Post-Acute Symptoms After COVID-19, New York City, 2022

Since the start of the pandemic, the U.S. has recorded more than 100 million confirmed cases and 1 million deaths from COVID-19. Communities of color, older adults, people living with disabilities, and people living in poverty have been disproportionately impacted due to long-standing structural racism and other forms of oppression that put them at higher risk of infection and severe disease.[1] The public health burden of COVID-19 also includes longer-term health outcomes; people who survive infection with the virus that causes COVID-19 frequently report post-acute symptoms lasting one month or longer and may develop Long COVID. An infection-associated chronic condition characterized by symptoms lasting three months or longer, Long COVID can include diagnoses such as dysautonomia (problems regulating involuntary body processes like blood pressure) or myalgic encephalomyelitis (sometimes referred to as chronic fatigue syndrome), and often results in significant disruption to physical, mental, economic, and social well-being.[2] Prevalence estimates of long-term health outcomes following COVID-19 infection vary. A national

survey in 2022 estimated that 6% of U.S. adults experienced symptoms lasting three months or longer that they did not have prior to COVID-19.[3] The same year, 14% of adult New Yorkers reported long-term physical or mental health effects which they thought were due to having had COVID-19. While these estimates vary, they indicate that symptoms following acute COVID-19 are common and are a significant public health concern.

To better understand experiences of post-acute symptoms, the New York City (NYC) Health Department conducted the COVID-19 Experiences Survey in 2022.[4] Adults with prior confirmed or suspected COVID-19 were asked about symptoms that developed or persisted after acute illness and lasted one month or longer. Some respondents reported many symptoms at different levels of severity, while others reported few symptoms, only mild symptoms, or none at all. The results provide insight into how post-acute symptoms relate to health care seeking, social and demographic factors, disability, and mental health.

Definitions: Long COVID is an infection-associated chronic condition characterized by symptoms or diagnosable conditions present for at least three months after SARS-CoV-2 infection.[5] **Post-acute symptoms** are symptoms lasting one month or longer, which may or may not resolve between 4 and 12 weeks. The COVID-19 Experiences Survey included a series of questions to measure 38 different post-acute symptoms: "Please tell us about any health issues that you developed after your initial illness with COVID-19 or that lasted for more than a month, and how severe they were. Did you develop [symptom] after your initial illness with COVID-19, and if so, was it mild, moderate, or severe? Mild symptoms are those which were noticeable but did not cause much trouble, while severe symptoms required seeking serious medical assistance, like going to an urgent care center or being admitted to the hospital."

In this analysis, respondents were categorized as follows:
No symptoms: No symptoms
**Mild symptom(s):** ≥ 1 Mild symptoms, no moderate or severe symptoms
Moderate symptom(s): ≥ 1 moderate symptom, no severe symptoms
Severe symptom(s): ≥ 1 severe symptom

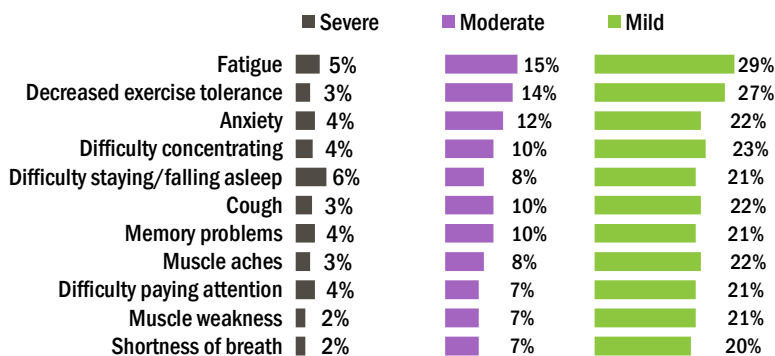### Post-acute symptoms were common among adult New Yorkers

- In 2022, most adults with prior COVID-19 (80%) had experienced at least one symptom lasting one month or longer. Half (50%) reported at least one moderate or severe symptom.
- Among the most common symptoms were fatigue and decreased exercise tolerance, which were each reported by around half of all adults with prior COVID-19.

Prevalence of any post-acute symptoms after COVID-19 among adults by most severe symptom reported, New York City, 2022

Category	Percentage
Severe symptom(s)	21%
Moderate symptom(s)	29%
Mild symptom(s)	30%
No symptoms	21%
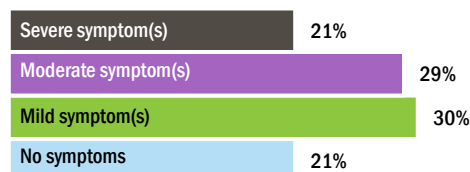
Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Prevalence of the most commonly reported post-acute symptoms following acute COVID-19 among adults in New York City, 2022

