

# THE LANCET

## Child & Adolescent Health

### Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Stephenson T, Pinto Pereira SM, Shafran R, et al. Physical and mental health 3 months after SARS-CoV-2 infection (long COVID) among adolescents in England (CLoCk): a national matched cohort study. *Lancet Child Adolesc Health* 2022; published online Feb 7. [https://doi.org/10.1016/S2352-4642\(22\)00022-0](https://doi.org/10.1016/S2352-4642(22)00022-0).

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## CLOcK Questionnaire

The CLOcK questionnaire given to participants is copied below. Please note, due to copyright reasons, some parts have been omitted, where this is the case, the questionnaire name has been put in place of the questionnaire itself.



Health questionnaire for children and young people aged 11-18 to answer directly.

These questions are to be answered by the Young Person who had the Covid-19 test.

If you need any help, please ask a parent, relative, carer or friend to help you.

For questions that ask for a particular date, don't worry if you can't remember it exactly, just enter the closest date.

The questions **do not** need to be completed in one go but can be paused and continued at a later time – just remember to click save.

All of the information which you provide will be kept confidential and will not be shared with anyone outside the research team studying Long Covid in young people.

**Please enter the unique personal number on the front of the letter which we sent you asking you to take part:**

## Consent

Before starting the survey, please read the relevant consent and information sheets found here

Child information sheet 11-15

Child information sheet 16-18

Parent/Carer information Sheet

Which age group does the participant belong to

11-15

16-18

Do you consent to take part in the study

Yes

No

## About you

Your email address so that we can contact you again (this will not be shared with anyone else):

\_\_\_\_\_

Please re-enter your email address:

\_\_\_\_\_

About you

Please tick this box to confirm the following email address is correct {Q9}

Yes, this email is correct

\*Sex at birth:  Male  Female  Prefer not to say

\*How old are you? (in years):

How tall are you? \_\_\_\_\_ ( cm  metres  feet/inches)  Not sure

What is your weight now? \_\_\_\_\_ ( kg  stone  lbs)  Not sure

\*What did you weigh before your Covid-19 test? \_\_\_\_\_ ( kg  stone  lbs)  Not sure

\*What is your postcode? \_\_\_\_\_

\*How many brothers and sisters do you have?

\*Ethnicity (Kelsey – please choose one from pull-down menu): What is your ethnic group?

Choose one option that best describes your ethnicity:

### White

1. English/Welsh/Scottish/Northern Irish/British
2. Irish
3. Gypsy or Irish Traveller
4. Any other White background

### Mixed/Multiple ethnic groups

5. White and Black Caribbean
6. White and Black African
7. White and Asian
8. Any other Mixed/Multiple ethnic background

### Asian/Asian British

9. Indian
10. Pakistani
11. Bangladeshi
12. Chinese
13. Any other Asian background

**Black/African/Caribbean/Black British**

- 14. African
- 15. Caribbean
- 16. Any other Black/African/Caribbean background

**Other ethnic group**

- 17. Arab
- 18. Any other ethnic group
- 19. Prefer not to say

If other, please describe

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**Just before the Covid-19 pandemic in early March 2020 were you experiencing:-**

Asthma?	Yes/No
Lung disease other than asthma?	Yes/No If yes, please describe
Allergy problems (skin eczema, hay fever, food allergies)	Yes/No If yes, please describe
Problems with your stomach, gut, liver, kidneys or digestion?	Yes/No If yes, please describe
A neurological disease*(one that affects the brain or nervous system e.g. epilepsy)	Yes/No If yes, please describe
Any physical disability	Yes/No If yes, please describe
Learning difficulties at school	Yes/No If yes, please describe
Did you have an Educational Care and Health Plan (ECHP) giving extra support at school?	Yes/No
Problems with your sleep, including getting to sleep, waking in the night or waking early?	Yes/No If yes, please describe
Problems with your eating including eating too much, eating too little or eating in an uncontrolled way? (Binge eating)	Yes/No If yes, please describe
A loss of interest or pleasure in doing things?	Yes/No
If yes, how often	Half the time, More than half the time, Nearly always
Feeling down, depressed or hopeless	Yes/No
If yes, how often	Half the time, More than half the time, Nearly always
Worrying a lot about bad things or the future	Yes/No
If yes, how often	Sometimes, Often, Always
Problems with headaches	Yes/No
If yes, how often	Sometimes, Often, Always
Problems with tummy aches	Yes/No
If yes, how often	Sometimes, Often, Always
Problems with friendships	Yes/No
Do you often feel very tired?	Yes/No
If yes, how often	Half the time, More than half the time, Nearly always
Any other serious ill health?	Yes/No If yes, please describe

**Just before the Covid-19 pandemic in early March 2020 were you:-**

Smoking?	Yes/No  How many per day on average?
Using e-cigarettes?	Yes/No How many uses per day on average?

How was your physical health in general before your Covid-19 test?

- Very poor  Poor  Ok  Good  Very good

*If you ticked poor or very poor, please tell us why:*

How was your mental health in general before your Covid-19 test?

- Very poor  Poor  Ok  Good  Very good

*If you ticked poor or very poor, please tell us why:*

Before your Covid-19 test, were you taking any medicine given by your doctor (e.g., to help manage your concentration?)

Yes/No

Please list the medicines you were taking? (you can ask an adult for help)

Before your Covid-19 test, were you getting any help such as 'talking therapy' for your mental health? E.g. talking to the school counsellor

Yes/No

What kind of help?

## About your Covid-19 test

Have you had a positive COVID-19 test result?

- Yes  No

How many positive COVID-19 test results have you had?

What was the date of your first positive COVID-19 test?

If more than 1: What was the date of your most recent positive COVID-19 test?

