

Statistical bulletin

COVID-19 Schools Infection Survey, England: physical activity and eating behaviours, March 2022

Analysis of associations between COVID-19, physical activity and eating behaviours from the Schools Infection Survey's 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.

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1 . Main points

- A quarter (24.7%) of primary school pupils were physically active for the recommended 60 minutes every day in the past week compared with 14.3% of secondary school pupils in school Years 7 to 13.
- 2 in 5 females (41.9%) in school Years 7 to 13 answered "Yes" to two or more questions about experiencing eating difficulties, compared with one in five males (17.5%).
- 41.4% of secondary school pupils in school Years 7 to 13 who had experienced long COVID because of their most recent coronavirus (COVID-19) infection answered "Yes" to at least two of the five questions about experiencing eating difficulties.
- Analysis of the data did not identify a relationship between COVID-19 and physical activity level or any differences in physical activity between those who had experienced long COVID and those who had not.

Warning

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 . Physical activity

The Wave 3 questionnaire included questions to assess pupils' current physical activity levels to understand whether these have been impacted by coronavirus (COVID-19). As part of our analysis we looked at whether there was a relationship between the impact of COVID-19 and physical activity levels. Our findings did not find any statistically significant differences in the physical activity levels of those who had had a positive COVID-19 test and those who had not, or between those with long COVID and those without.

Our results can be used to indicate how physical activity in school-aged pupils has changed over time. Please see results from Sport England for pre-coronavirus pandemic findings, although these results are not directly comparable because of differing data collection methods. Further information about comparing with other data sources can be found in the [measuring the data section](#).

Time spent being physically active

The NHS [recommends](#) that children aged 5 to 18 years should aim for 60 minutes of physical activity every day. A quarter of parents of primary school pupils (24.7%) said their child had been physically active for at least 60 minutes every day in the past seven days, which was significantly higher than both the proportion of secondary school pupils (school Years 7 to 13) who reported this as their activity level themselves (14.3%) and of pupils in years 7 to 11 whose parents reported this as their activity level (12.1%).

We found that, on average, parents of primary school pupils said their child was physically active for 4.7 days in the past seven days. This was significantly higher than both what secondary school pupils in school Years 7 to 13 reported themselves (3.9 days) and what parents of secondary school pupils in school Years 7 to 11 reported (3.9 days).

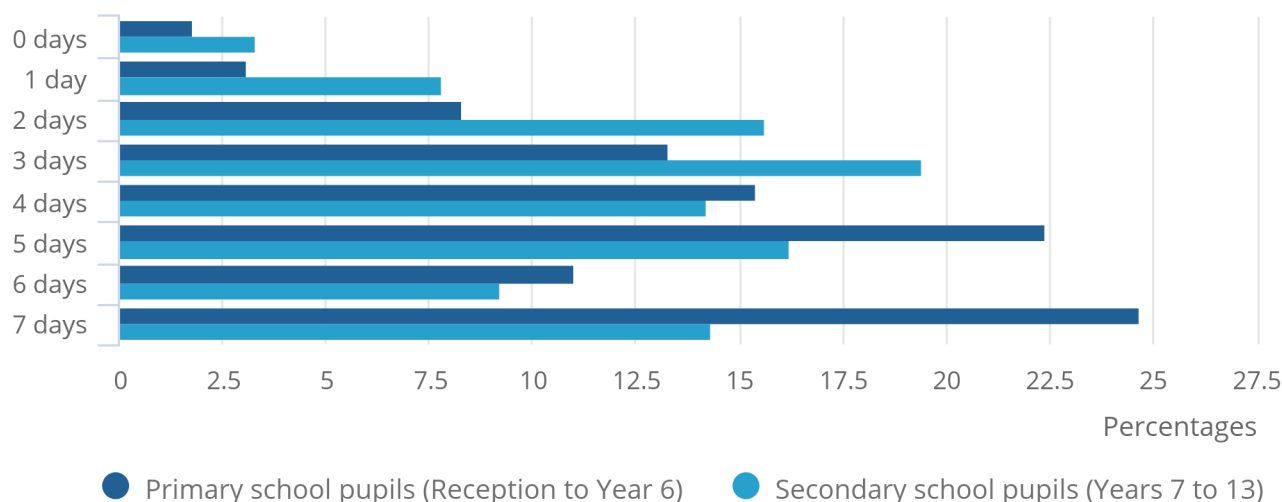
Significantly more male pupils' (school Years 7 to 11) parents than female pupils' parents said they exercised every day in the past seven days (14.8% compared with 9.4%). A similar trend was found in responses from pupils in school Years 7 to 13 themselves, however, these differences were not statistically significant.