■ Severe   ■ Moderate   ■ Mild

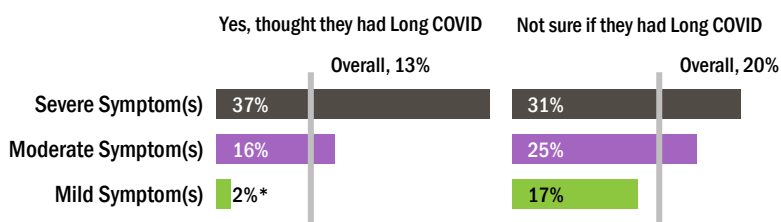| Symptom	Severe	Moderate	Mild
Fatigue	5%	15%	29%
Decreased exercise tolerance	3%	14%	27%
Anxiety	4%	12%	22%
Difficulty concentrating	4%	10%	23%
Difficulty staying/falling asleep	6%	8%	21%
Cough	3%	10%	22%
Memory problems	4%	10%	21%
Muscle aches	3%	8%	22%
Difficulty paying attention	4%	7%	21%
Muscle weakness	2%	7%	21%
Shortness of breath	2%	7%	20%

Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Data Source: The **COVID-19 Experiences Survey** was a cross-sectional survey conducted in November and December 2022. Participants in a probability-based panel of adult New Yorkers (NYC Health Panel) were invited to take the survey if they had confirmed or suspected COVID-19; 2,081 people completed the survey online or by phone in English, Spanish, Russian, Simplified Chinese, or Traditional Chinese. Estimates are weighted to the NYC adult residential population per the 2019 American Community Survey. Estimates with an asterisk (*) should be interpreted with caution due to large Relative Standard Error.

Despite the prevalence of post-acute symptoms, uncertainty about Long COVID was also common

- Overall, 13% of adults who reported post-acute symptoms thought they had Long COVID. People with more severe symptoms were more likely to believe they had Long COVID.
- Many people were unsure when asked if they thought they had Long COVID, including 25% of people with moderate symptom(s) and 31% of people with severe symptom(s).

Proportion of adult New Yorkers with post-acute symptoms who believed they had Long COVID, by most severe symptom(s)

Yes, thought they had Long COVID — Overall, 13%
Not sure if they had Long COVID — Overall, 20%

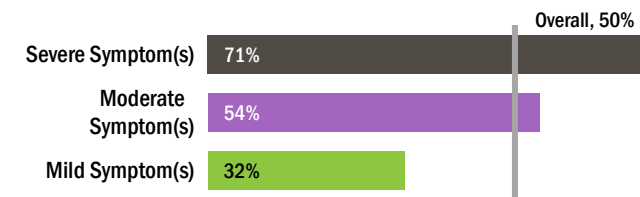|	Yes, thought they had Long COVID	Not sure if they had Long COVID
Severe Symptom(s)	37%	31%
Moderate Symptom(s)	16%	25%
Mild Symptom(s)	2%*	17%

Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Health care seeking was common among those with post-acute symptoms after COVID-19, but discussions about Long COVID with health care providers were rare
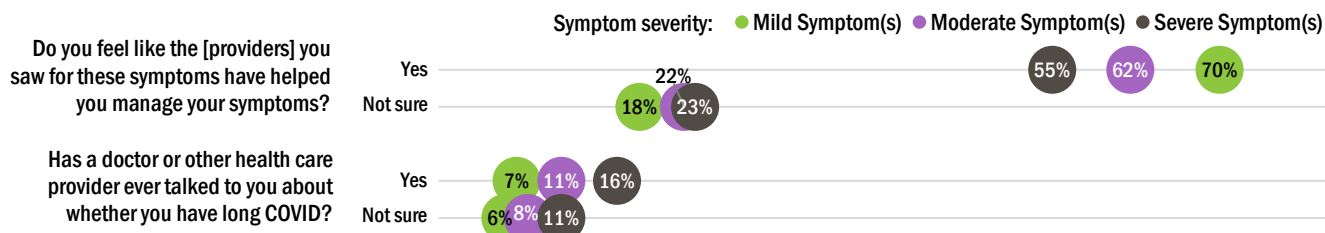
- Overall, half (50%) of NYC adults who reported post-acute symptoms saw a health care provider for help, including people with only mild to moderate symptoms.
- Most who saw a provider said that the provider helped manage symptoms. Most people who reported post-acute symptoms, even severe symptoms, said health care providers had not talked to them about Long COVID.

Proportion of adult New Yorkers with post-acute symptoms who sought help from a health care provider, by most severe symptom(s)

Overall, 50%

Severe Symptom(s)	71%
Moderate Symptom(s)	54%
Mild Symptom(s)	32%

Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Most people who sought help for post-acute symptoms said that a health care provider helped manage their symptoms, but the provider had not discussed with them whether they had Long COVID

Symptom severity: ● Mild Symptom(s) ● Moderate Symptom(s) ● Severe Symptom(s)

Do you feel like the [providers] you saw for these symptoms have helped you manage your symptoms?
- Yes: 55% (Severe), 62% (Moderate), 70% (Mild)
- Not sure: 18% (Mild), 23% (Severe), 22%

