

Supporting Information

Supplementary methods and results

This appendix was part of the submitted manuscript and has been peer reviewed. It is posted as supplied by the authors.

Appendix to: Woldegiorgis M, Cadby G, Ngeh S, et al. Long COVID in a highly vaccinated but largely unexposed Australian population following the 2022 SARS-CoV-2 Omicron wave: a cross-sectional survey. *Med J Aust* 2024; doi: 10.5694/mja2.52256.

1. The long COVID survey text

Dear Name DD/MM/YYYY

The WA Department of Health is conducting a brief survey to assess the possible longer-term health impacts of COVID-19. We would greatly appreciate your assistance. Please click below for more information, and to accept or decline our invitation to participate in this survey:

[Link]

The WA Department of Health is conducting a brief survey to assess the possible longer-term impacts of COVID-19. The survey should take only 2-5 minutes to complete.

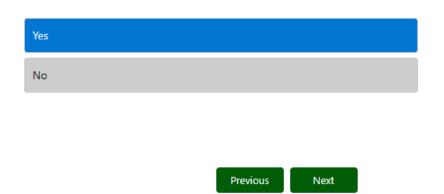
We are contacting you because you previously indicated a willingness to participate in COVID-19 research and we would appreciate your assistance. The results of this research will be used by the Department of Health to plan for future health care needs resulting from the COVID pandemic. Participation is completely voluntary. If you decide to participate, we will connect your survey responses to the demographic information you provided to us at the time of your COVID-19 diagnosis, your COVID vaccination and test records, and determine if you were admitted to hospital. Any information you provide will only be shared in such a way that you cannot be identified.

Please click "Next" to proceed to the next page.

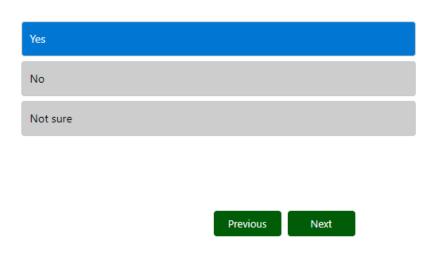
Next

* A detailed Participant Information Sheet can be downloaded by clicking on this link.

If you have questions regarding the survey or any difficulty completing the survey, you can call the WA Department of Health on 6376 0530 Monday-Friday from 8AM - 4PM. Are you willing to participate in this brief online survey? (Click "Next" after selecting your response).



* Do you currently have any new or ongoing symptoms or health problems that you believe are related to your COVID-19 illness?

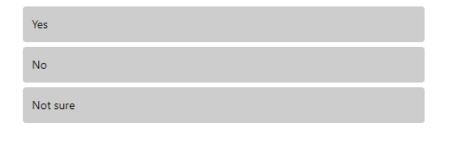


If answered no to above

* Thank you for taking a few moments to tell us about your current health status.

We would like to learn about your health status before and after your COVID-19 diagnosis. This brief survey will take about 2 minutes.

Before you tested positive for COVID-19, did you have any significant or long-standing health issues?

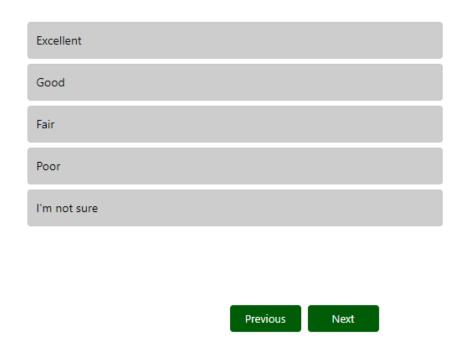


Please indicate the type(s) of health issues you had prior to being diagnosed with COVID-19:

Please indicate the type(s	of health is	ssues you had	l prior to be	ing diagnosed	with COVID-19:

Heart problems
Lung problems
Asthma
Kidney disease
Gastrointestinal problems such as diarrhoea or stomach pain
Diabetes
Obesity
Neurologic problems such as sleep problems, headache, depression, or anxiety
Immune system problems
Cancer
Other
Previous Next

* How would y	ou describe	your overall	health status now?
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If you were working and/or studying before your COVID diagnosis, have you been activities after your illness?	able to continue these
Yes, I was able to fully return to work/study within a month of my COVID illness	
Yes, but I needed more than a month before I was able to fully return to work/studying	
Yes, but I have had to reduce the number of hours I work/study	
No, I have not returned to work/study	
I was not working or studying at the time I developed my COVID illness	
I'm not sure	
Thank you for helping the WA Health better understand the longer term impact o Please click "Finish Survey" below, then click "Next" to submit your answers.	f the COVID-19 pandemic.
Finish survey	
Previous Next	