Even though your tests have been negative, do you believe that you had COVID-19? (please answer these in relation to your last Covid-19 test)

- Yes  No  Not sure



What was the reason for your most recent Covid-19 test?

- I had some symptoms.
- I was near someone who had tested positive
- School testing
- Other

*If had symptoms, following questions will appear the first time the questionnaire is given.*

When did you first notice them?

How long did they last?

- A day or less
- a few days
- about a week
- more than a week
- A couple of weeks or more

How bad were the symptoms at their worst?

- Not very – I could carry on doing things
- a little – I felt a little bit poorly
- quite bad – I had to go to bed sometimes
- very bad – I couldn't do much
- Extremely bad – I couldn't do anything

In the last four weeks, how many school days (online or in person) in total did you miss because of symptoms of COVID-19

- None
- 1-2 days
- 3-5 days
- 6-10 days
- 11-15 days
- More than 15 days

What symptoms did you have? Check all that apply. [Items from section 4]

- Fever
- chills or shivers (feeling too cold)
- persistent cough (coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours)
- unusual fatigue/tiredness
- unusual shortness of breath
- loss of smell/taste
- unusually hoarse voice
- unusual chest pain or tightness in your chest
- unusual abdominal pain
- diarrhoea
- headache
- confusion, disorientation or drowsiness
- unusual eye-soreness or discomfort (e.g. light sensitivity, excessive tears, or pink/red eye)
- skipping meals
- dizziness or light-headedness
- sore throat
- unusual strong muscle pains
- earache or ringing in your ears (tinnitus)
- raised, red, itchy welts on the skin or sudden swelling of the face or lips

- red/purple sores or blisters on your feet, including your toes
- other

If other, please state

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What were your *main* symptoms?

- Fever
- chills or shivers (feeling too cold)
- persistent cough (coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours)
- unusual fatigue/tiredness
- unusual shortness of breath
- loss of smell/taste
- unusually hoarse voice
- unusual chest pain or tightness in your chest
- unusual abdominal pain
- diarrhoea
- headache
- confusion, disorientation or drowsiness
- unusual eye-soreness or discomfort (e.g. light sensitivity, excessive tears, or pink/red eye)
- skipping meals
- dizziness or light-headedness
- sore throat
- unusual strong muscle pains
- earache or ringing in your ears (tinnitus)
- raised, red, itchy welts on the skin or sudden swelling of the face or lips
- red/purple sores or blisters on your feet, including your toes
- other

If other, please state

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Did you/your parent talk to the doctor about your Covid-19 symptoms?  Yes  No

Did you go to hospital about your Covid-19?  Yes  No

Did you have to stay overnight in hospital for Covid-19?  Yes  No

Have you had a vaccination against COVID-19?

Yes  No

## About your health at the moment

**If you have had symptoms of COVID-19, how much do you agree with the following statement?**

"I have fully recovered from COVID-19"

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

How do you feel right now?	I feel as healthy as normal I am not feeling quite right
Do you have a fever?	Yes/No
Do you feel chills or shivers (feel too cold)?	Yes/No
If you are able to measure it, what is your temperature?	
Do you have a persistent cough (coughing a lot for more than an hour, or 3 or more coughing episodes in 24 hours)?	Yes/No
Are you experiencing unusual fatigue/tiredness?*	No Mild fatigue Severe fatigue - I struggle to get out of bed
Are you experiencing unusual shortness of breath?*	No Yes, <b>mild</b> symptoms - slight shortness of breath during ordinary activity Yes, <b>significant</b> symptoms - breathing is comfortable only at rest Yes, <b>severe</b> symptoms - breathing is difficult even at rest
Do you have a loss of smell/taste?	Yes/No
Do you have an unusually hoarse voice?	Yes/No
Are you feeling an unusual chest pain or tightness in your chest?	Yes/No
Do you have an unusual abdominal pain?	Yes/No
Are you experiencing diarrhoea?	Yes/No
Do you have a headache?	Yes/No
Do you have any of the following symptoms: confusion, disorientation or drowsiness?	Yes/No
Do your eyes have any unusual eye-soreness or discomfort (e.g. light sensitivity, excessive tears, or pink/red eye)?	Yes/No
Have you been skipping meals?	Yes/No
Are you experiencing dizziness or light-headedness?	Yes/No
Do you have a sore throat?	Yes/No
Do you have unusual strong muscle pains?	Yes/No
Do you have earache or ringing in your ears (tinnitus)	Yes/No
Have you had raised, red, itchy welts on the skin or sudden swelling of the face or lips?	Yes/No
Have you had any red/purple sores or blisters on your feet, including your toes?	Yes/No
Are there other important symptoms you want to share with us?	

[Not part of questionnaire: \*considered as a binary variable: mild-severe (present) and no (absent)]

## How you feel about your overall health

*\*Describing your health **BEFORE your COVID-19 test***

Under each heading, please tick the ONE box that describes **your health BEFORE your COVID-19 test**

### EQ-5D-Y

*Describing your health **TODAY***

Under each heading, please tick the ONE box that describes **your health TODAY**

### EQ-5D-Y

**BEFORE your COVID-19 test**

## UCLA LONELINESS SCALE FOR CHILDREN

**TODAY**

## UCLA LONELINESS SCALE FOR CHILDREN

We would like to know how good or bad your health was **BEFORE your Covid-19 test\*** and how it is **TODAY**

This scale is numbered from 0 to 100%

**100% means the best health** you can think of

**0% means the worst health** you can think of.

Please look at the scale and **select the number** for your health **BEFORE your Covid-19 test** and your health **TODAY**

Before Covid-19 Test

- 0
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40
- 45
- 50
- 55

- 60
- 65
- 70
- 75
- 80
- 85
- 90
- 95
- 100

Today

- 0
- 5
- 10
- 15
- 20
- 25
- 30
- 35
- 40
- 45
- 50
- 55
- 60
- 65
- 70
- 75
- 80
- 85
- 90
- 95
- 100

**Covid-19 and your family**

**Has Covid-19 has affected your family members and if so, can you tell us who?**  
*(Kelsey – skip rule if say ‘no’)*

	In your house				In your extended family (Grandparents, aunts, uncles etc)			
	<i>Yes</i>	<i>No</i>	<i>Don't know</i>	<i>Who?</i>	<i>Yes</i>	<i>No</i>	<i>Don't know</i>	<i>Who?</i>
Has anyone tested positive for Covid-19?								
Has anyone been to hospital with Covid-19?								
Has anyone been in intensive care (ICU) with Covid-19?								
Has anyone died from Covid-19?								
Does anyone have ongoing problems from Covid-19?								