Has a doctor or other health care provider ever talked to you about whether you have long COVID?
- Yes: 7% (Mild), 11% (Moderate), 16% (Severe)
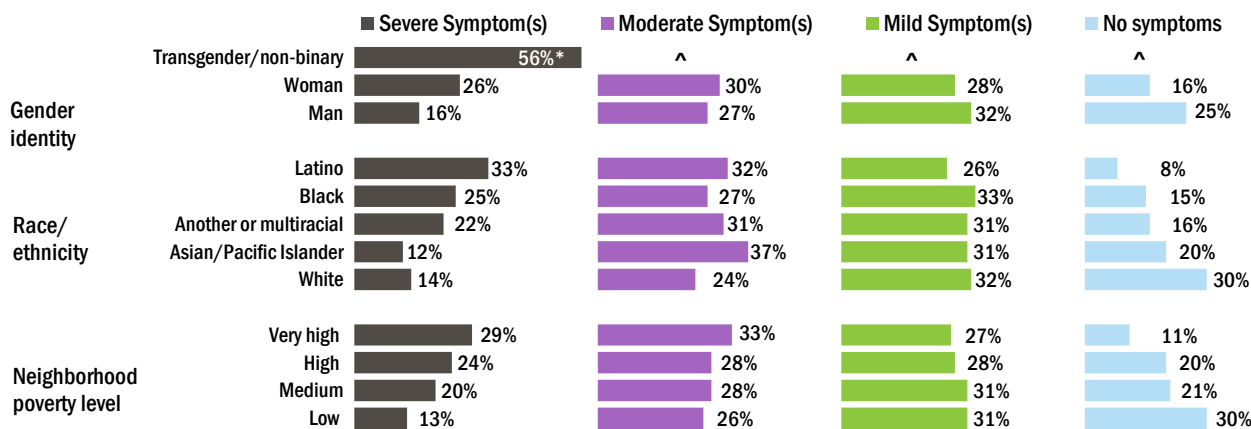- Not sure: 6% (Mild), 8% (Moderate), 11% (Severe)

Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Inequities in the prevalence and severity of post-acute symptoms after COVID-19 were observed across race/ethnicity, gender, and neighborhood poverty

- The prevalence of mild symptoms was similar across socio-demographic groups. Moderate symptoms were more prevalent among Latino and Asian/Pacific Islander adults compared with white adults, and people living in high poverty neighborhoods compared with people in low poverty neighborhoods. Severe symptoms were more prevalent among women and transgender or non-binary adults compared with men, among Latino and Black adults compared with white adults, and among people living in very high and high poverty neighborhoods compared with low poverty neighborhoods.

Prevalence and severity of post-acute symptoms after COVID-19 by selected socio-demographic characteristics

■ Severe Symptom(s)   ■ Moderate Symptom(s)   ■ Mild Symptom(s)   ■ No symptoms

	Category	Severe Symptom(s)	Moderate Symptom(s)	Mild Symptom(s)	No symptoms
Gender identity	Transgender/non-binary	56%*	^	^	^
	Woman	26%	30%	28%	16%
	Man	16%	27%	32%	25%
Race/ ethnicity	Latino	33%	32%	26%	8%
	Black	25%	27%	33%	15%
	Another or multiracial	22%	31%	31%	16%
	Asian/Pacific Islander	12%	37%	31%	20%
	White	14%	24%	32%	30%
Neighborhood poverty level	Very high	29%	33%	27%	11%
	High	24%	28%	28%	20%
	Medium	20%	28%	31%	21%
	Low	13%	26%	31%	30%

Asian/Pacific Islander, white, Black, and Another or multiracial race categories exclude Latino ethnicity. Latino includes Hispanic or Latino of any race. Neighborhood poverty is the percentage of people in a ZIP code living below the Federal Poverty Threshold: Low (<10%), Medium (10-20%), High (20-30%), Very high (≥30%)
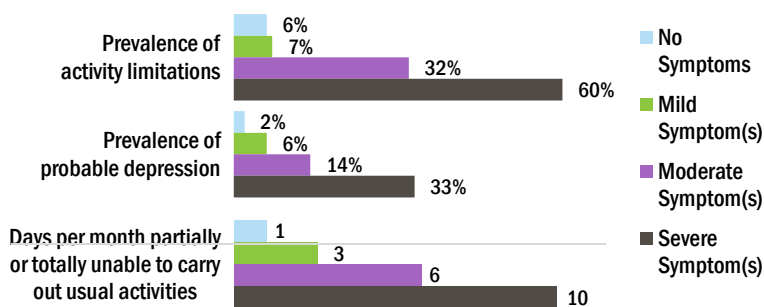* Estimate should be interpreted with caution due to large Relative Standard Error.   ^ Data are suppressed due to imprecise and unreliable estimates.
Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Increasing symptom severity was associated with activity limitations and depression

- People who reported moderate and severe symptoms were more likely to report activity limitations. For example, those with at least one severe symptom were more likely to report activity limitations compared with those who reported no post-acute symptoms (60% vs. 6%).

- People with at least one severe post-acute symptom reported 10 days of reduced ability or complete inability to carry out usual activities or work in the past month, compared with six days for moderate symptom(s), three days for mild symptom(s), and one day for no symptoms.

- One in three adults (33%) with at least one severe post-acute symptom after COVID-19 had probable depression, higher than those reporting only mild symptoms (6%) or no symptoms (2%).