We would like to learn more about the ongoing symptoms or health conditions you may be experiencing due to your COVID illness.				
Are you currently experiencing any of the symptoms listed below?				
Tiredness or fatigue that interferes with daily life				
Yes				
No				
Unsure				
Headache				
Yes				
No				
Unsure				

rever	
Yes	
No	
Unsure	
Difficulty breathing or shortness of breath	
Yes	
No	
Unsure	

Cough	
Yes	
No	
Unsure	
Chest pain	
Chest pain Yes	
Yes	

Fast-beating or pounding heart (heart palpitations)	
Yes	
No	
Unsure	
Difficulty thinking or concentration ("brain fog")	
Yes	
No	
Unsure	

Sleep problems	
Yes	
No	
Unsure	
Dizziness when you stand up (light-headedness)	
Ver	
Yes	
No	
Unsure	
Memory loss or confusion	
Yes	
No	
Unsure	

Yes	
No	
Unsure	
Change in smell or taste	
Yes	
No	
Unsure	
Low mood or not enjoying anything	
Yes	
No	
Unsure	

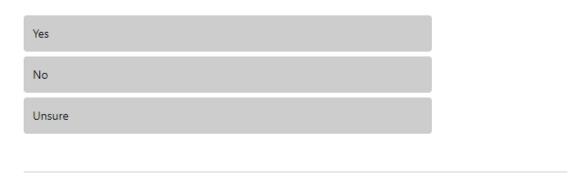
Pins-and-needles feelings

Yes	
No	
Unsure	
Diarrhoea	
Yes	
No	
Unsure	
Stomach pain	
Yes	
No	
Unsure	

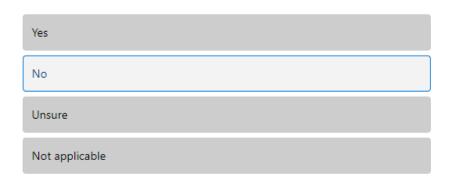
Increased worry or anxiety

Kasn	
Yes	
No	
Unsure	
Joint or muscle pain	
Yes	
No	
Unsure	
Loss of appetite or eating less than usual	
Yes	
No	
Unsure	

Nausea or vomiting

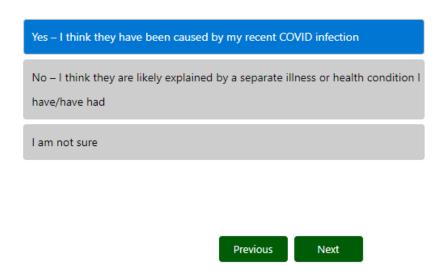


Females only - changes in your menstrual cycle

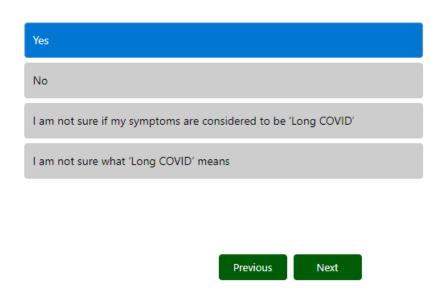


Previous Next

 \bigstar Do you think your current symptoms are the result of your recent COVID infection?



*Do you think your current symptoms are consistent with the condition called "Long COVID"?



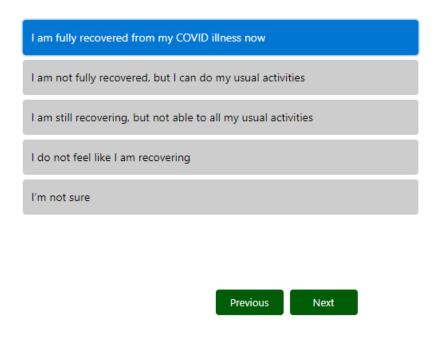
★ In the last month, have you seen	n a GP because of ongoing symptoms following	your COVID illness?
Yes		
No		
Not sure		
	Previous Next	
* In the last month, have you been your COVID illness?	to an emergency department because of ongoin	ng symptoms following
Yes		
No		
Not sure		
	Previous Next	

n the last month, have you been admitted to hospital because of ongoing sy liness?	mptoms following your CO
Yes	
No	
Not sure	
Previous Next	
f you were working and/or studying before your COVID diagnosis, have you activities after your illness? Yes, I was able to fully return to work/study within a month of my COVID illness	been able to continue these
Yes, I was able to fully return to work/study within a month of my COVID	been able to continue these
Yes, I was able to fully return to work/study within a month of my COVID illness Yes, but I needed more than a month before I was able to fully return to	been able to continue these
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Yes, I was able to fully return to work/study within a month of my COVID illness Yes, but I needed more than a month before I was able to fully return to work/studying Yes, but I have had to reduce the number of hours I work/study	been able to continue these

