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Chronic Obstructive Pulmonary Disease in Adults Age 18 and Older: United States, 2023

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Key findings

Data from the National Health Interview Survey

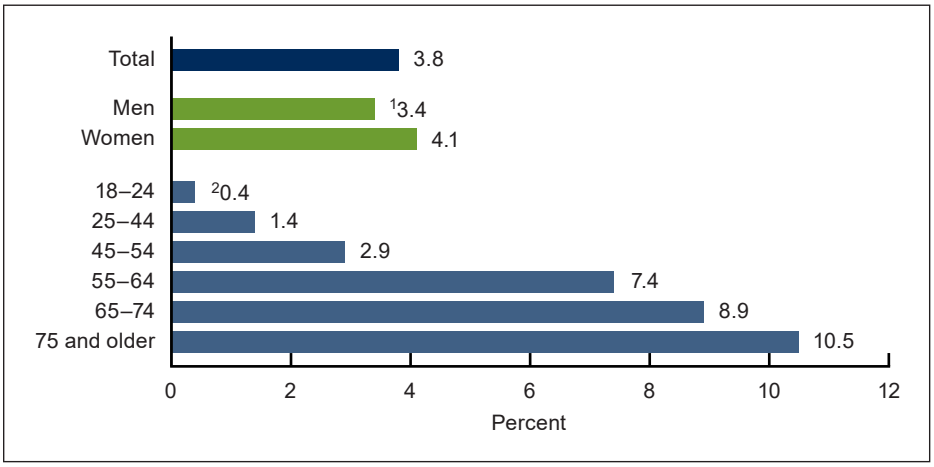
- In 2023, the age-adjusted prevalence of diagnosed chronic obstructive pulmonary disease (COPD) in adults age 18 and older was 3.8%, with women more likely to have COPD (4.1%) than men (3.4%).
- COPD increased with increasing age, from 0.4% in adults ages 18–24 to 10.5% in those age 75 and older.
- Asian non-Hispanic adults were less likely than adults of all other racial and ethnic groups to have COPD.
- The prevalence of COPD decreased with increasing family income and varied by region.
- Adults with fair or poor health were about five times as likely to have COPD (11.5%) than adults with excellent, very good, or good health (2.2%), and the percentage increased with increasing level of difficulties in functioning.

Chronic obstructive pulmonary disease (COPD) is a group of diseases of the lung for which there is no cure and that worsens over time (1). In 2023, COPD was the fifth leading cause of death in the United States, resulting in 141,733 deaths. COPD incurs annual medical costs of $24 billion among adults age 45 and older (2,3). The most common COPD types are emphysema and chronic bronchitis (1,3). This report uses 2023 National Health Interview Survey (NHIS) data to present age-adjusted estimates of COPD in adults age 18 and older by selected sociodemographic and health characteristics.

What percentage of adults had COPD in 2023, and were differences seen by sex and age?

- In 2023, the age-adjusted prevalence of diagnosed COPD in adults was 3.8% (Figure 1, Table 1).
- Women (4.1%) were more likely than men (3.4%) to have COPD.

Figure 1. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by sex and age group: United States, 2023



[1]Significantly different from women ($p < 0.05$).
[2]Significant linear trend by age ($p < 0.05$).
NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population. Age-specific percentages are not age adjusted. Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