Activity limitations and probable depression among adults with prior COVID-19, by most severe post-acute symptom, New York City, 2022

■ No Symptoms   ■ Mild Symptom(s)   ■ Moderate Symptom(s)   ■ Severe Symptom(s)

	No Symptoms	Mild Symptom(s)	Moderate Symptom(s)	Severe Symptom(s)
Prevalence of activity limitations	6%	7%	32%	60%
Prevalence of probable depression	2%	6%	14%	33%
Days per month partially or totally unable to carry out usual activities	1	3	6	10

Source: NYC Health Panel COVID-19 Experiences Survey, November-December 2022

Definitions: **Race/ethnicity:** Latino includes people who reported Hispanic or Latino origin, regardless of reported race. Black, white, Asian/Pacific Islander, and Another or multiracial race categories exclude those who identified as Latino.
Neighborhood poverty: Neighborhood poverty is defined as the percentage of the population in a ZIP code living below the Federal Poverty Threshold (FPT), which was $29,950 for a household of 4 in 2022. "Low poverty" is <10% population below FPT; "Medium poverty" is 10-<20% below FPT; "High Poverty" is 20-<30% below FPT; "Very high poverty" is ≥30% below FPT.
Activity limitation: Activity limitation is defined as moderate, severe, or extreme limitation reported on one or more of the 12-item World Health Organization Disability Assessment Schedule 2.0.[6]
Probable depression: Probable depression is defined as a score of 3 or more on the Patient Health Questionnaire 2 (PHQ2).

Implications

Most New Yorkers with prior COVID-19 experienced post-acute symptoms, but many were unsure whether they had Long COVID and few said that a doctor had discussed it with them. This points to a real need for education and awareness among the general public, healthcare providers, and public health professionals about the long-term impacts of COVID-19.

Those with moderate or severe symptoms reported activity limitations, which may result in social, economic, and mental health difficulties. Black and Latino New Yorkers, women, transgender adults, and those living in low-income neighborhoods were most likely to report severe symptoms, reflecting the disproportionate impact of the ongoing pandemic in these communities. While post-acute symptoms may resolve within 12 weeks, many people will go on to develop Long COVID and need access to health information, clinical care, and supportive services which are accessible to people with mobility and activity limitations. To address inequities in awareness about the long-term health impacts of COVID-19 and the importance of preventing new infections, the NYC Health Department partners with community and faith-based organizations to serve as trusted, credible messengers and provide tailored and culturally-resonant public health outreach to NYC communities. Public Health Corps programs address the health and social needs of public housing residents, reduce racial and ethnic inequities in COVID-19 and influenza immunization, and raise awareness of Long COVID and its impact. The NYC Health Department's Center for Population Health Data Science monitors the prevalence, impact, and awareness of the long-term health effects of COVID-19 through surveillance and research, including the Long-term Outcomes of New Yorkers with COVID-19 Study, a longitudinal cohort study on the factors related to prevalence, severity, and recovery from Long COVID. A comprehensive long-term response to the COVID-19 pandemic requires investment in COVID-19 prevention, surveillance of long-term health outcomes, engagement with health care providers and community members, health system capacity building, and support services for people experiencing the long-term physical, mental, social, and economic impacts of COVID-19 infection.

Limitations

The COVID-19 Experiences Survey did not include a case definition for Long COVID or a COVID-negative comparison group, limiting the attribution of reported symptoms to COVID-19 infection. The definition of symptom severity based on need for healthcare rather than functional impairment may impact the validity of findings among those who experience barriers to care or choose not to access healthcare services.

References:
1. Duncan DT, Kawachi I, Morse SS, eds. *The Social Epidemiology of the COVID-19 Pandemic*. Oxford University Press; 2024.
2. Davis HE, McCorkell L, Vogel JM, Topol EJ. Long COVID: major findings, mechanisms and recommendations. *Nat Rev Microbiol*. 2023;21(3):133-146.
3. Ford ND. Long COVID and significant activity limitation among adults, by age — United States, June 1–13, 2022, to June 7–19, 2023. *MMWR Morb Mortal Wkly Rep*. 2023;72.
4. Seligson AL, Alroy KA, Sanderson M, et al. Adapting survey data collection to respond to the COVID-19 pandemic: experiences from a local health department. *Am J Public Health*. 2021;111(12):2176-2185.
5. National Academies of Sciences, Engineering, and Medicine. 2024. *A Long COVID definition: A chronic, systemic disease state with profound consequences.* Washington, DC: The National Academies Press. https://doi.org/10.17226/27768
6. Ustun TB, Kostanjesek N, Chatterji S, Rehm J, eds. *Measuring Health and Disability: Manual for WHO Disability Assessment Schedule (WHODAS 2.0)*. World Health Organization. 2010:88.

Health equity is attainment of the highest level of health and well-being for all people. Not all New Yorkers have the same opportunities to live a healthy life. Achieving health equity requires focused and ongoing efforts to address historical and contemporary injustices such as discrimination based on social position (e.g., class, immigration status) or social identities (e.g., race, gender, sexual orientation). For more information, visit the Centers for Disease Control and Prevention's Health Equity page.