**COVID-19 and loneliness****STRENGTHS AND DIFFICULTIES (SDQ) QUESTIONNAIRE****CHALDER FATIGUE SCALE****SHORT WARWICK-EDINBURGH MENTAL WELLBEING SCALE (SWEMWBS)**

## FINAL QUESTION

**Please use this space if there is there anything else you would like to tell us about your health or how the pandemic or lockdown have affected you.**

This research study cannot offer treatment. If you feel you would like some help, please contact

- your GP
- ChildLine [www.childline.org.uk](http://www.childline.org.uk)
- NHS 111 [111.nhs.uk/](http://111.nhs.uk/), or call on 111
- Shout [giveusashout.org/](http://giveusashout.org/), or text 85258

## Thank you

Thank you so much for completing this questionnaire.

We will send you the same questionnaire but with fewer questions in a few weeks.

You will be asked to complete the questionnaire two or three more times.

At the end of the study (in about 2 years) after completing all of the questionnaires, you will receive a £25 voucher.

Please indicate which voucher you would prefer

- Amazon
- LOVE2SHOP

Please remember to click submit



**Supplementary Table 1. Studies of Long Covid in CYP from Behnood et al.<sup>1</sup>**

Source	Study Design	COVID-19 confirmation method.	Follow up duration	# of participants	Age (years)	Findings
Blankenburg et al. <sup>2</sup> [pre-print]	Cohort	Serology (100%)	≥12 weeks	188 (Seropositive)  1365 (Seronegative)	Seropositive = 15 (14-17) [Range: 10-35]  Seronegative = 15 (14-16) [Range: 10-38]	More than one third reported the presence of at least one neurocognitive, pain or mood symptom with tenseness, listlessness and difficulties concentrating being reported most commonly. However, there was no statistical difference comparing the reported symptoms between seropositive students - with mild to asymptomatic courses of SARS-CoV-2 infections - and seronegative students.
Brackel et al. <sup>3</sup>	Cross-sectional	RT-PCR (52.8%) Serology (34.8%) CD (38.2%) Suspected (9.0%)	≥12 weeks	89	13(9–15)	Long COVID symptoms are also present in the paediatric population. These include: Fatigue (87%) Dyspnoea (55%) Concentration difficulties (45%) Severe limitations in daily function (36%) Total admitted to the hospital because of long-COVID (18%)
Buonsenso et al. <sup>4</sup> [pre-print]	Cross-sectional	RT-PCR (27.7%) LFT (0.8%) CD (30.6%) Suspected (41%)	≥28 days	510	10.3 ± 3.8	Overall, children had persisting COVID-19 for a mean of 8.2 ±3.9 months. Approximately 95% of children had at least four symptoms. Most frequent symptoms were: Tiredness and weakness (87.1%) Fatigue (80.4%) Headache (78.6%) Tummy pain or cramps (75.9%), Muscle aches and pains (68.4%), Muscle and joint pain (60.6%) Post-exertional malaise (53.7%) A rash (52.4%) Unexplained irritability (51.4%) Dizziness (48%)
Buonsenso et al. <sup>5</sup>	Cross-sectional	RT-PCR (100%)	162.5 ± 113.7 days	129	11 ± 4.4	42.6% presented at least one symptom >60 days after infection. Overall, 35.6 % of patients had 1-2 persisting symptoms, whilst 22.5% reported ≥3 persisting symptoms. Most common symptoms included: Insomnia (18.6%) Nasal congestion/rhinorrhoea (12.4%) Persistent muscle pain (10.1%) Headache (10.1%) Lack of concentration (10.1%)
Chevinsky et al. <sup>6</sup>	Matched cohort study	CD (100%)	[Range: 31–120] days	305 (inpatient) 2,368 (outpatient)	[Range: ≤1- 17]	“Children with COVID-19 were not more likely to experience post-COVID conditions than children without COVID-19” (No quantitative data provided).
Denina et al. <sup>7</sup>	Cohort	RT-PCR OR Serology	“4 months”	25	Median: 7.75 [Range: 0.4–15]	All patients showed a clinical and complete laboratory recovery about a month after discharge, without manifestation of any COVID-19-related sequelae 4 months later.