Figure 1: A quarter of primary school pupils and just over a tenth of secondary school pupils were physically active for at least 60 minutes a day during the past seven days

Number of days primary and secondary school pupils were physically active for at least 60 minutes during the past seven days, England, March 2022

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Number of days primary and secondary school pupils were physically active for at least 60 minutes during the past seven days, England, March 2022



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

Notes:

1. Question for primary school pupils: Over the past seven days, on how many days was your child physically active for a total of at least 60 minutes per day?
2. Questions for secondary pupils in school Years 7 to 13 are identical but asked directly rather than a parent answering on the pupil's behalf.
3. Base: All primary (n = 3,782) and secondary (n = 2,961) school pupils in school Years Reception to Year 6 or Year 7 to Year 13. Results from primary school pupils are parent-reported and secondary school pupils are self-reported.

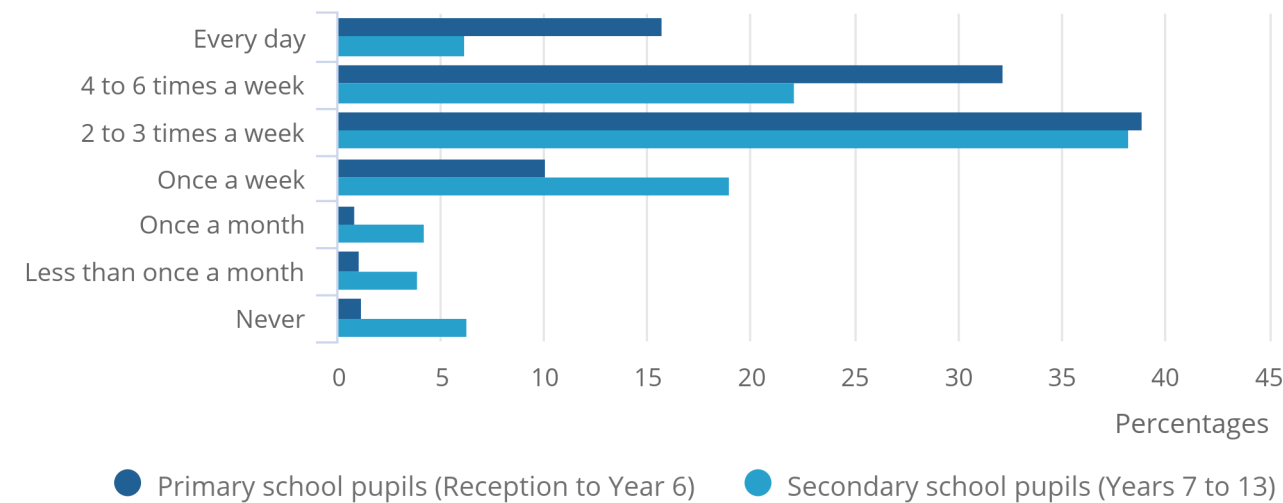
Outside of school hours, more secondary school pupils' (school Years 7 to 11) parents (4.5%) said their child never exercises in their free time compared with primary school pupils' parents (1.2%). Of secondary school pupils themselves (school Years 7 to 13), 6.3% said they never do exercise in their free time. We also found that male secondary school pupils (school Years 7 to 13) were more likely to do regular exercise outside of school hours compared with female pupils. Female secondary school pupils (school Years 7 to 13) were significantly more likely to say that they exercised once a week or less (40.6%) compared with male secondary school pupils (26.1%).

Figure 2: Around four in ten primary and secondary pupils exercised for two to three times a week in their free time

Number of times a week primary and secondary school pupils exercise in their free time, England, March 2022

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Number of times a week primary and secondary school pupils exercise in their free time, England, March 2022



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

Notes:

1. Questions for primary school pupils: Outside of school hours, how often does your child usually exercise in their free time enough to get out of breath or sweaty?
2. Questions for secondary school pupils are identical but asked of them rather than of a parent answering on their behalf.
3. Base: All primary (n = 3,778) and secondary (n = 2,958) school pupils in school years Reception to Year 6 or Year 7 to Year 13. Results from primary school pupils are parent-reported and secondary school pupils are self-reported.