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Post-Acute Symptoms After COVID-19, New York City, 2022

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Data Source

COVID-19 Experiences Survey, November-December 2022. The COVID-19 Experiences Survey was a cross-sectional survey conducted in November and December 2022. Participants in a probability-based panel of adult New Yorkers (NYC Health Panel) were invited to take the survey if they had confirmed or suspected COVID-19; 2,081 people completed the survey online or by phone in English, Spanish, Russian, Simplified Chinese, or Traditional Chinese. Estimates are weighted to the NYC adult residential population per the 2019 American Community Survey.

Table 1. Prevalence of ever experiencing long-term effects^ due to COVID-19, 2022

Source: Community Health Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Long-term Health Effects Related to COVID-19 (Among all adults)			
Physical Health	12.72	11.59	13.95
Mental Health	6.56	5.76	7.47
Physical and/or Mental Health	14.29	13.10	15.56

95% Confidence Intervals (CIs) are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Bold p-values are significant at the 0.05 level.

^ Long-term health effects due to COVID-19 was defined as the proportion of adults responding "Yes" to either version of the question: "Have you experienced any long-term [physical/emotional or mental] health effects that you think might be related to having had COVID-19?"

Table 2. Prevalence of post-acute symptoms following COVID-19 by severity among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Most severe symptom reported			
No symptoms	20.79	18.29	23.53
Most severe symptom(s): Mild	29.79	26.90	32.86
Most severe symptom(s): Moderate	28.51	25.64	31.56
Most severe symptom(s): Severe	20.91	18.34	23.74

Table 3. Prevalence of self-labeling with Long COVID among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
Do you believe you have or have had long COVID? Yes					
Most severe symptom(s): Mild	1.83	*	1.00	3.32	ref
Most severe symptom(s): Moderate	15.90		11.75	21.17	**< 0.001**
Most severe symptom(s): Severe	36.69		29.77	44.20	**< 0.001**
Overall	13.13		10.97	15.65	
Do you believe you have or have had long COVID? No					
Most severe symptom(s): Mild	80.73		75.75	84.89	ref
Most severe symptom(s): Moderate	59.15		52.80	65.20	**< 0.001**
Most severe symptom(s): Severe	31.82		25.78	38.54	**< 0.001**
Overall	67.36		64.12	70.44	
Do you believe you have or have had long COVID? Don't know					
Most severe symptom(s): Mild	17.44		13.40	22.37	ref
Most severe symptom(s): Moderate	24.95		19.65	31.12	**0.043**
Most severe symptom(s): Severe	31.49		25.02	38.76	**0.001**
Overall	19.51		16.95	22.35	

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.
Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 4. Prevalence of post-acute cardiopulmonary symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval
Cough				
None	64.43		61.18	67.54
Mild	22.11		19.51	24.93
Moderate	10.07		8.12	12.42
Severe	3.40		2.29	5.01
Shortness of breath				
None	70.16		67.01	73.12
Mild	19.95		17.48	22.68
Moderate	7.46		5.70	9.72
Severe	2.43		1.59	3.69
Decreased exercise tolerance				
None	55.24		51.95	58.49
Mild	27.14		24.34	30.14
Moderate	14.42		11.99	17.24
Severe	3.20		2.36	4.33
Wheezing				
None	82.48		79.90	84.80
Mild	12.40		10.41	14.71
Moderate	4.13		3.02	5.62
Severe	0.99		0.56	1.74
Chest Pain				
None	83.09		80.26	85.59
Mild	11.55		9.45	14.04
Moderate	4.94		3.58	6.79
Severe	0.42	*	0.19	0.93
Palpitations				
None	77.39		74.38	80.14
Mild	15.81		13.38	18.57
Moderate	6.03		4.64	7.81
Severe	0.77	*	0.41	1.47

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Table 5. Prevalence of post-acute neurocognitive symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Loss of taste			
None	83.32	80.91	85.48
Mild	10.02	8.34	12.01
Moderate	3.95	2.94	5.28
Severe	2.71	1.85	3.96
Loss of smell			
None	83.13	80.68	85.33
Mild	10.50	8.70	12.63
Moderate	3.70	2.76	4.95
Severe	2.66	1.84	3.83
Difficulty concentrating on an activity or work			
None	63.50	60.28	66.60
Mild	23.27	20.57	26.21
Moderate	9.72	7.98	11.79
Severe	3.51	2.54	4.85
Problems with memory			
None	65.52	62.34	68.58
Mild	21.34	18.83	24.07
Moderate	9.54	7.69	11.78
Severe	3.60	2.47	5.22
Difficulty remembering the right word or name to use when speaking			
None	69.69	66.56	72.65
Mild	19.04	16.56	21.79
Moderate	8.50	6.79	10.60
Severe	2.77	1.92	3.99
Dizziness/vertigo			
None	78.07	75.34	80.57
Mild	15.88	13.69	18.36
Moderate	5.09	3.89	6.63
Severe	0.96	0.58	1.59
Numbness/tingling			
None	81.73	79.17	84.04
Mild	12.35	10.39	14.63
Moderate	4.98	3.79	6.52
Severe	0.94	0.57	1.54
Lack of dreams/dreaming			
None	86.50	84.04	88.64
Mild	7.90	6.30	9.86
Moderate	4.70	3.36	6.52
Severe	0.90	0.52	1.56
Ringing in your ears			
None	82.71	79.84	85.25
Mild	12.43	10.30	14.93
Moderate	3.68	2.41	5.59
Severe	1.18	0.67	2.06

