

Supplementary Online Content

Perlis RH, Santillana M, Ognyanova K, et al. Prevalence and correlates of long COVID symptoms among US adults. *JAMA Netw Open*. 2022;5(10):e2238804. doi:10.1001/jamanetworkopen.2022.38804

eTable 1. Point Prevalences of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, and Among All Surveyed US Adults, Weighted to Reflect US Adult Population

eFigure 1. Logistic Regression Model for Development of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, With Age by Decade

eTable 2. Long COVID-19 Symptom Frequencies by Predominant Variant at Time of Initial Illness

eTable 3. Characteristics of Individuals Who Tested Positive for COVID-19 by Antigen Test or PCR at Least Two Months Prior to Survey Date, Who Did or Did Not Experience Long COVID-19 Symptoms by More Stringent Definition

eFigure 2. Logistic Regression Model for Development of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, With Age by Decade, Limited to Individuals With Index Infection January 2021 or Later

eFigure 3. Logistic Regression Model for Development of More Stringently Defined Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR

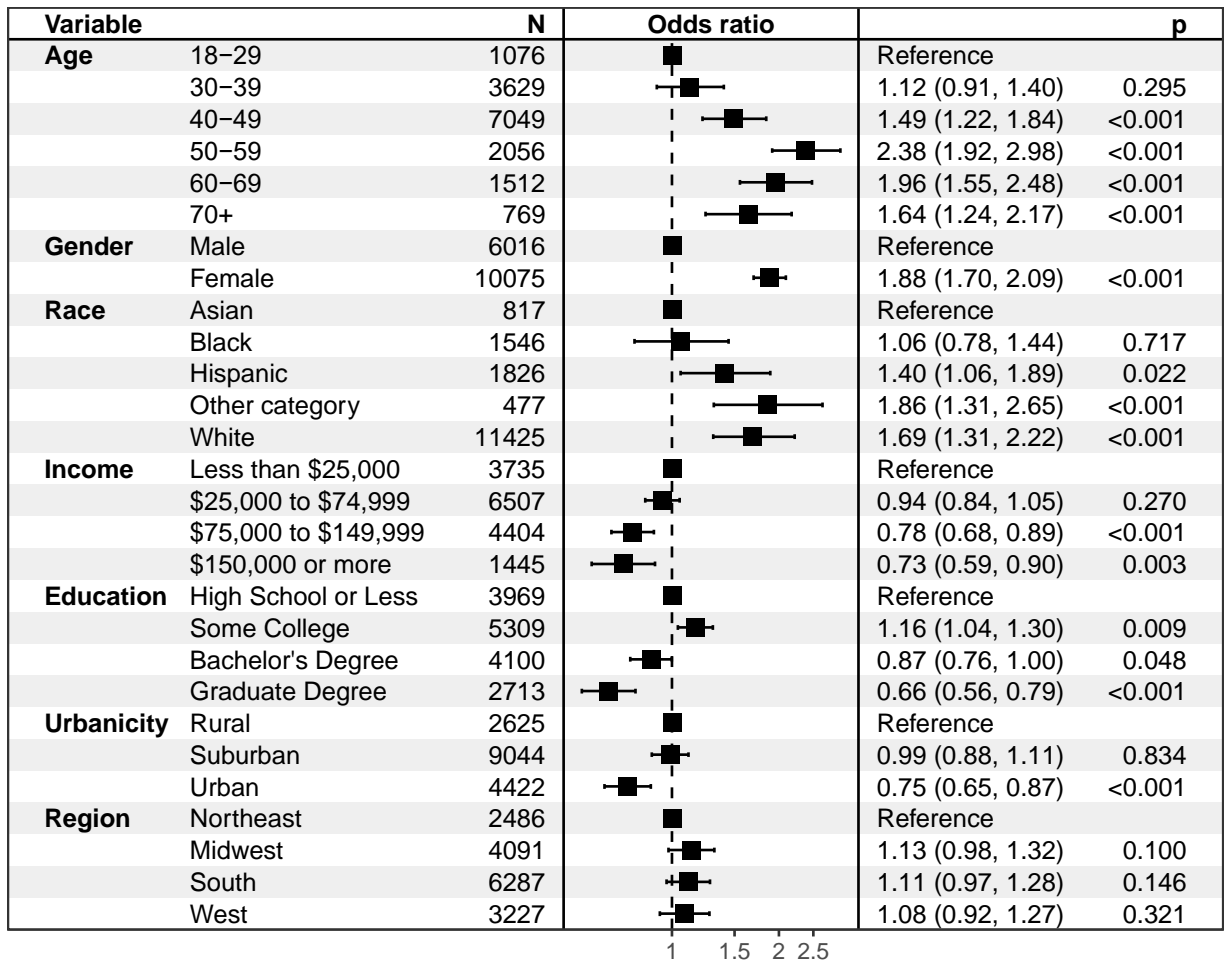
eFigure 4. Logistic Regression Model for Development of Long COVID-19 by More Stringent Definition Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, Including Predominant Variant and Vaccination Status