Source	Study Design	COVID-19 confirmation method.	Follow up duration	# of participants	Age (years)	Findings
Dobkin et al. <sup>8</sup>	Cohort	RT-PCR or “confirmed close household contact”	“5 months”	29	13.1 ± 3.9 [Range: 4-19]	Persistent respiratory symptoms ranged from 1.3 to 6.7 months post-acute infection. 93.1% patients symptomatic Persistent dyspnea present in 96.6% of patients. Cough (51.7%), exercise intolerance (48.3%) and fatigue (13.7%) were also present.
Knoke et al. <sup>9</sup>	Cross-sectional	RT-PCR or positive SARS-Cov-2 antibodies	0-3 months 4-6 months	73 SARS-CoV-2 positive 45 SARS-CoV-2 negative	10.82 ± 3.25	35.6% symptomatic in test-positive 63% asymptomatic in test-negative 11.4% reported respiratory symptoms No significant differences in abnormal pulmonary function
Ludgqvist et al. <sup>10</sup>	Case report	CD	2 months	5	12 [Range: 9-15]	100% CYP mild disease Most common symptoms: fatigue, dyspnoea and chest pain
Miller et al. <sup>11</sup> [pre-print]	Cohort	RT-PCR (100%)	≥28 days	4,678	329 [<2] 2522 [2-11] 1827[12-17] [Range: 5-17]	Persistent symptoms were reported in 1.7% overall, and 4.6% among children with a history of SARS-CoV-2 infection.
Molteni et al. <sup>12</sup> [pre-print]	Matched cohort study	RT-PCR (100%)	≥28 days	1,734 cases 1,734 controls		4.4% of 1,734 children (18 younger children, 59 older children) had symptoms for ≥28 days. Twenty-five of 1,379 children had symptoms for ≥56 days
Nogueira López et al. <sup>13</sup>	Cohort	RT-PCR (25%) Otherwise confirmed COVID-19 contact or CD	Median 52.5 days (IQR: 25–60.5)	8	Median 11.8 (IQR: 9.8-13.9)	Eight (four males, four females) mostly adolescents/preadolescents, classed as having long COVID syndrome. Syndrome characterised by severe headache, persistent low level fever and asthenia (weakness). Symptoms parent reported as disabling in majority. Two out of the eight were SARS-CoV-2 positive, others had positive parvovirus serology test (IgM and IgG), no diagnosis obtained from remaining children.
Osmanov et al. <sup>14</sup>	Cohort	RT-PCR (100%)	268 (233-284) days	518	10.4 [Range: 2days-18years]	Persistent symptoms were present in 24.7% of patients. Most common symptoms: Fatigue (10.6%) Insomnia (5.2%) Disturbed smell (4.7%) Headache (3.5%)
Petersen et al. <sup>15</sup>	Cohort	RT-PCR (100%)	125 ± 18 days [Range: 45-215]	21	[Range: 0-17 years]	30% of 0-17 year olds had persistent symptoms at follow up, with a mean number of 3.5 symptoms. 33, 20, and 15% of participants aged 0-17 year reported mild, moderate and severe symptoms at follow up, respectively.
Radtko et al. <sup>16</sup>	Cohort	Serology (100%)	>4 weeks >12 weeks	Seropositive = 109 Seronegative = 1246	[Range: 6-16 years]	Among seropositive and seronegative 6- to 16-year-old children, 9% versus 10% reported at least one symptom beyond 4 weeks, and 4% versus 2% at least one symptom beyond 12 weeks.
Rusetsky et al. <sup>17</sup>	Cross-sectional	RT-PCR (100%)	60 days	79	12.9	The majority of patients (94.3%) had no subjective olfactory complaints by the end of the first month.

Source	Study Design	COVID-19 confirmation method.	Follow up duration	# of participants	Age (years)	Findings
Sante et al. <sup>18</sup>	Cross-sectional	RT-PCR (100%)	98.5 ± 41.5 days	12 Long-COVID 17 Recovered	10.3 ± 4.5	Persistent symptoms included: Fatigue (41.6%) Chronic Headache (33.3%) Gastrointestinal symptoms (33.3%) Post-exertional malaise (25%) Muscle or Joint pain (25%)
Say et al. <sup>19</sup>	Cohort	“Children who tested positive for SARS- CoV-2”	[Range: 3–6 months]	12	8 [<2] 4 [6-12]	Follow-up data at 3–6 months were available for 151 (88%) of 171 children, of whom 54 (36%) were asymptomatic and 97 (64%) were symptomatic (ie, with mild, moderate, or severe disease) with acute COVID-19. 12 (8%) children had post-acute COVID-19 symptoms, all of whom were symptomatic with acute COVID-19.
Smame et al. <sup>20</sup>	Cohort	RT-PCR (100%)	101 days	30	9.2	At the time of the follow-up visit, 21 (70%) were completely free of any COVID-19-related symptoms, while 9 (30%) had at least one symptom. Patients at the time of the follow-up visit reported prolonged low-grade fever, joint pain, headache, anosmia, ageusia and microhaematuria.
Sterky et al. <sup>21</sup>	Cohort	RT-PCR (100%)	219 [123– 324] days	55	[Range: 0–18 years]	A tenth of the 55 children who were hospitalised due to COVID-19 reported persistent symptoms that were assessed to have a possible association with the SARS-CoV-2 infection more than four months after their acute illness
Zavala et al. <sup>22</sup>	Cohort	RT-PCR	4 weeks	472 case 387 control	10 [Range: 6-13]	67.69% symptomatic in cases 39.79% symptomatic in controls

Data are means ± standard deviations, medians with interquartile ranges (IQR) or [ranges] where appropriate. RT-PCR: Positive Reverse transcription Polymerase chain reaction; LFT: Lateral flow test; CD: clinical diagnosis. Only studies with ≥10 children were included.