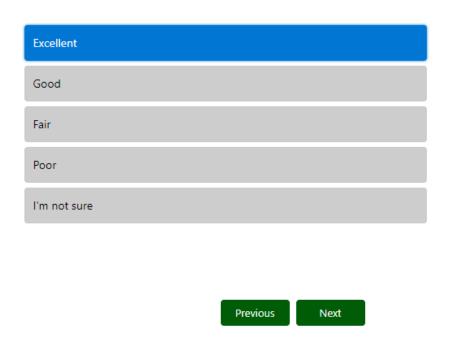
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Next

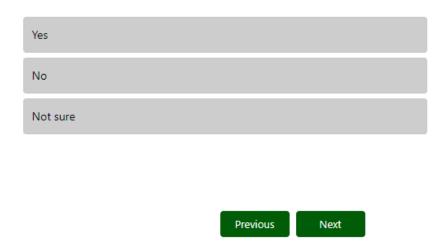
* How would you describe the outcome of your COVID illness at the present time?



* How would you describe your overall health status now?



* Before you tested positive for COVID-19, did you have any significant or chronic health issues?



Please indicate the type(s) of health issues you had prior to being diagnosed with COVID-19

Select a	II that apply
	Heart problems
	Lung problems
	Asthma
	Kidney disease
	Gastrointestinal problems such as diarrhoea or stomach pain
	Diabetes
	Obesity
	Neurologic problems such as sleep problems, headache, depression, or anxiety
	Immune system problems
	Cancer
	Other
	Previous Next

* We would like to send you another brief survey three months from today to find out if you have fully recovered from your COVID illness or if you are still having symptoms. Would that be okay with you?
Yes
No
* Thank you for helping the WA Health better understand the longer-term impact of the COVID-19 pandemic. Please click "Finish Survey" below, then click "Next" to submit your answers.
If you have concerns about any ongoing symptoms, or need information on how to manage them, you should speak with your GP or call health direct at 1800 022 222.
Finish Survey
Previous Next
Previous Next
Thank you for your time, you may now close the webpage.

Table 1. Sampling weights applied to the long COVID online survey in Western Australia, 2022

Age group (years)/ gender	Population: all adults diagnosed with SARS-CoV-2			Mainha /image	Weight adjusted to total number of	Weighted
	during the study period*	Respondents	Probability	Weight (inverse of probability)	respondents	respondents
18-29	, ,					
Women	7,553	911	0.121	8.29	1.44	1,309
Men	6,569	535	0.081	12.28	2.13	1,138
30-39						
Women	7,303	1,149	0.157	6.36	1.10	1,265
Men	6,865	750	0.109	9.15	1.59	1,189
40-49						
Women	6,589	1,249	0.190	5.28	0.91	1,142
Men	6,054	905	0.149	6.69	1.16	1,049
50-59						
Women	6,273	1,624	0.259	3.86	0.67	1,087
Men	5,901	1,157	0.196	5.10	0.88	1,022
60-69						
Women	3,986	1,155	0.290	3.45	0.60	691
Men	3,878	996	0.257	3.89	0.67	672
70+						
Women	3,386	640	0.189	5.29	0.92	587
Men	3,159	626	0.198	5.05	0.87	547
Total	67,516	11,697				11,697

Reference population: All 70,876 adults diagnosed during 16 July - 3 August 2022 apart from 3,360 people for whom information on gender was not available.

Respondents: Persons who completed the long COVID survey

Probability= respondents/population

Weight =1/probability

Weight adjusted to number of respondents = weight X respondents/population Weighted respondents= weight adjusted to number of respondents X respondents

Table 2. Numbers of symptoms reported by adult Western Australian residents with long COVID who responded to our long COVID survey, 14 October -1 November 2022*

Number of		Proportion of
symptoms	Respondents	respondents
0	32	1.5%
1	173	8.1%
2	216	10.1%
3	211	9.9%
4	210	9.9%
5	199	9.3%
6	189	8.9%
7	159	7.5%
8	133	6.2%
9	141	6.6%
10	117	5.5%
11	97	4.6%
12	84	3.9%
13	49	2.3%
14	39	1.8%
15	28	1.3%
16	20	0.9%
17	18	0.8%
18	9	0.4%
19	3	0.1%
20	1	< 0.1%
21	2	0.1%

^{*} Weighted number with long COVID: 2130 of 11,697 respondents (18.2%).