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Point Prevalences of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, and Among All Surveyed US Adults, Weighted to Reflect US Adult Population

	Proportion of <i>COVID positive</i> US adults			Proportion of all US adults		
	estimate	[95% CI]	estimate	[95% CI]
Overall	13.9%	13.3%	14.6%	1.7%	1.6%	1.7%
Gender						
Male	10.2%	9.3%	11.1%	1.3%	1.2%	1.4%
Female	17.9%	17.0%	18.8%	2.0%	1.9%	2.1%
Age						
18-29	10.2%	8.3%	12.4%	1.4%	1.1%	1.7%
30-39	10.8%	9.8%	12.1%	1.6%	1.4%	1.8%
40-49	12.6%	11.6%	13.6%	1.8%	1.7%	1.9%
50-59	20.2%	18.2%	22.4%	2.2%	2.0%	2.5%
60-69	18.3%	16.1%	20.7%	1.5%	1.3%	1.7%
70+	14.3%	11.6%	17.4%	1.0%	0.8%	1.2%
Race and Ethnicity						
Asian	7.5%	5.7%	10.0%	0.7%	0.5%	0.9%
Black	9.7%	8.2%	11.5%	1.0%	0.9%	1.2%
Hispanic	12.6%	10.8%	14.5%	2.0%	1.7%	2.4%
White	15.5%	14.7%	16.3%	1.8%	1.7%	1.9%
Other	15.3%	12.0%	19.2%	1.7%	1.3%	2.1%

eFigure 1. Logistic Regression Model for Development of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, With Age by Decade



eTable 2. Long COVID-19 Symptom Frequencies by Predominant Variant at Time of Initial Illness