The most common amount of time spent exercising per week was two to three hours according to parents of those in primary school (36.0%), parents of those in secondary school (school Years 7 to 11) (32.0%), and secondary school pupils (school Years 7 to 13) themselves (29.2%). Over half of female secondary school pupils (school Years 7 to 13) (52.9%) said they only exercised for about one hour or less each week; this was significantly higher than male pupils (38.5%).

Time spent sitting during a typical day

Figure 3 shows the amount of time spent by pupils during a typical day sitting and watching television, playing computer games, talking with friends or using their mobile phone. Over half of primary school pupils' parents (55.9%) said their child spent one to two hours a day doing activities while sitting down. In comparison, 47.7% of secondary school pupils' (school Years 7 to 11) parents and 42.9% of secondary school pupils (school Years 7 to 13) themselves said they spent three to four hours doing activities while sitting down in their free time.

Of primary school pupils, 6.8% of male pupils' parents said their child spent five or more hours per day sitting outside of school hours. This was significantly higher than female pupils' parents (2.7%).

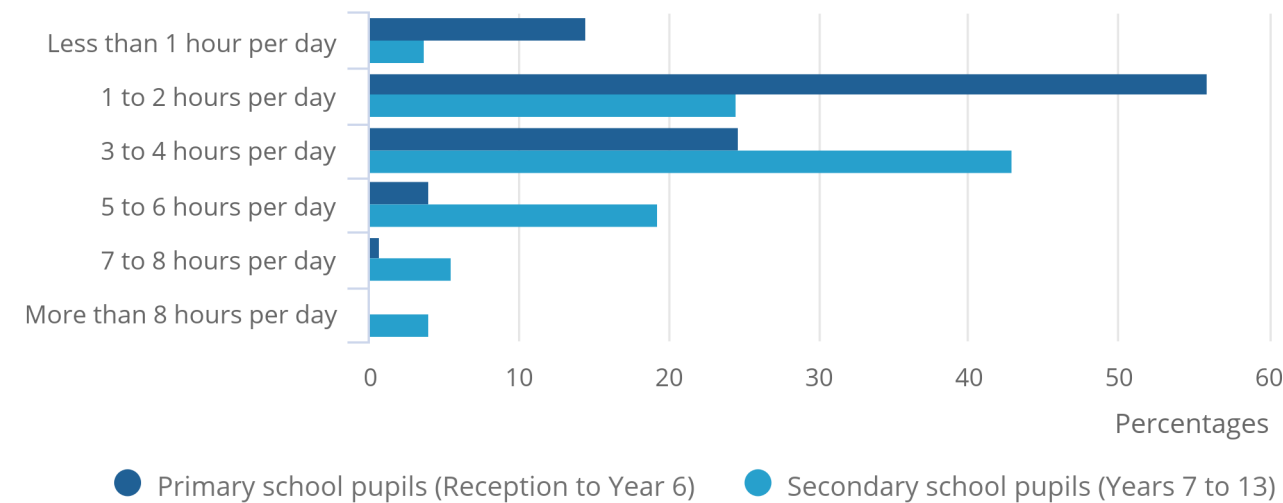
Of secondary school pupils (years 7 to 13), 28.9% said they spent five or more hours doing activities that did not involve much movement in their free time. Significantly, more pupils with a probable (47.8%) and possible (43.0%) mental health disorder said they spent five or more hours sitting in their free time than those with no mental health disorder (23.8%).

Figure 3: Secondary school pupils tended to spend longer outside of school hours doing activities that were not physically active

Proportion of primary and secondary school pupils spending their free time being inactive, England, March 2022

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Proportion of primary and secondary school pupils spending their free time being inactive, England, March 2022



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

Notes:

1. Questions for primary school pupils: Outside of school hours: How much time does your child spend during a typical or usual day sitting and watching television, playing computer games, talking with friends or using their mobile phone?
2. Questions for secondary school pupils are identical but asked of them rather than of a parent answering on their behalf.
3. Base: All primary (n = 3,776) and secondary (n = 2,957) school pupils in school years Reception to Year 6 or Year 7 to Year 13. Results from primary school pupils are parent-reported and secondary school pupils are self-reported.