**Supplementary Table 2. Reported pre-existing morbidities and problems by SARS-CoV-2 status**

Morbidity/Problem	SARS-CoV-2 Negative		SARS-CoV-2 Positive	
	N	%	N	%
All	3,739	100.0	3,065	100.0
Asthma	464	12.4	323	10.5
Lung disease	7	0.2	9	0.3
Allergy problems	1,137	30.4	946	30.9
Stomach problems	208	5.6	131	4.3
Neurological disease	65	1.7	43	1.4
Physical disability	122	3.3	67	2.2
Learning difficulties	356	9.5	245	8.0
Sleep problems	737	19.7	549	17.9
Eating problems	498	13.3	395	12.9

**Supplementary Table 3. Reweighted percentage of reported symptom(s) at the time of test and at the 3 months questionnaire by SARS-CoV-2 status, overall and stratified by age-group.**

	All participants		Age: 11-14			Age: 15-17		
	SARS-CoV-2 Status Negative	SARS-CoV-2 Status Positive	Reweighted All participants aged 11-14	Reweighted SARS-CoV-2 Status Negative	Reweighted SARS-CoV-2 Status Positive	Reweighted All participants aged 15-17	Reweighted SARS-CoV-2 Status Negative	Reweighted SARS-CoV-2 Status Positive
	%	%	%	%	%	%	%	%
<b>All</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>At time of test</b>								
No reported symptoms	91.8	64.5	79.5	90.7	66.6	79.0	92.7	62.6
1 symptom	1.0	1.9	1.8	1.4	2.3	1.0	0.6	1.6
2 symptoms	1.1	2.9	2.4	1.5	3.5	1.5	0.8	2.4
3 symptoms	1.3	3.8	2.8	1.6	4.2	2.1	1.0	3.4
4 symptoms	1.0	3.9	2.8	1.0	4.9	1.9	1.0	3.0
5+ symptoms	3.9	23.1	10.6	3.8	18.5	14.5	4.0	27.1
<b>Specific symptoms</b>								
Fever	4.0	17.8	9.6	4.5	15.5	11.0	3.6	19.7
Chills	2.4	15.1	7.2	2.3	12.9	9.1	2.5	16.9
Persistent cough	3.8	15.5	7.7	3.8	12.2	10.4	3.8	18.2
Tiredness	3.3	22.2	10.4	3.3	18.6	13.3	3.4	25.2
Shortness of breath	1.5	11.2	3.8	1.2	6.7	7.8	1.7	15.0
Loss of smell	1.5	20.4	8.5	1.5	16.6	11.6	1.5	23.5
Unusually hoarse voice	1.2	4.5	2.1	1.1	3.4	3.3	1.4	5.5
Unusual chest pain	1.5	9.0	3.0	0.6	5.8	6.6	2.2	11.8

Unusual abdominal pain	1.2	4.3	2.6	1.2	4.3	2.6	1.2	4.3
Diarrhoea	1.2	5.4	2.8	1.4	4.4	3.4	1.0	6.2
Headaches	4.8	26.1	14.3	5.3	24.9	14.7	4.4	27.0
Confusion, disorientation or drowsiness	0.9	7.3	2.3	0.6	4.2	5.1	1.1	9.9
Unusual eye-soreness	0.8	5.7	2.2	0.8	3.8	3.8	0.8	7.3
Skipping meals	1.8	11.3	4.5	1.3	8.3	7.6	2.3	13.9
Dizziness or lightheadedness	2.2	14.9	6.2	1.8	11.4	9.5	2.5	17.9
Sore throat	5.4	22.1	12.2	5.9	19.6	13.8	4.9	24.3
Unusual strong muscle pains	1.2	10.6	4.3	1.0	8.0	6.5	1.3	12.8
Earache or ringing in ears	1.0	5.0	2.0	0.5	3.7	3.6	1.5	6.0
Raised welts on skin or swelling	0.1	1.2	0.7	0.1	1.5	0.6	0.2	1.0
Red/purple sores/blisters on feet	0.2	0.7	0.4	0.3	0.6	0.5	0.2	0.8
Other	0.5	2.2	1.4	0.7	2.2	1.1	0.2	2.3
<b>At time of 3-month questionnaire</b>								
No reported symptoms	48.0	35.5	47.5	53.4	40.7	37.9	43.5	31.2
1 symptom	26.8	22.0	25.0	26.3	23.5	24.4	27.3	20.8
2 symptoms	9.7	14.0	10.2	7.7	13.1	12.9	11.3	14.8
3 symptoms	6.0	9.3	5.7	4.3	7.3	9.0	7.4	11.0
4 symptoms	3.4	6.6	4.1	2.9	5.5	5.6	3.9	7.6
5+ symptoms	6.1	12.5	7.6	5.5	10.0	10.3	6.7	14.7
<b>Specific symptoms</b>								
Fever	1.6	1.6	1.1	1.5	0.7	2.0	1.8	2.3
Chills	5.0	8.3	6.3	5.4	7.3	6.7	4.7	9.1
Persistent cough	2.6	3.2	2.7	2.6	2.9	3.0	2.6	3.6
Tiredness	23.2	36.5	22.9	17.1	29.6	34.8	28.3	42.4
Shortness of breath	10.2	21.8	11.8	8.5	15.6	18.6	11.6	27.0
Loss of smell	1.3	13.5	5.6	0.8	11.1	8.0	1.7	15.4
Unusually hoarse voice	1.3	1.8	1.6	1.5	1.6	1.6	1.1	2.1
Unusual chest pain	3.5	6.9	3.7	2.8	4.7	6.2	4.0	8.8
Unusual abdominal pain	2.6	3.5	2.5	1.9	3.2	3.4	3.1	3.8
Diarrhoea	2.0	3.0	2.3	1.8	3.0	2.5	2.1	3.1
Headaches	13.7	22.0	15.1	10.9	19.9	19.5	16.0	23.7