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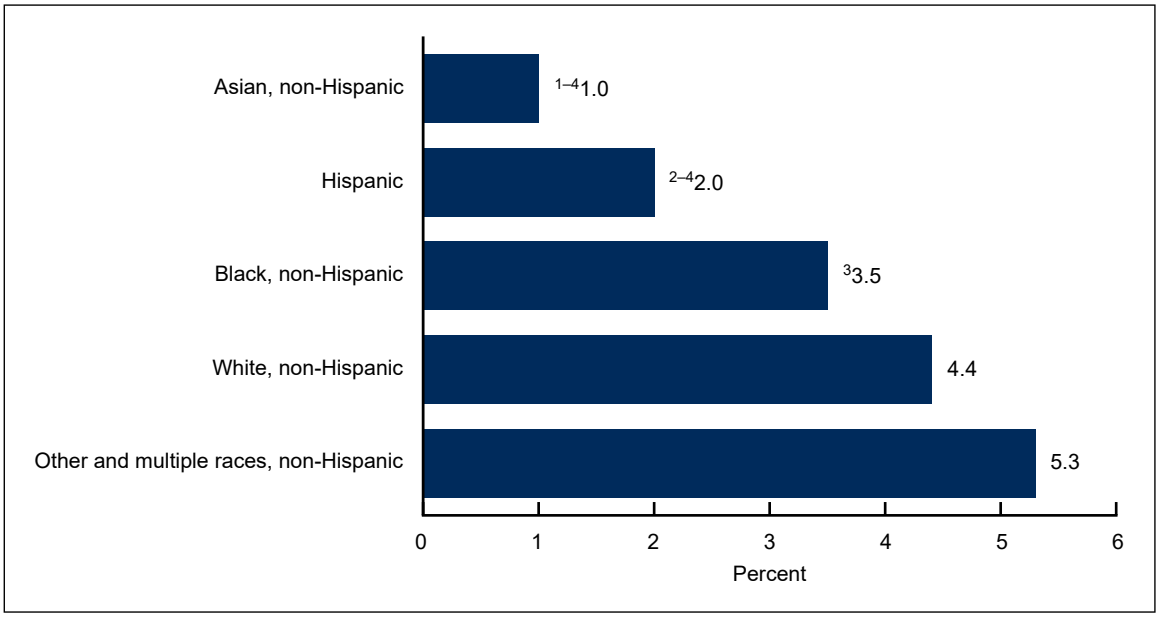
- The percentage of adults with COPD increased with age, from 0.4% in adults ages 18–24 to 10.5% in adults age 75 and older.

Were differences by race and Hispanic origin observed in the percentages of adults with COPD?

- Asian non-Hispanic (subsequently, Asian) adults were less likely to have COPD (1.0%) than adults who are Hispanic (2.0%), Black non-Hispanic (subsequently, Black) (3.5%), White non-Hispanic (subsequently, White) (4.4%), and other and multiple races non-Hispanic (subsequently, other and multiple races) (5.3%) (Figure 2, Table 2).
- Hispanic adults were less likely to have COPD than Black, White, and other and multiple-race adults.
- Black adults were less likely to have COPD than White adults, and the observed difference compared with other and multiple-race adults was not significant.

Figure 2. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by race and Hispanic origin: United States, 2023