3 . Eating behaviours

To explore the wider effects of the coronavirus (COVID-19) pandemic on young people and children, pupils and parents were asked five questions about the pupils' eating behaviours. The aim was to develop an idea of whether they were experiencing eating difficulties, which could indicate a disorder such as anorexia nervosa or bulimia nervosa. Answering "Yes" to any of these questions does not serve as a diagnosis of an eating disorder. Participants were advised to consult a GP if they thought they may have one.

As all questions were optional, we have only included those respondents who answered all five questions in the following analysis.

For pre-coronavirus pandemic measures, please see the [Mental Health of Children and Young People survey \(MHCYP\)](#). Please note this study is not directly comparable because of different methodologies.

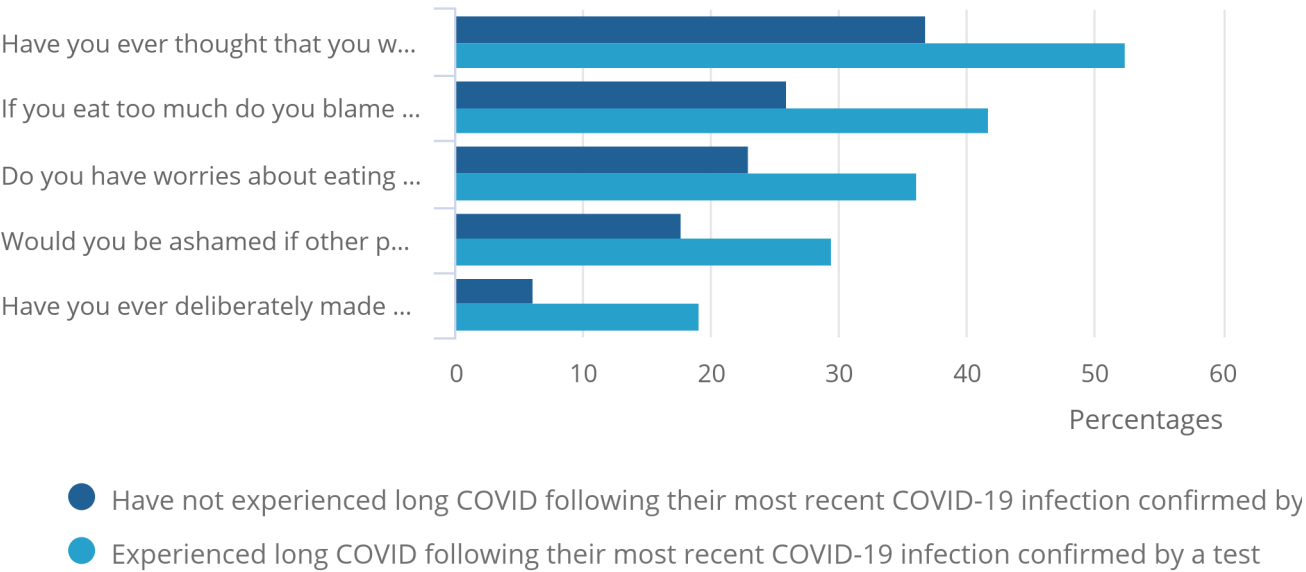
Over half of secondary school pupils in school Years 7 to 13 (52.5%) who had experienced long COVID following their most recent COVID-19 infection, and 36.8% of those who had not, reported thinking they were fat even when told they were very thin. Nearly one in five (19.2%) of those pupils with long COVID reported making themselves vomit deliberately.

Figure 4: Over half of all pupils in school Years 7 to 13 who had experienced long COVID thought they were fat even when people had told them they were very thin

Proportion of secondary school pupils in school Years 7 to 13 who answered yes to various questions on eating difficulties, by whether they had experienced long COVID as a result of their most recent COVID-19 infection. England, March 2022

Figure 4: Over half of all pupils in school Years 7 to 13 who had experienced long COVID thought they were fat even when people had told them they were very thin

Proportion of secondary school pupils in school Years 7 to 13 who answered yes to various questions on eating difficulties, by whether they had experienced long COVID as a result of their most recent COVID-19 infection. England, March 2022



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

Notes:

1. Questions from pupil questionnaire are as presented. Note that the wording of the question on children thinking they were fat differs slightly from the same question in the parent questionnaire and is slightly ambiguous, so some pupils may have answered ‘Yes’ to this question when they shouldn’t have. Exploration of the data has shown that the impact is small as it follows the same trend as the parent responses for the same cohort.
2. Base: All secondary school pupils in school Years 7 to 13 with and without long COVID who answered the respective questions (n = 148 to 149 and 2,794 to 2,801 respectively).