Supplemental Table. Long COVID symptoms, by predominant variant

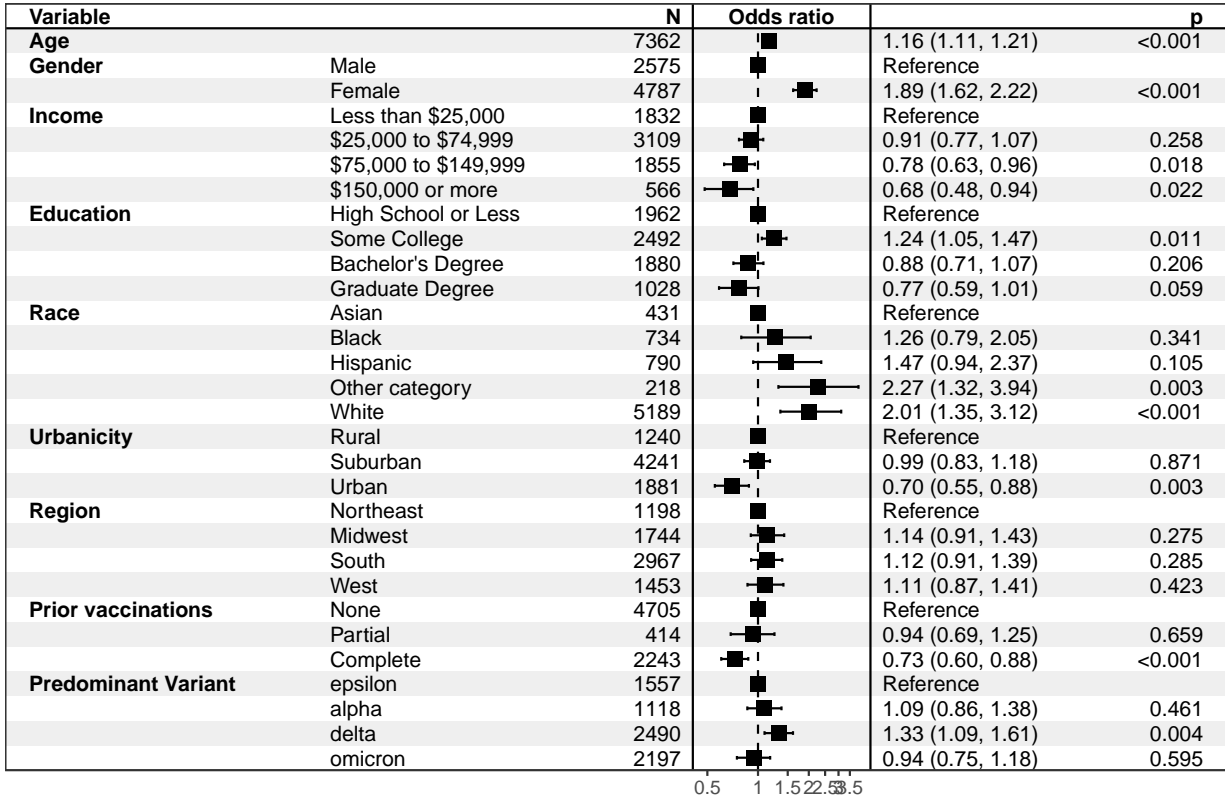
	alpha (N=147)	ancestral (N=1344)	delta (N=416)	epsilon (N=206)	omicron (N=246)	Total (N=2359)	p value
Shortness of breath	58 (39.5%)	554 (41.2%)	149 (35.8%)	74 (35.9%)	102 (41.5%)	937 (39.7%)	0.243
Exercise intolerance	37 (25.2%)	387 (28.8%)	129 (31.0%)	60 (29.1%)	72 (29.3%)	685 (29.0%)	0.755
Fatigue	78 (53.1%)	708 (52.7%)	214 (51.4%)	92 (44.7%)	140 (56.9%)	1232 (52.2%)	0.128
Headache	49 (33.3%)	457 (34.0%)	131 (31.5%)	68 (33.0%)	88 (35.8%)	793 (33.6%)	0.829
Loss of smell	59 (40.1%)	590 (43.9%)	210 (50.5%)	89 (43.2%)	83 (33.7%)	1031 (43.7%)	< 0.001
Brain fog	51 (34.7%)	548 (40.8%)	165 (39.7%)	85 (41.3%)	103 (41.9%)	952 (40.4%)	0.655
Poor memory	33 (22.4%)	381 (28.3%)	114 (27.4%)	66 (32.0%)	70 (28.5%)	664 (28.1%)	0.399
(Either cognitive symptom)	58 (39.5%)	623 (46.4%)	184 (44.2%)	97 (47.1%)	117 (47.6%)	1079 (45.7%)	0.493
Dizziness	33 (22.4%)	269 (20.0%)	79 (19.0%)	44 (21.4%)	60 (24.4%)	485 (20.6%)	0.480
Depressed mood	34 (23.1%)	319 (23.7%)	94 (22.6%)	49 (23.8%)	54 (22.0%)	550 (23.3%)	0.970
Anxious mood	35 (23.8%)	400 (29.8%)	120 (28.8%)	62 (30.1%)	61 (24.8%)	678 (28.7%)	0.344
Sleep disruption	40 (27.2%)	409 (30.4%)	125 (30.0%)	59 (28.6%)	75 (30.5%)	708 (30.0%)	0.928
							0.805
Mean (SD) symptom count	3.449 (2.758)	3.737 (2.755)	3.678 (2.708)	3.631 (2.859)	3.691 (2.627)	3.694 (2.742)	

eTable 3. Characteristics of Individuals Who Tested Positive for COVID-19 by Antigen Test or PCR at Least Two Months Prior to Survey Date, Who Did or Did Not Experience Long COVID-19 Symptoms by More Stringent Definition