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Table 6. Prevalence of post-acute musculoskeletal symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval
Decreased range of motion				
None	84.96		82.48	87.15
Mild	10.31		8.57	12.36
Moderate	4.26		2.97	6.06
Severe	0.47	*	0.26	0.85
Joint problems such as joint pain, redness, swelling or stiffness				
None	74.33		71.37	77.09
Mild	16.66		14.30	19.32
Moderate	6.53		5.19	8.19
Severe	2.47		1.62	3.75
Muscle weakness				
None	70.10		66.96	73.06
Mild	20.98		18.31	23.91
Moderate	6.69		5.32	8.39
Severe	2.23		1.42	3.50
Muscle aches				
None	67.36		64.16	70.41
Mild	21.61		18.89	24.59
Moderate	8.07		6.52	9.95
Severe	2.96		2.03	4.30
Chills				
None	83.41		80.64	85.85
Mild	11.28		9.19	13.78
Moderate	4.52		3.29	6.17
Severe	0.79		0.44	1.42

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Table 7. Prevalence of post-acute gastrointestinal/genitourinary symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source: COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval
Diarrhea				
None	84.77		82.22	87.02
Mild	11.02		9.15	13.22
Moderate	3.66		2.48	5.38
Severe	0.55	*	0.26	1.13
Constipation				
None	85.98		83.28	88.30
Mild	8.73		7.06	10.75
Moderate	4.27		2.80	6.47
Severe	1.02	*	0.52	1.99
Nausea/Vomiting				
None	90.50		88.18	92.41
Mild	7.46		5.74	9.65
Moderate	1.83		1.13	2.95
Severe	0.20	*	0.07	0.62
Abdominal pain				
None	86.66		83.88	89.02
Mild	9.94		7.84	12.52
Moderate	3.06		2.03	4.58
Severe	0.35	*	0.14	0.85
Incontinence or frequent urination				
None	82.66		79.72	85.25
Mild	11.11		9.02	13.60
Moderate	4.56		3.17	6.52
Severe	1.67		0.96	2.89
Nighttime urination				
None	80.80		77.92	83.39
Mild	12.54		10.39	15.06
Moderate	4.43		3.23	6.04
Severe	2.23		1.35	3.64

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Table 8. Prevalence of post-acute psychiatric symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Anxiety			
None	61.39	58.11	64.57
Mild	22.46	19.75	25.43
Moderate	12.02	9.99	14.41
Severe	4.13	3.02	5.62
Difficulty falling or staying asleep			
None	64.36	61.22	67.38
Mild	20.99	18.55	23.67
Moderate	8.25	6.75	10.05
Severe	6.39	4.84	8.40
Depression			
None	70.93	67.81	73.86
Mild	16.51	14.15	19.17
Moderate	8.48	6.91	10.37
Severe	4.08	2.82	5.88
Difficulty paying attention			
None	68.06	64.89	71.08
Mild	20.77	18.15	23.66
Moderate	7.24	5.80	9.00
Severe	3.92	2.74	5.59

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Table 9. Prevalence of post-acute general symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval
Fatigue				
None	50.77		47.51	54.02
Mild	29.46		26.60	32.49
Moderate	14.73		12.41	17.40
Severe	5.04		3.85	6.58
Weight loss				
None	87.35		85.08	89.31
Mild	7.95		6.47	9.74
Moderate	4.25		3.03	5.93
Severe	0.45	*	0.21	0.96
Weight gain				
None	79.23		76.45	81.76
Mild	13.01		11.03	15.28
Moderate	6.09		4.57	8.07
Severe	1.68		1.06	2.65
Rashes				
None	91.65		89.72	93.24
Mild	5.76		4.39	7.52
Moderate	2.01		1.35	2.98
Severe	0.58	*	0.32	1.05
Appetite changes				
None	77.83		74.84	80.56
Mild	14.67		12.42	17.25
Moderate	6.19		4.60	8.28
Severe	1.32		0.79	2.17
Hair loss thinning, or change in texture				
None	78.93		76.02	81.57
Mild	12.15		10.18	14.44
Moderate	6.46		4.75	8.75
Severe	2.45		1.76	3.40
Sexual dysfunction				
None	87.16		84.71	89.26
Mild	7.95		6.24	10.08
Moderate	3.30		2.36	4.59
Severe	1.59		0.91	2.75
Menstrual changes				
None	79.90		75.77	83.48
Mild	10.64		8.29	13.56
Moderate	6.74		4.22	10.60
Severe	2.72		1.74	4.22