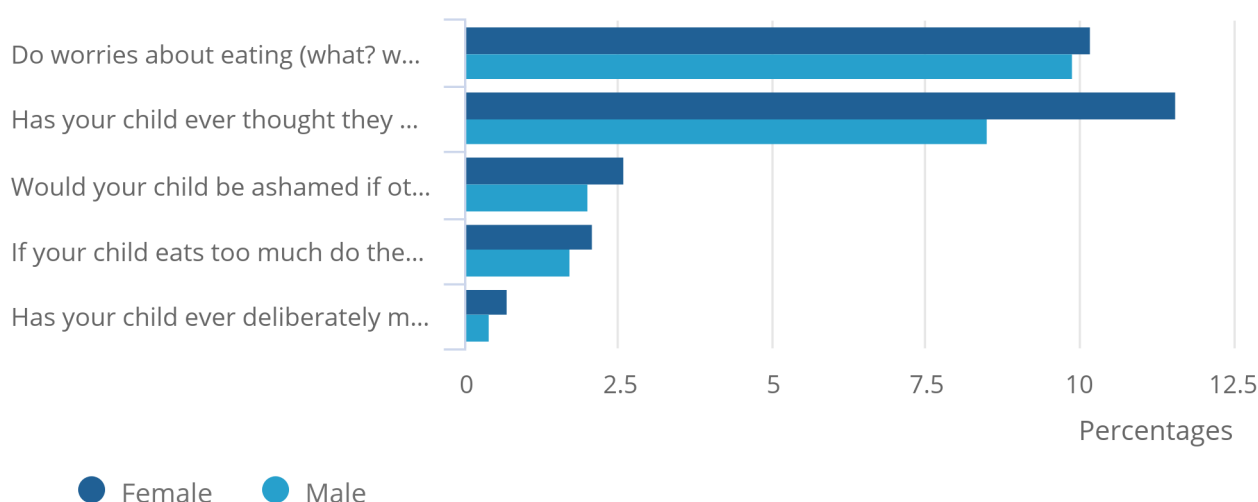
Among primary school pupils, the proportion reporting these behaviours were generally similar between those with long COVID and those without, except for the proportion reported to have thought they were fat when told they were thin, which was significantly higher among those with long COVID (29.8% compared with 9.7%).

Figure 5: One in ten primary school pupils had worries about eating according to their parents

Proportion of primary school pupils whose parents answered yes to various questions on eating behaviours, by gender. England, March 2022

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Proportion of primary school pupils whose parents answered yes to various questions on eating behaviours, by gender. England, March 2022



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

Notes:

1. Questions from parent questionnaire are as presented.
2. Base: All female and male pupils of primary school age whose parent answered each question (n = 1,860 to 1,896 for females and 1,878 to 1,908 for males).

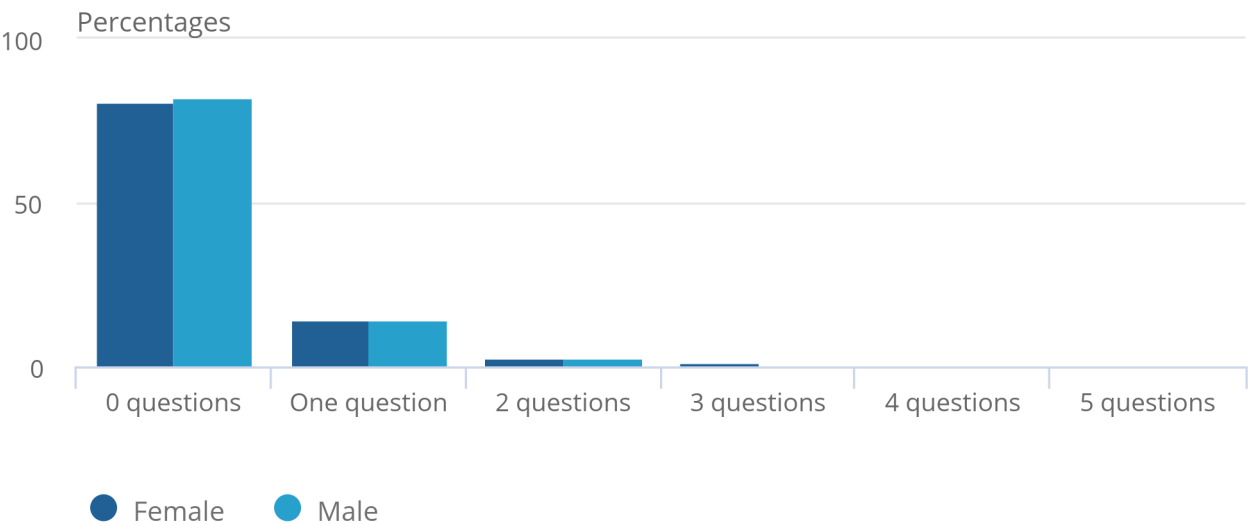
1 in 10 (10.1%) primary school pupils were reported to have worries about eating that interfered with their life, with no significant difference in reporting between female and male pupils. Similar proportions (11.6% and 8.5% for female and male pupils, respectively) were reported to have thought they were fat even when other people told them that they were very thin.