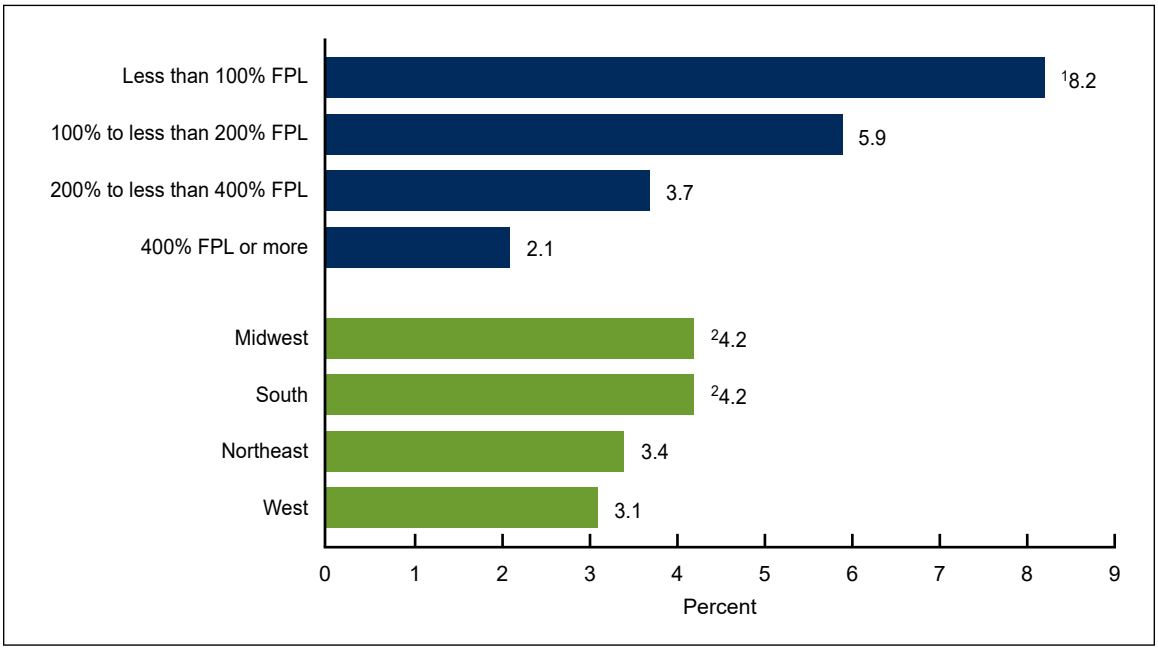


[1]Significantly different from Hispanic adults ($p < 0.05$).
[2]Significantly different from Black, non-Hispanic adults ($p < 0.05$).
[3]Significantly different from White, non-Hispanic adults ($p < 0.05$).
[4]Significantly different from other and multiple races, non-Hispanic adults ($p < 0.05$).
NOTES: Categories shown for non-Hispanic adults are for those who selected only one racial group. Adults categorized as Hispanic may be of any race or combination of races. Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

How did the prevalence of COPD vary by family income or region?

- The age-adjusted percentage of adults with COPD decreased with increasing family income, from 8.2% in adults with family income less than 100% of the federal poverty level (FPL) to 5.9% in those with income at 100% to less than 200% FPL, 3.7% in those with income at 200% FPL to less than 400% FPL, and 2.1% in those with income at 400% FPL or more (Figure 3, Table 3).
- Adults living in the Midwest and South (4.2% each) were more likely to have COPD than those living in the Northeast (3.4%) and West (3.1%).

Figure 3. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by family income and region: United States, 2023

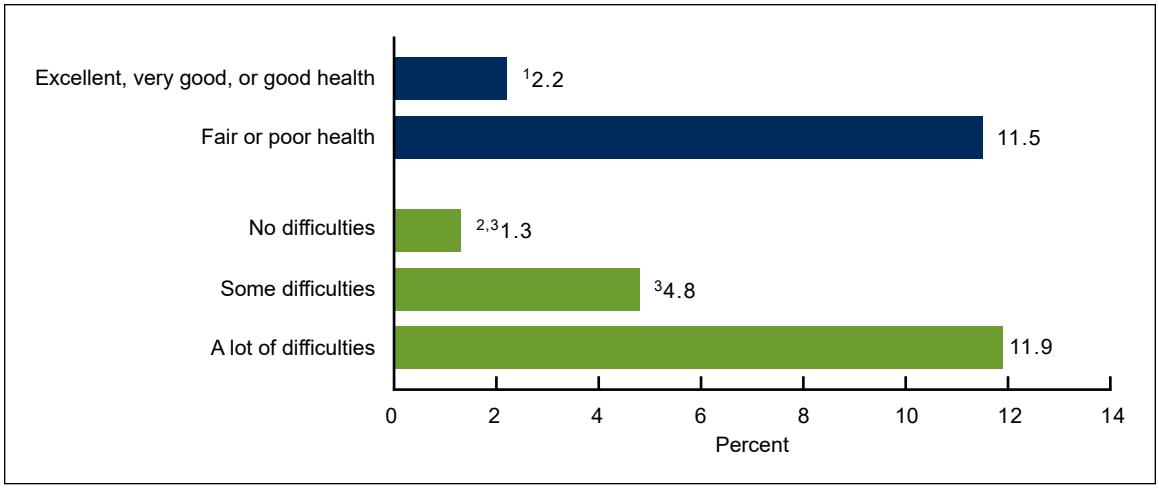


[1]Significant linear trend by family income ($p < 0.05$).
[2]Significantly different from Northeast and West ($p < 0.05$).
NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" FPL is federal poverty level, which is based on a ratio of the family's income in the previous calendar year to the appropriate poverty threshold defined by the U.S. Census Bureau. Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

Did the percentage of adults with COPD vary by respondent-assessed health status or difficulties in functioning?