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Table 10. Prevalence of post-acute symptoms by severity and race/ethnicity among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
No Symptoms					
White, Non-Latino (Reference)	30.30		26.26	34.67	ref
Black, Non-Latino	15.19		9.60	23.22	**< 0.001**
Hispanic/Latino	8.09		5.52	11.70	**< 0.001**
Asian/Pacific Islander Non-Latino	19.78		14.49	26.41	**0.005**
Other/Multi-Racial Non-Latino	15.80	*	8.02	28.77	**0.010**
Most severe symptom(s): Mild					
White, Non-Latino (Reference)	31.57		27.23	36.25	ref
Black, Non-Latino	33.46		25.45	42.55	0.703
Hispanic/Latino	26.37		20.84	32.75	0.173
Asian/Pacific Islander Non-Latino	31.44		24.69	39.08	0.977
Other/Multi-Racial Non-Latino	30.90	*	18.11	47.49	0.934
Most severe symptom(s): Moderate					
White, Non-Latino (Reference)	24.20		20.56	28.26	ref
Black, Non-Latino	26.61		19.15	35.69	0.606
Hispanic/Latino	32.44		26.80	38.64	**0.023**
Asian/Pacific Islander Non-Latino	36.51		27.60	46.45	**0.019**
Other/Multi-Racial Non-Latino	31.14	*	17.99	48.24	0.395
Most severe symptom(s): Severe					
White, Non-Latino (Reference)	13.93		11.13	17.30	ref
Black, Non-Latino	24.74		17.67	33.48	**0.013**
Hispanic/Latino	33.10		26.99	39.85	**< 0.001**
Asian/Pacific Islander Non-Latino	12.27		8.05	18.26	0.583
Other/Multi-Racial Non-Latino	22.16	*	11.56	38.28	0.241

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 11. Prevalence of post-acute symptoms by severity and gender among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
No Symptoms				
Man	24.96	21.08	29.29	ref
Woman	15.97	13.44	18.86	**< 0.001**
Transgender, non-binary, or another gender identify not listed	^			
Most severe symptom(s): Mild				
Man	31.74	27.25	36.59	ref
Woman	28.38	24.80	32.26	0.272
Transgender, non-binary, or another gender identify not listed	^			
Most severe symptom(s): Moderate				
Man	27.45	23.22	32.11	ref
Woman	30.15	26.37	34.23	0.373
Transgender, non-binary, or another gender identify not listed	^			
Most severe symptom(s): Severe				
Man	15.86	12.32	20.18	ref
Woman	25.50	22.05	29.28	**< 0.001**
Transgender, non-binary, or another gender identify not listed	55.69 *	23.62	83.62	**0.025**

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

^ Unreliable estimate. Data suppressed.

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 12. Prevalence of post-acute symptoms by severity and neighborhood poverty among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
No Symptoms				
<10% below FPT (low poverty neighborhood)	29.73	23.23	37.17	ref
10% to <20% below FPT (medium poverty neighborhood)	20.79	17.22	24.88	**0.028**
20% to <30% below FPT (high poverty neighborhood)	20.47	15.04	27.24	0.051
≥30% below FPT (very high poverty neighborhood)	10.53	7.33	14.90	**< 0.001**
Most severe symptom(s): Mild				
<10% below FPT (low poverty neighborhood)	31.16	25.33	37.65	ref
10% to <20% below FPT (medium poverty neighborhood)	31.46	26.79	36.54	0.939
20% to <30% below FPT (high poverty neighborhood)	27.77	21.87	34.57	0.455
≥30% below FPT (very high poverty neighborhood)	27.44	20.94	35.07	0.439
Most severe symptom(s): Moderate				
<10% below FPT (low poverty neighborhood)	25.86	20.51	32.05	ref
10% to <20% below FPT (medium poverty neighborhood)	27.53	23.20	32.33	0.658
20% to <30% below FPT (high poverty neighborhood)	27.82	21.97	34.52	0.654
≥30% below FPT (very high poverty neighborhood)	33.17	26.47	40.63	0.119
Most severe symptom(s): Severe				
<10% below FPT (low poverty neighborhood)	13.25	9.30	18.53	ref
10% to <20% below FPT (medium poverty neighborhood)	20.21	16.29	24.81	**0.029**
20% to <30% below FPT (high poverty neighborhood)	23.94	18.10	30.94	**0.008**
≥30% below FPT (very high poverty neighborhood)	28.85	22.20	36.56	**< 0.001**