	No Long COVID (N=14086)	Long COVID (N=2005)	Total (N=16091)	p value
Gender				< 0.001
Male	5528 (39.2%)	488 (24.3%)	6016 (37.4%)	
Female	8558 (60.8%)	1517 (75.7%)	10075 (62.6%)	
Age (years)				< 0.001
Mean (SD)	39.99 (15.19)	44.17 (15.07)	40.51 (15.23)	
Education				< 0.001
High School or Less	3440 (24.4%)	529 (26.4%)	3969 (24.7%)	
Some College	4480 (31.8%)	829 (41.3%)	5309 (33.0%)	
Bachelor's Degree	3656 (26.0%)	444 (22.1%)	4100 (25.5%)	
Graduate Degree	2510 (17.8%)	203 (10.1%)	2713 (16.9%)	
Income				< 0.001
Less than \$25,000	3174 (22.5%)	561 (28.0%)	3735 (23.2%)	
\$25,000 to \$74,999	5602 (39.8%)	905 (45.1%)	6507 (40.4%)	
\$75,000 to \$149,999	3995 (28.4%)	409 (20.4%)	4404 (27.4%)	
\$150,000 or more	1315 (9.3%)	130 (6.5%)	1445 (9.0%)	
Race				< 0.001
White	9879 (70.1%)	1546 (77.1%)	11425 (71.0%)	
Black	1631 (11.6%)	195 (9.7%)	1826 (11.3%)	
Hispanic	1408 (10.0%)	138 (6.9%)	1546 (9.6%)	
Asian	764 (5.4%)	53 (2.6%)	817 (5.1%)	
Other	404 (2.9%)	73 (3.6%)	477 (3.0%)	
Urbanicity				< 0.001
rural	2219 (15.8%)	406 (20.2%)	2625 (16.3%)	
suburban	7833 (55.6%)	1211 (60.4%)	9044 (56.2%)	
urban	4034 (28.6%)	388 (19.4%)	4422 (27.5%)	
Region				< 0.001
Northeast	2224 (15.8%)	262 (13.1%)	2486 (15.4%)	
Midwest	3533 (25.1%)	558 (27.8%)	4091 (25.4%)	
South	5468 (38.8%)	819 (40.8%)	6287 (39.1%)	
West	2861 (20.3%)	366 (18.3%)	3227 (20.1%)	
Vaccination status				< 0.001
Unvaccinated	11692 (83.0%)	1742 (86.9%)	13434 (83.5%)	
Partial	362 (2.6%)	52 (2.6%)	414 (2.6%)	
Complete	2032 (14.4%)	211 (10.5%)	2243 (13.9%)	
Predominant variant				< 0.001

	No Long COVID (N=14086)	Long COVID (N=2005)	Total (N=16091)	p value
alpha	992 (7.0%)	126 (6.3%)	1118 (6.9%)	
ancestral	7590 (53.9%)	1139 (56.8%)	8729 (54.2%)	
delta	2140 (15.2%)	350 (17.5%)	2490 (15.5%)	
epsilon	1386 (9.8%)	171 (8.5%)	1557 (9.7%)	
omicron	1978 (14.0%)	219 (10.9%)	2197 (13.7%)	

eFigure 2. Logistic Regression Model for Development of Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, With Age by Decade, Limited to Individuals With Index Infection January 2021 or Later



eFigure 3. Logistic Regression Model for Development of More Stringently Defined Long COVID-19 Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR

Variable	N	Odds ratio		p
Age	16091	■	1.18 (1.14, 1.21)	<0.001
Gender			Reference	
Male	6016	■		
Female	10075	■	1.83 (1.64, 2.05)	<0.001
Race			Reference	
Asian	817	■		
Black	1546	■	1.07 (0.77, 1.51)	0.688
Hispanic	1826	■	1.48 (1.08, 2.05)	0.017
Other category	477	■	2.01 (1.38, 2.95)	<0.001
White	11425	■	1.74 (1.31, 2.35)	<0.001
Income			Reference	
Less than \$25,000	3735	■		
\$25,000 to \$74,999	6507	■	0.91 (0.81, 1.02)	0.106
\$75,000 to \$149,999	4404	■	0.70 (0.61, 0.81)	<0.001
\$150,000 or more	1445	■	0.77 (0.62, 0.95)	0.016
Education			Reference	
High School or Less	3969	■		
Some College	5309	■	1.19 (1.05, 1.34)	0.005
Bachelor's Degree	4100	■	0.92 (0.80, 1.06)	0.274
Graduate Degree	2713	■	0.70 (0.58, 0.84)	<0.001
Urbanicity			Reference	
Rural	2625	■		
Suburban	9044	■	0.96 (0.85, 1.09)	0.536
Urban	4422	■	0.73 (0.62, 0.86)	<0.001
Region			Reference	
Northeast	2486	■		
Midwest	4091	■	1.16 (0.99, 1.36)	0.074
South	6287	■	1.14 (0.98, 1.33)	0.087
West	3227	■	1.11 (0.94, 1.32)	0.226

1 1.5 22.5

eFigure 4. Logistic Regression Model for Development of Long COVID-19 by More Stringent Definition Among Individuals Testing Positive for COVID-19 by Antigen Test or PCR, Including Predominant Variant and Vaccination Status