- Adults with excellent, very good, or good health were less likely to have COPD (2.2%) compared with adults with fair or poor health (11.5%) (Figure 4, Table 4).
- The age-adjusted percentage of adults with COPD increased with increasing difficulties in functioning, from 1.3% in adults with no difficulties to 4.8% in those with some difficulties and 11.9% in those with a lot of difficulties.

Figure 4. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by respondent-assessed health status and difficulties in functioning: United States, 2023



[1]Significantly different from adults in fair or poor health ($p < 0.05$).
[2]Significantly different from adults with some difficulties in at least one of six functioning domains ($p < 0.05$).
[3]Significantly different from adults with a lot of difficulties or cannot do at all in at least one of six functioning domains ($p < 0.05$).
NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

Summary

This report describes national estimates of diagnosed COPD in adults age 18 and older by selected sociodemographic characteristics using data from NHIS. In 2023, the age-adjusted prevalence of COPD in adults was 3.8%. Women were more likely than men to have COPD, and prevalence increased with increasing age. Asian adults were less likely than adults of all other racial and ethnic groups to have COPD. The prevalence of COPD decreased with increasing family income and varied by region. Additionally, adults with fair or poor health were more than five times as likely to have COPD than adults with good or better health. COPD prevalence increased with increasing level of functional difficulties. COPD is a major cause of disability and one of the leading causes of death in the United States (3).

Definitions

Chronic obstructive pulmonary disease (COPD): Based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had … chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?"

Difficulties in functioning: Categorized by the level of difficulty reported in the Washington Group Short Set on Functioning (4). The six domains of functioning include: seeing (even if wearing glasses), hearing (even if wearing hearing aids), mobility (walking or climbing stairs), communication (understanding or being understood by others), cognition (remembering or concentrating), and self-care (such as washing all over or dressing). Adults who responded "a lot of difficulty" or "cannot do at all/unable to do" to at least one domain are considered to have a lot of difficulties; any response of "some difficulty" (but no reports of "a lot of difficulty" or "cannot

do at all") to at least one of the six domains are considered to have "some difficulties"; and responses of "no difficulty" in all six domains are considered to have "no difficulties."

Family income as a percentage of federal poverty level (FPL): Based on the federal poverty level, which was calculated from the family's income in the previous calendar year and family size using the U.S. Census Bureau's poverty thresholds (5). Family income was imputed when missing (6).

Race and Hispanic origin: Adults categorized as Hispanic may be of any race or combination of races. Non-Hispanic adults categorized as Asian, Black, or White indicated one race only. The category other and multiple races non-Hispanic includes those who did not identify as Asian, Black, White, or Hispanic and those who identified as more than one race.

Region: Corresponds to the regions recognized by the Census Bureau, defined as:

- Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
- Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
- South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
- West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Respondent-assessed health status: Survey respondents were asked, "Would you say your health in general is excellent, very good, good, fair, or poor?" Responses were coded as the respondents being in (a) excellent, very good, or good health if they responded "excellent," "very good," or "good"; or in (b) fair or poor health if they responded "fair" or "poor."

Data source and methods

Data from the 2023 NHIS were used for this analysis. NHIS is a nationally representative household survey of the U.S. civilian noninstitutionalized population. It is conducted continuously throughout the year by the National Center for Health Statistics (NCHS). Interviews are typically initiated face-to-face in respondents' homes with follow-ups conducted over the telephone as needed (7). For more information about NHIS, visit https://www.cdc.gov/nchs/nhis.htm.

Point estimates and corresponding variances for this analysis were calculated using SAS-callable SUDAAN software (8) to account for the complex sample design of NHIS. All estimates are based on self-report and meet NCHS data presentation standards for proportions (9). Differences between percentages were evaluated using two-sided significance tests at the 0.05 level. Linear and quadratic trends by age group and family income were evaluated using orthogonal polynomials in logistic regression. Estimates were age adjusted to the 2000 U.S. census population using the direct method for age groups 18–44, 45–64, 65–74, and 75 and older (10).