Confusion, disorientation or drowsiness	3.1	6.2	3.7	2.8	4.8	5.2	3.4	7.4
Unusual eye-soreness	3.6	5.5	3.6	3.2	4.0	5.2	3.9	6.8
Skipping meals	7.1	9.2	6.3	5.7	6.9	9.6	8.3	11.2
	7.5	12.7	7.8	6.0	9.9	11.7	8.9	15.2
Dizziness or light-headedness								
Sore throat	7.4	9.3	8.1	6.8	9.7	8.4	7.9	8.9
Unusual strong muscle pains	2.3	5.3	3.0	1.7	4.5	4.3	2.9	6.0
Earache or ringing in ears	4.2	6.2	5.0	4.1	6.1	5.2	4.3	6.3
Raised welts on skin or swelling	0.8	1.4	1.2	1.0	1.5	1.0	0.7	1.3
Red/purple sores/blisters on feet	1.1	0.9	1.1	1.3	0.9	1.0	1.0	1.0
Other	15.7	10.8	14.3	16.8	11.5	12.7	14.8	10.2

**Supplementary Table 4. Reported reasons for undertaking a SARS-CoV-2 test by SARS-CoV-2 status**

Reason	SARS-CoV-2 Negative		SARS-CoV-2 Positive	
	N	%	N	%
All	3,739	100.0	3,065	100.0
I had symptoms	309	8.3	1,084	35.4
I was near someone who tested positive	381	10.2	993	32.4
School testing	2,658	71.1	793	25.9
Other	391	10.5	195	6.4

**Supplementary Table 5. Distribution of participants by reason for undertaking a SARS-CoV-2 test by SARS-CoV-2 status**

	SARS-CoV-2 Negative (%)				SARS-CoV-2 Positive (%)			
	Had symptoms	Near a positive case	School testing	Other	Had symptoms	Near a positive case	School testing	Other
	(N=309)	(N=381)	(N=2,658)	(N=391)	(N=1,084)	(N=993)	(N=793)	(N=195)
Female	60.2	57.5	63.7	65.0	63.8	62.8	64.6	60.0
Age (years)								
11-14	51.5	41.5	43.2	36.6	38.2	44.0	40.9	35.4
15-17	48.5	58.5	56.8	63.4	61.8	56.0	59.1	64.6
Ethnicity								
White	79.6	70.3	75.2	74.7	73.6	74.0	71.3	70.5
Asian/Asian British	13.3	14.4	13.8	14.3	15.7	16.1	17.0	13.3
Mixed	3.6	6.3	5.2	5.9	5.2	4.7	4.9	2.6
Black/African/Caribbean	2.3	6.6	3.6	3.1	2.9	3.4	4.3	5.1
Other	1.3	1.6	1.5	1.5	1.9	1.2	2.4	4.6
Unknown	0	0.8	0.8	0.5	0.8	0.5	0.9	3.1
Index of Multiple Deprivation								
Quintile 1 (most deprived)	20.7	26.8	18.5	25.1	22.8	19.3	20.8	20.0
Quintile 2	21.7	20.2	19.3	21.0	19.2	21.2	21.2	24.1
Quintile 3	20.1	20.7	19.8	16.9	18.5	19.4	17.5	20.0
Quintile 4	17.2	14.7	20.1	19.4	18.7	19.7	19.8	19.0
Quintile 5 (least deprived)	20.4	17.6	22.3	17.7	20.9	20.3	20.7	16.9

**Supplementary Table 6. Goodness of fit criteria for the latent class models**

	<b>Aikaike Information Criterion</b>	<b>Bayesian Information Criterion</b>
1 class	66,456.9	66,743.6
2 classes	58,404.6	58,991.6
3 classes	NC	NC

NC: the model did not converge

**Supplementary Table 7. Characteristics at baseline of CYP assigned to each latent class, by SARS-CoV-2 status**

	<b>SARS-CoV-2 test Negatives</b> (N=3,739)		<b>SARS-CoV-2 test Positives</b> (N=3,065)	
	Class 1 %	Class 2 %	Class 1 %	Class 2 %
All	80.7	19.3	70.4	29.6
<b>Baseline</b>				
Sex				
Male	88.5	11.5	82.4	17.6
Female	79.0	21.0	65.9	34.1
Age (years)				
11-14	86.5	13.5	78.2	21.8
15-17	79.5	20.5	67.7	32.3
Previous physical health				
Very poor/poor	55.6	44.4	60.6	39.4
OK	73.5	26.5	63.0	37.0
Good/v Good	85.8	14.2	74.8	25.2
Previous mental health				
Very poor/poor	61.9	38.1	48.0	52.0
OK	75.9	24.1	64.3	35.7
Good/v Good	88.8	11.2	79.2	20.8



**Supplementary Table 8. Characteristics at 3 months post-test of CYP assigned to each latent class, by SARS-CoV-2 status**