FPT: Federal Poverty Threshold

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 13. Healthcare seeking and help managing post-acute symptoms following acute COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)	Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
Have you seen a health care provider or other person for help with these symptoms? Yes				
Most severe symptom(s): Mild	32.06	26.92	37.68	ref
Most severe symptom(s): Moderate	53.93	47.73	60.02	**< 0.001**
Most severe symptom(s): Severe	70.79	64.01	76.75	**< 0.001**
Overall	50.16	46.48	53.83	
Do you feel like the person or people you saw for these symptoms have helped you manage your symptoms? Yes				
Most severe symptom(s): Mild	69.85	60.64	77.70	ref
Most severe symptom(s): Moderate	61.97	54.13	69.24	0.178
Most severe symptom(s): Severe	54.86	46.03	63.40	**0.017**
Do you feel like the person or people you saw for these symptoms have helped you manage your symptoms? No				
Most severe symptom(s): Mild	12.37	7.39	19.98	ref
Most severe symptom(s): Moderate	15.56	11.19	21.24	0.432
Most severe symptom(s): Severe	22.58	16.38	30.29	**0.032**
Do you feel like the person or people you saw for these symptoms have helped you manage your symptoms? Don't Know				
Most severe symptom(s): Mild	17.77	11.91	25.69	ref
Most severe symptom(s): Moderate	22.46	16.36	30.03	0.342
Most severe symptom(s): Severe	22.55	16.07	30.69	0.350
Has a doctor or other health care provider ever talked to you about whether you have long COVID? Yes				
Most severe symptom(s): Mild	7.31	5.07	10.43	ref
Most severe symptom(s): Moderate	10.52	7.43	14.69	0.159
Most severe symptom(s): Severe	16.29	11.38	22.77	**0.005**
Has a doctor or other health care provider ever talked to you about whether you have long COVID? No				
Most severe symptom(s): Mild	87.06	83.21	90.13	ref
Most severe symptom(s): Moderate	81.69	76.55	85.90	0.070
Most severe symptom(s): Severe	72.53	64.74	79.15	**< 0.001**
Has a doctor or other health care provider ever talked to you about whether you have long COVID? Don't know				
Most severe symptom(s): Mild	5.64	3.73	8.43	ref
Most severe symptom(s): Moderate	7.79	5.04	11.86	0.298
Most severe symptom(s): Severe	11.18	6.51	18.54	0.085

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 14. Reasons for not seeking care among adults who experienced long-term symptoms among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
The symptoms did not bother me enough to seek care					
Most severe symptom(s): Mild	86.55		80.22	91.08	ref
Most severe symptom(s): Moderate	65.75		56.54	73.91	**< 0.001**
Most severe symptom(s): Severe	40.14	*	29.00	52.40	**< 0.001**
Doctors always dismiss my symptoms					
Most severe symptom(s): Mild	1.07	*	0.51	2.24	ref
Most severe symptom(s): Moderate	3.98	*	2.04	7.63	**0.038**
Most severe symptom(s): Severe	14.22	*	6.58	28.07	**0.014**
Barriers to accessing healthcare					
Most severe symptom(s): Mild	6.80	*	3.57	12.56	ref
Most severe symptom(s): Moderate	14.02		8.77	21.68	0.066
Most severe symptom(s): Severe	26.96	*	16.71	40.43	**0.002**
Some other reason					
Most severe symptom(s): Mild	5.58	*	2.93	10.37	ref
Most severe symptom(s): Moderate	16.25		10.56	24.16	**0.006**
Most severe symptom(s): Severe	18.68		11.29	29.32	**0.008**

Barriers to accessing healthcare is a combination of three responses: "I did not know where to go for care", "I did not know how to pay for care", and "I could not get an appointment"

* Estimate should be interpreted with caution due to high Relative Standard Error

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 15. Activity limitations and probable depression by severity of most severe long-term symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Prevalence (%)		Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
Moderate or Severe Activity Limitation					
No symptoms	5.81		3.60	9.23	ref
Most severe symptom(s): Mild	7.23		4.71	10.93	0.497
Most severe symptom(s): Moderate	32.07		26.39	38.34	**< 0.001**
Most severe symptom(s): Severe	59.61		52.32	66.50	**< 0.001**
Likely Current Depression (PHQ-2 > 3)					
No symptoms	1.61	*	0.70	3.63	ref
Most severe symptom(s): Mild	5.61	*	3.07	10.03	**0.029**
Most severe symptom(s): Moderate	13.80		9.23	20.14	**< 0.001**
Most severe symptom(s): Severe	33.24		26.62	40.59	**< 0.001**

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

* Estimate should be interpreted with caution due to high Relative Standard Error

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.

Table 16. Number of days with limited or total inability to carry out usual activities by severity of most severe long-term symptoms following COVID-19 among adults 18 years or older, New York City, November - December, 2022

Source:COVID Experiences Survey, 2022

Estimates are weighted to the NYC adult residential population per the American Community Survey 2019.

	Mean (# Days)	Lower 95% Confidence Interval	Upper 95% Confidence Interval	p-value
In the past 30 days, for how many days did you cut back or reduce your usual activities or work because of any health condition?				
No symptoms	0.65	0.39	0.90	ref
Most severe symptom(s): Mild	1.54	1.13	1.95	**< 0.001**
Most severe symptom(s): Moderate	3.51	2.89	4.12	**< 0.001**
Most severe symptom(s): Severe	5.69	4.81	6.57	**< 0.001**
In the past 30 days, for how many days were you totally unable to carry out your usual activities or work because of any health condition?				
No symptoms	0.30	0.17	0.44	ref
Most severe symptom(s): Mild	1.02	0.43	1.61	**0.0206**
Most severe symptom(s): Moderate	2.25	1.46	3.04	**< 0.001**
Most severe symptom(s): Severe	4.31	3.41	5.21	**< 0.001**

Confidence Intervals are a measure of estimate precision: the wider the CI, the more imprecise the estimate.

Significance test is based on the Z score test. P values are significant at the 0.05 level and are indicated in bold text. Ref: Reference group.