About the authors

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Figure Tables

Data table for Figure 1. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by sex and age group: United States, 2023

Selected characteristic	Percent (95% confidence interval)	Standard error
Total	3.8 (3.5–4.1)	0.1
Sex		
Men	[1]3.4 (3.1–3.8)	0.2
Women	4.1 (3.8– 4.5)	0.2
Age group		
18–24	[2]0.4 (0.2–0.9)	0.2
25–44	1.4 (1.1–1.7)	0.2
45–54	2.9 (2.4–3.6)	0.3
55–64	7.4 (6.5–8.3)	0.5
65–74	8.9 (8.1–9.8)	0.4
75 and older	10.5 (9.5–11.7)	0.5

[1]Significantly different from women ($p < 0.05$).
[2]Significant linear trend by age ($p < 0.05$).

NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population. Age-specific percentages are not age adjusted. Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

Data table for Figure 2. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by race and Hispanic origin: United States, 2023

Race and Hispanic origin	Percent (95% confidence interval)	Standard error
Asian, non-Hispanic	[1–4]1.0 (0.5–1.6)	0.3
Hispanic	[2–4]2.0 (1.6–2.6)	0.2
Black, non-Hispanic	[3]3.5 (2.9–4.2)	0.3
White, non-Hispanic	4.4 (4.1–4.8)	0.2
Other and multiple races, non-Hispanic	5.3 (3.7–7.4)	0.9

[1]Significantly different from Hispanic adults ($p < 0.05$).
[2]Significantly different from Black non-Hispanic adults ($p < 0.05$).
[3]Significantly different from White non-Hispanic adults ($p < 0.05$).
[4]Significantly different from other and multiple races non-Hispanic adults ($p < 0.05$).

NOTES: Categories shown for non-Hispanic adults are for those who selected only one racial group. Adults categorized as Hispanic may be of any race or combination of races. Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis? " Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

Data table for Figure 3. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by family income and region: United States, 2023

Selected characteristic	Percent (95% confidence interval)	Standard error
Family income		
Less than 100% FPL	[1]8.2 (7.1–9.5)	0.6
100% to less than 200%	5.9 (5.2–6.7)	0.4
200% to less than 400%	3.7 (3.3–4.2)	0.2
400% FPL or more	2.1 (1.8–2.4)	0.1
Region		
Midwest	[2]4.2 (3.6–4.9)	0.3
South	[2]4.2 (3.7–4.7)	0.2
Northeast	3.4 (2.7–4.1)	0.3
West	3.1 (2.6–3.6)	0.2

[1]Significant linear trend by family income ($p < 0.05$).
[2]Significantly different from Northeast and West ($p < 0.05$).

NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis? " FPL is federal poverty level, which is based on a ratio of the family's income in the previous calendar year to the appropriate poverty threshold defined by the U.S. Census Bureau. Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

Data table for Figure 4. Age-adjusted percentage of adults age 18 and older with chronic obstructive pulmonary disease, by respondent-assessed health status and difficulties in functioning: United States, 2023

Selected characteristic	Percent (95% confidence interval)	Standard error
Respondent-assessed health status		
Excellent, very good, or good	[1]2.2 (2.0–2.4)	0.1
Fair or poor	11.5 (10.5–12.6)	0.6
Difficulties in functioning		
No difficulties	[2,3]1.3 (1.1–1.5)	0.1
Some difficulties	4.8 (4.3–5.2)	0.2
A lot of difficulties	11.9 (10.7–13.2)	0.7

[1]Significantly different from adults in fair or poor health ($p < 0.05$).
[2]Significantly different from adults with some difficulties in at least one of six functioning domains ($p < 0.05$).
[3]Significantly different from adults with a lot of difficulties or cannot do at all in at least one of six functioning domains ($p < 0.05$).

NOTES: Data are based on a yes response to the survey question, "Have you ever been told by a doctor or other health professional that you had chronic obstructive pulmonary disease, COPD, emphysema, or chronic bronchitis?" Estimates are age adjusted using the projected 2000 U.S. population as the standard population and four age groups: 18–44, 45–64, 65–74, and 75 and older.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2023.

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