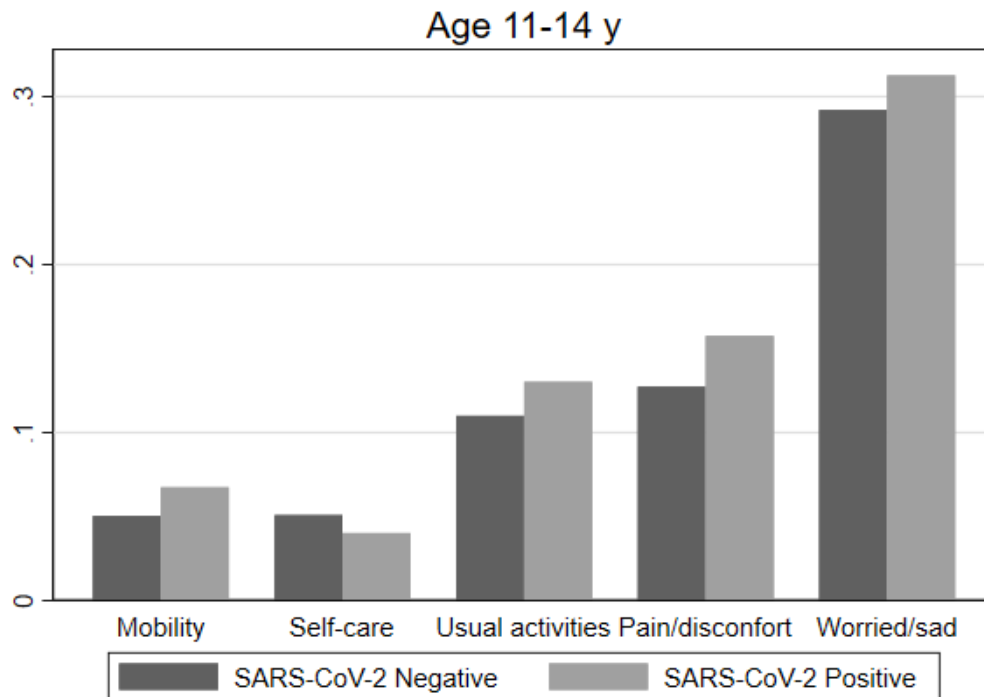
	SARS-CoV-2 test Negatives (N=3,739)		SARS-CoV-2 test Positives (N=3,065)	
	Class 1 %	Class 2 %	Class 1 %	Class 2 %
<b>EQ5DY<sup>1</sup>:</b>				
Some/lots of mobility problems	4.1	11.9	4.0	16.9
Some/lots of self-care problems	3.6	10.3	2.4	9.0
Some/lots of problems with usual activities	9.5	31.1	9.1	34.4
Some/lots of pain/discomfort	8.9	41.8	8.6	40.1
A bit/very worried, sad/unhappy	32.9	69.4	31.4	64.9
<b>SDQ Total Difficulties<sup>2</sup></b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	10 (6,14)	16 (11,20)	9 (6, 14)	15 (10, 19)
<b>SDQ Emotional Symptoms</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	3 (1,5)	6 (4,7)	3 (1,5)	5 (3,7)
<b>SDQ Conduct Problems</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	1 (0,2)	2 (1,3)	1 (0,2)	2 (1,3)
<b>SDQ Hyperactivity/Inattention</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	4 (2,5)	5 (3,7)	3 (2,5)	5 (3,7)
<b>SDQ Peer Relationship Problem</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	2 (1,3)	3 (1,4)	2 (1,3)	2 (1,4)
<b>SWEMBS</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	21.5 (19.3,24.1)	18.6 (16.9,21.5)	21.5 (19.3,25.0)	19.3 (17.4,22.4)
Mean (SD)	21.9 (4.4)	19.1 (3.7)	22.1 (4.3)	20.0 (3.9)
<b>Chalder fatigue scale</b>				
Median (25 <sup>th</sup> , 75 <sup>th</sup> )	11 (10,14)	16 (12,20)	11 (11,14)	17 (13,21)
Mean (SD)	11.6 (4.5)	16.4 (6.0)	11.8 (4.2)	17.0 (5.7)

<sup>1</sup>Some/a lot of problems with mobility (e.g. walking about), self-care (e.g. washing/dressing), or doing usual activities (e.g. going to school); some/a lot of pain/discomfort or a bit/very worried, sad, or unhappy.

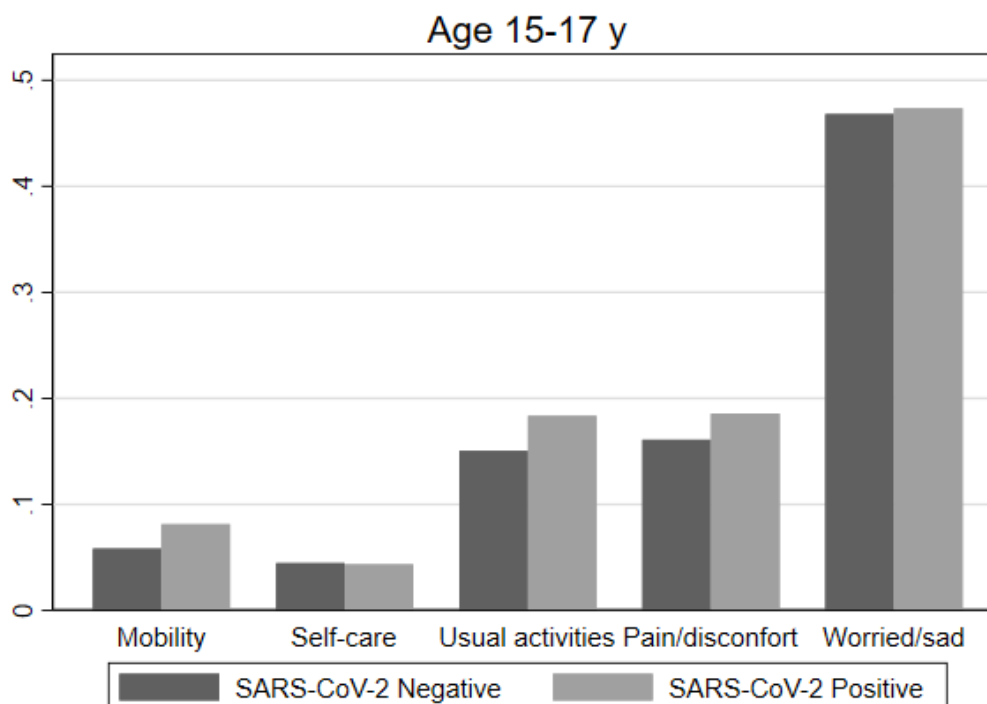
<sup>2</sup>Calculation of the SDQ Total Score excludes the Prosocial scale in accordance with SDQ Scoring guidance. SD: standard deviation

**Supplementary Figure 1. Percentages of participants reporting experiencing some or a lot of problems at the time of the 3-month questionnaire by SARS-CoV-2 status: (a) 11-14 years, (b) 15-17 years.**

(a)



(b)