Figure 6: About one in five primary school children were reported to have at least one behaviour relating to eating difficulties

Proportion of primary school pupils whose parents answered yes to different numbers of questions on eating behaviours, by gender. England, March 2022

Figure 6: About one in five primary school children were reported to have at least one behaviour relating to eating difficulties

Proportion of primary school pupils whose parents answered yes to different numbers of questions on eating behaviours, by gender. England, March 2022



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

Notes:

1. Questions used from the parent questionnaire are as in Figure 5.
2. Base: All females and males in primary school whose parents answered every question (n = 1,830 and 1,878 respectively).

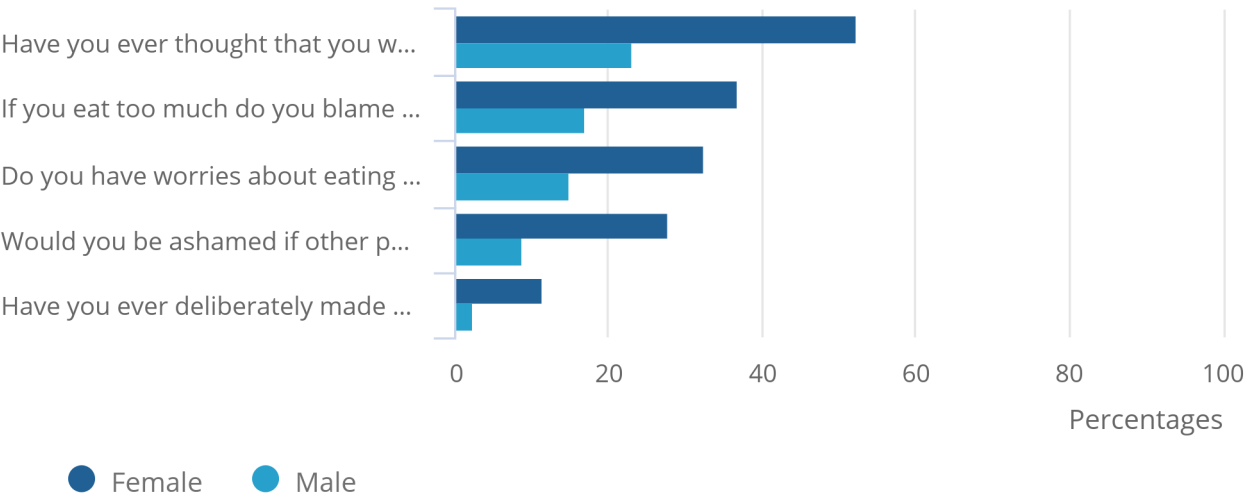
19.5% of females and 17.7% of males in primary school were reported as exhibiting at least one behaviour relating to eating difficulties by their parents. The proportions of females and males whose parents answered “Yes” to two or more questions were also similar to each other, at 4.9% and 3.3%, respectively, with no significant difference.

