disorders. This algorithm combines data from all available informants and a disorder is considered probably present if the scores on the relevant symptom indicate the child is above the 95th percentile and the impact score is two or above according to either informant for emotional difficulties and conduct problems, or two informants if available for hyperactivity. A disorder is considered unlikely if the scores for conduct and emotion were three or below from all informants, and hyperactivity was five or below, plus impact scores were zero. A disorder was considered possible with intermediate scores. More detail on how the algorithm works can be found on the SDQ website.

For the Schools Infection Survey (SIS), we have adapted this methodology in light of only obtaining information from the pupil questionnaire for those aged 11 to 16 years, and only parent questionnaire information for those aged 4 to 11 years. The limitation of our approach is that it is not exactly comparable with other published mental health results, but it provides a measure against a validated methodology.

## 8 . Measuring the data

Data presented in this bulletin are from Round 1 of the coronavirus (COVID-19) Schools Infection Survey (SIS) during the academic year 2021 to 2022.

Data from the parent and pupil questionnaires are weighted to population totals for pupils in state-funded education in England. Headteacher questionnaire data are unweighted because of small sample sizes.

Our [methodology article](#) provides further information about response rates, survey design, how we process data and estimation methods.

### Reference period

Coverage dates for each survey are:

- parent - 22 November to 15 December 2021
- pupil - 11 November to 15 December 2021
- headteacher - 25 November to 15 December 2021

### Response rates

134 schools were registered to the study and been invited to complete the headteacher questionnaire, with 107 responding (80% response rate).

The parents of 4,870 pupils were invited to complete the parent questionnaire; 3,375 parents responded, (on behalf of 4,128 children, as each parent can respond on behalf of multiple children). This gives an 85% response rate.

3,304 pupils were invited to complete the pupil questionnaire and 2,045 responded (62% response rate).



## Comparison with other Office for National Statistics (ONS) estimates of long COVID prevalence

The long COVID prevalence estimates in the School Infection Survey are higher than those reported from the COVID-19 Infection Survey (CIS): 0.54% and 1.87% of children aged 2 to 11 years and 12 to 16 years, respectively, reported long COVID symptoms during the four weeks to 2 January 2022.

The estimates in this release relate to period prevalence (children who fulfilled the Delphi long COVID criteria at any time between 1 March 2020 and 15 December 2022, including those whose symptoms had resolved before the end of the period) whereas those from the CIS relate to point-in-time prevalence (capturing only children who currently have symptoms).

The definition of long COVID in the CIS does not include the criteria of previously testing positive for COVID-19 and is based on a 4- rather than a 12-week threshold of persistent symptoms.

## 9 . Strengths and limitations

A robust sampling and weighting process has been used to ensure data are representative of the pupil population in state-funded schools in England.

All participation has been invited on a voluntary basis. This means there could be some self-selection bias to those who volunteered to participate. Widely used methods are adopted for the surveys' sampling and weighting strategies to limit the impact of bias, but estimation methods can contribute to the level of uncertainty in the data. Bias may be introduced if non-response is related to long COVID, for example participants being more willing, or less able, to continue in the study because of their symptoms.

The sample size is small, meaning that detailed analyses for sub-groups are not possible. Comparisons between groups must be done with caution as estimates are provided from a sample survey; as such, confidence intervals are included in the datasets to present the sampling variability.

Our analysis of those with a positive test will exclude some pupils such as those infected before the introduction of mass community testing around June 2020.

## 10 . Related links

[Prevalence of ongoing symptoms following coronavirus \(COVID-19\) infection in the UK](#)

Bulletin | Released 3 February 2022

Estimates of the prevalence of self-reported long COVID and associated activity limitation, using UK Coronavirus (COVID-19) Infection Survey data.

[Coronavirus \(COVID-19\) latest insights](#)

Interactive tool | Updated regularly

A live roundup of the latest data and trends about the coronavirus (COVID-19) pandemic from the ONS and other sources.