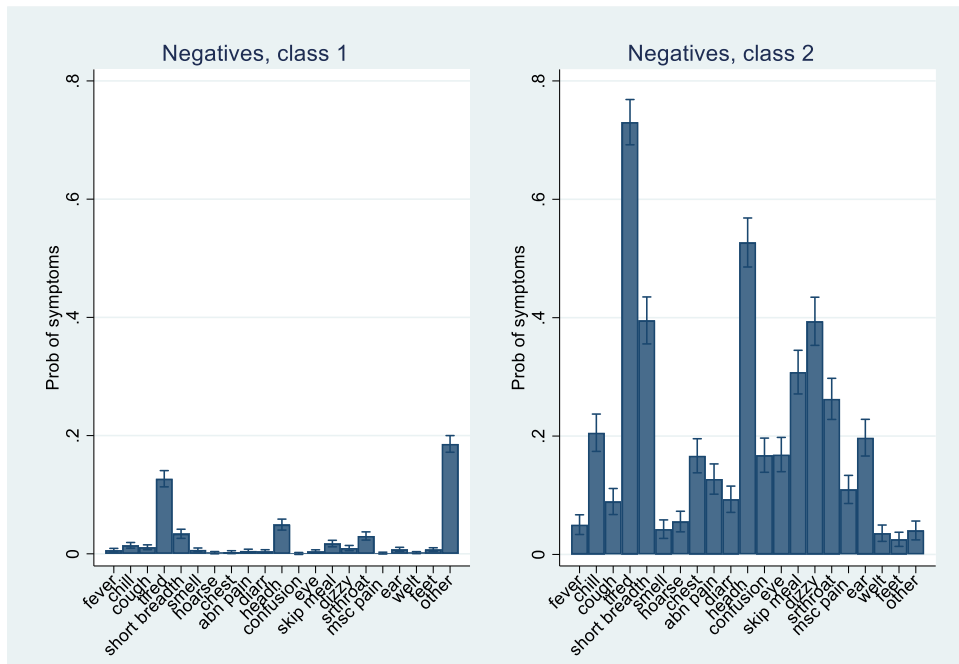


**Supplementary Figure 2. (a) Latent classes of symptoms at 3 months in SARS-CoV-2 test positive CYP; (b) Latent classes of symptoms at 3 months in SARS-CoV-2 test negative CYP.**

**(a) Positives**

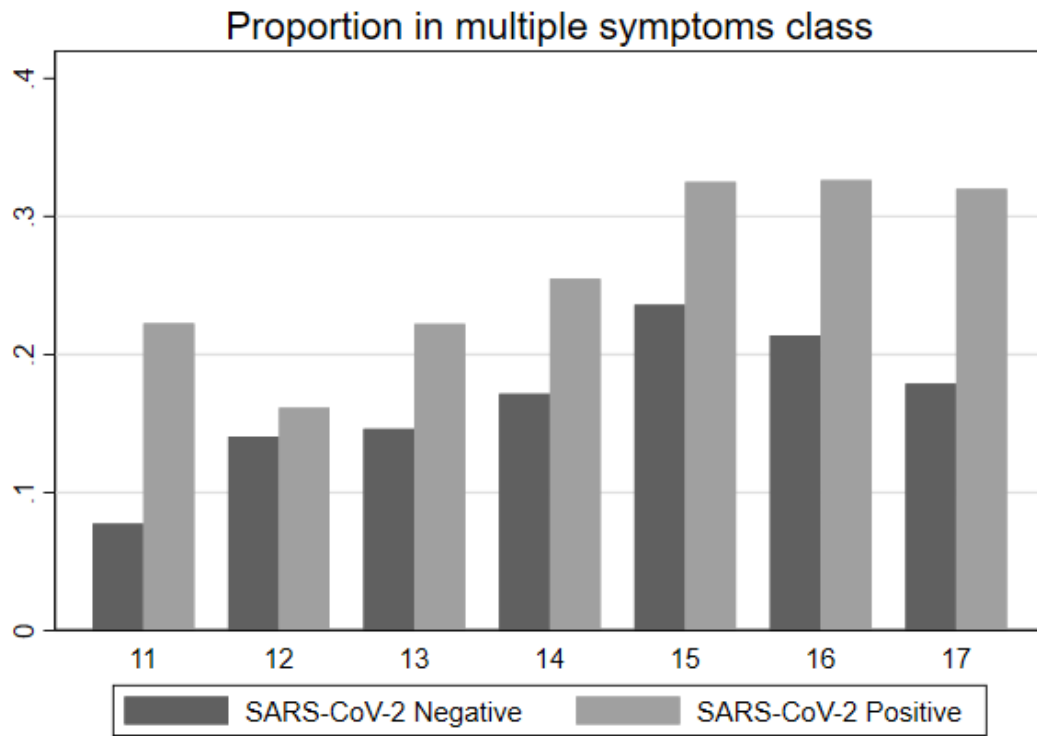


**(b) Negatives**



BIC for 1-class solution for the two test groups: 66,743.600; BIC for 2-class solution for the two test groups: 58,991.627; no convergence for the 3-class model. See further details in Supplementary Table 6. Graphs show probability (95% confidence intervals) of symptoms. Note: X-axis labels refer to: fever; chill; persistent cough; unusual fatigue or tiredness; shortness of breath; loss of smell or taste; unusually hoarse voice; chest pain or tightness; abdominal pain; diarrhoea; headache; confusion, disorientation or drowsiness; eye-soreness or discomfort; skipping meals; sore throat; strong muscle pains; earache or tinnitus; raised, red, itchy welts; sores or blisters on feet; other important symptoms, respectively.

**Supplementary Figure 3. Proportion of participants assigned to the multiple symptoms class by age and SARS-CoV-2 status**



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