Figure 7: More than half of female pupils in school Years 7 to 13 have thought they were fat even when people told them they were very thin

Proportion of secondary school pupils in school Years 7 to 13 who answered “yes” to various questions on eating behaviours, by gender. England, March 2022

Figure 7: More than half of female pupils in school Years 7 to 13 have thought they were fat even when people told them they were very thin

Proportion of secondary school pupils in school Years 7 to 13 who answered “yes” to various questions on eating behaviours, by gender. England, March 2022



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

Notes:

- 1. Questions used from the pupil questionnaire are as presented. Note that the wording of the first question is slightly ambiguous, as in Figure 4.
- 2. Base: All female and male pupils in years 7 to 13 who answered each question (n = 1,624 to 1,631 females and 1,315 to 1,318 males).

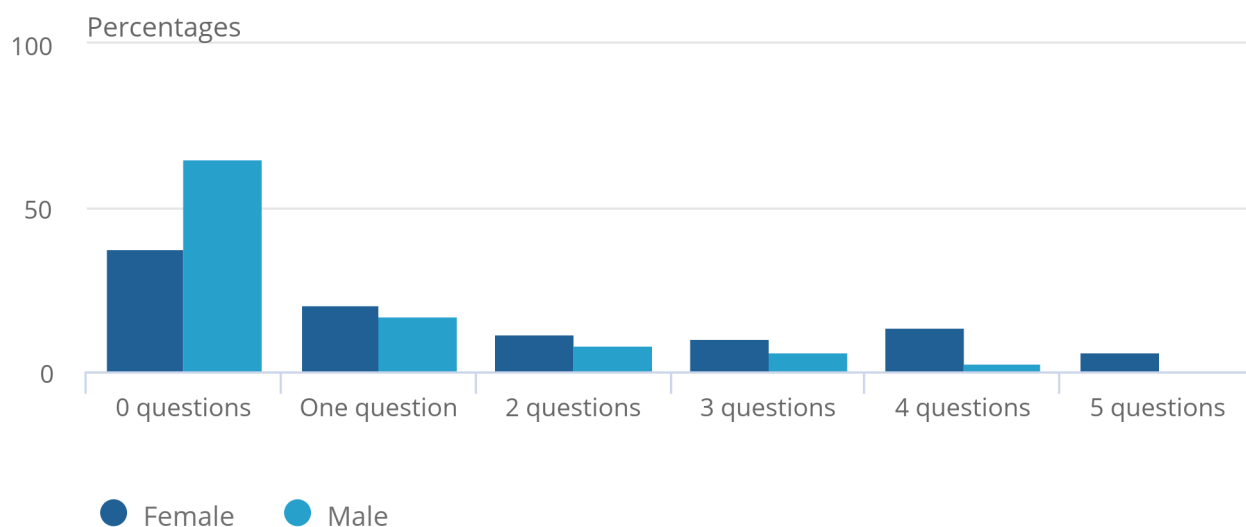
Thinking they were fat even when told that they were very thin was the most frequently reported behaviour by both female and male pupils in school Years 7 to 13 (52.3% and 23.0%, respectively). For every question there were significantly more female pupils answering “Yes” than male pupils.

Figure 8: About two in five female pupils and one in five male pupils in school Years 7 to 13 answered “Yes” to two or more questions on eating difficulties

Proportion of secondary school pupils in school Years 7 to 13 who answered “yes” to different numbers of questions on eating behaviours, by gender. England, March 2022

Figure 8: About two in five female pupils and one in five male pupils in school Years 7 to 13 answered “Yes” to two or more questions on eating difficulties

Proportion of secondary school pupils in school Years 7 to 13 who answered “yes” to different numbers of questions on eating behaviours, by gender. England, March 2022



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

Notes:

1. Questions used from pupil questionnaire are as in Figure 6.
2. Base: All female and male secondary school pupils in school Years 7 to 13 who answered every question (n = 1,608 and 1,297 respectively).

Significantly more female secondary school pupils in school Years 7 to 13 (41.9%) self-reported two or more behaviours associated with eating difficulties compared with 17.5% of males. Of secondary school pupils (school Years 7 to 11) who answered “Yes” to two or more questions, only a third (33.1%) of these had parents who responded “Yes” to two or more questions, suggesting differences in parent and pupil reporting of eating behaviours.

4 . COVID-19 Schools Infection Survey, physical activity and eating behaviours data

[COVID-19 Schools Infection Survey, physical activity and eating behaviours, England](#)

Dataset | Released 15 June 2022

COVID-19 Schools Infection Survey, physical activity and eating behaviours, England. Summary - Potential impact of the coronavirus (COVID-19) pandemic on young people and schools, including analysis of physical activity and eating behaviours, and breakdowns by age and sex where possible. Indicators from the Schools Infection Survey.