Table~3.~Symptoms~reported~by~adult~Western~Australian~residents~with~long~COVID~who~responded~to~our~long~COVID~survey,~14~October-1~November~2022*

Symptom	Respo	ondents	Yes proportion (95% CI)	
Long COVID symptom	No	Yes		
Fever	2008	122	5.7% (4.8–6.8%)	
Rash	1966	164	7.7% (6.6–8.9%)	
Nausea or vomiting	1911	219	10.3% (9.0–11.7%)	
Diarrhoea	1852	278	13.1% (11.7–14.6%)	
Chest pain	1828	302	14.2% (12.7–15.8%)	
Stomach pain	1801	329	15.4% (13.9–17.1%)	
Loss of appetite or eating less than usual	1781	349	16.4% (14.8–18.1%)	
Pins-and-needles feelings	1659	471	22.1% (20.4–23.9%)	
Fast-beating or pounding heart (heart palpitations)	1603	527	24.7% (22.9–26.7%)	
Change in smell or taste	1587	542	25.5% (23.6–27.4%)	
Headache	1464	666	31.3% (29.3–33.3%)	
Memory loss or confusion	1438	692	32.5% (30.5–34.6%)	
Female participants only - Changes in menstrual cycle	487	237	32.7% (29.2–36.5%)	
Dizziness when standing up (light headedness)	1432	698	32.8% (30.8–34.8%)	
Increased worry or anxiety	1357	773	36.3% (34.2–38.4%)	
Low mood or not enjoying anything	1353	777	36.5% (34.4–38.6%)	
Difficulty breathing or shortness of breath	1273	857	40.2% (38.1–42.4%)	
Joint or muscle pain	1246	884	41.5% (39.4–43.6%)	
Cough	1146	984	46.2% (44.1–48.4%)	
Sleep problems	1135	995	46.7% (44.5–48.9%)	
Difficulty thinking or concentrating ("brain fog")	862	1267	59.5% (57.4–61.6%)	
Tiredness or fatigue that interferes with daily life	626	1504	70.6% (68.6–72.6%)	

CI = confidence interval.

^{*} Total number of respondents with long COVID: 2130 people; for changes in menstrual cycle: 723 women.

Table 4. Self-reported health of adult Western Australian residents who responded to our long COVID survey, 14 October – 1 November 2022, by long COVID status

	Long COVID No long COVID				
Self-reported health 3 months after positive SARS-CoV-2 result	Respondents	Proportion (95% CI)	Respondents	Proportion (95% CI)	Total respondents
	31	1.4%	2175	22.7%	2206
Excellent		(1.0-2.1%)		(21.8-23.7%)	
	799	37.5%	5685	59.4%	6484
Good		(35.5–39.7%)		(58.4–60.5%)	
	1064	50.0%	1441	15.1%	2505
Fair		(47.8–52.1%)		(14.3-15.9%)	
	205	9.6%	130	1.4%	335
Poor		(8.4–11.0%)		(1.1–1.6%)	
	31	1.5%	136	1.4%	167
Not sure		(1.0-2.2%)		(1.2-1.7%)	
Total	2130		9567		11697

CI = confidence interval.

Table 5. Return to work or study by adult Western Australian residents who responded to our long COVID survey, 14 October – 1 November 2022, by long COVID status

	Long COVID		No long COVID		
Work /study status three months after COVID diagnosis	Respondents	Proportion (95% CI)	Respondents	Proportion (95% CI)	Total respondents
Have not returned to work/study	48	2.7% (2.0–3.5%)	66	0.8% (0.6–1.1%)	114
Had to reduce the number of hours of work/study	270	15.2% (13.5–17.1%)	151	1.9% (1.6–2.3%)	421
Needed more than a month before able to fully return to work/studying	307	17.3% (15.5–19.1%)	374	4.7% (4.2–5.2%)	681
Able to fully return to work/study within a month of COVID-19 illness	1154	64.9% (62.5–67.1%)	7382	92.6% (91.9–93.2%)	8536
Total	1779		7973		9752

CI = confidence interval.