5 . Collaboration

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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. Of note are:

- Shamez Ladhani - UK Health Security Agency: Consultant Epidemiologist and Study Chief Investigator
- Georgina Ireland - UK Health Security Agency: Senior Scientist
- Patrick Nguipdop-Djomo - London School of Hygiene and Tropical Medicine: Associate Professor of Infectious Disease Epidemiology and Study Co-Principal Investigator
- Punam Mangtani - London School of Hygiene and Tropical Medicine: Professor of Infectious Disease Epidemiology and Study Co-Principal Investigator

6 . Glossary

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 (UKRI) and the National Institute for Health Research (NIHR), participated in the Delphi approach and agreed that long COVID could be defined by:

- a positive test for coronavirus (COVID-19) infection
- the presence of symptoms continuously over a 12-week period or longer
- everyday life being 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) the World Health Organisation (WHO).

Definitions of long COVID can vary between studies and articles. The ONS prevalence of ongoing symptoms analysis uses different criteria, namely people who had a confirmed infection, or suspected they had COVID-19.

Strengths and Difficulties Questionnaire (SDQ)

The Strengths and Difficulties Questionnaire (SDQ) is a brief behavioural screening questionnaire used for those aged 3-to 16-years. 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 five scales:

- emotional symptoms (five items)
- conduct problems (five items)
- hyperactivity/inattention (five items)
- peer relationship problems (five items)
- prosocial behaviour (five items)

The SDQ also includes an impact supplement, which asks whether the respondent considers the child or young person to have difficulties, how long the difficulties 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 to be, possibly or probably demonstrating a mental health condition related to emotional, behavioural and hyperactivity disorders. The algorithm combines data from all available informants. A disorder is considered probably present if the scores on the relevant symptom indicate the child is above the 95th centile 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 if hyperactivity was five or below, with impact scores at 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 from the 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.

7 . Measuring the data

Data presented in this bulletin are from Round 3 of the COVID-19 Schools Infection Survey (SIS) carried out during March of the 2021 to 2022 academic year.

Data from the parent and pupil questionnaires are weighted to population totals for pupils 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:

- 15 March to 1 April 2022 for the pupil and parent questionnaire
- 23 March to 1 April 2022 for the headteacher questionnaire

Response rates

The estimated response rates are:

- 46% for the pupil questionnaire where 2,966 pupils responded from 6,511 eligible participants registered
- 62% for the parent questionnaire where parents responded on behalf of 7,448 children from 11,995 eligible children registered
- 64% for the headteacher questionnaire where 111 headteachers or delegated authority responded on behalf of 173 registered schools

Response rates are dependent on people voluntarily completing the questionnaire, which may introduce respondent bias.

Comparisons with other studies on physical activity

Our physical activity findings are lower than those reported by the Sports England Active Lives Children and Young People Survey. Before the coronavirus pandemic, Sport England found that 47% of students were active for at least 60 minutes per day during the [2018 to 2019 academic year](#), which lowered to 45% during the [2019 to 2020 academic year](#).

The Sports England study has a different methodology to the Schools Infection Study, which could explain some of these differences. The study prompted pupils to recall the sports and activities in which they have taken part and to estimate how much time they spent participating in each activity each day. This meant pupils could reflect on all kinds of activity rather than providing a broad estimate.

8 . Strengths and limitations

Please refer to the [Strengths and limitations section](#) of our previous bulletin.

9 . Related links

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

Bulletin | Released 28 February 2022

Analysis of COVID-19 findings on mental health and long COVID from the Schools Infection Survey's headteacher, parent and pupil questionnaires.

[COVID-19 Schools Infection Survey, England: pandemic response measures in schools: January to February 2022](#)

Bulletin | Released 03 May 2022

Analysis of coronavirus (COVID-19) findings on face coverings and remote learning from the Schools Infection Survey's headteacher, parent and pupil questionnaires.

[COVID-19 Schools Infection Survey, England: attitudes to vaccines and preventative measures, November to December 2021](#)

Bulletin | Released 01 February 2022

Initial insights from the first round of questionnaire data collected as part of the Schools Infection Survey. Questionnaires are completed by parents of participating children, secondary school aged children and headteachers. Topics cover vaccine sentiment, ventilation in schools and preventative measures implemented in schools.