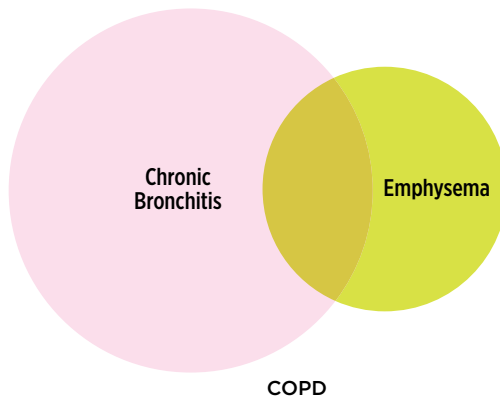


Chronic Obstructive Pulmonary Disease COPD

Chronic Obstructive Pulmonary Disease (COPD) is a term that refers to two lung diseases, chronic bronchitis and emphysema. The term COPD is used because both diseases are characterized by obstruction to airflow that interferes with normal breathing and the two frequently co-exist. While asthma is not included in COPD, people with asthma may develop COPD over time. In 2008, 12.1 million people in the U.S. 18 years of age or older were estimated to have COPD (Figure 1).¹ However, lung function tests show that up to 24 million people may have the disease, indicating an underdiagnosis of COPD.²

Figure 1: COPD Prevalence by Disease, 2008



Source: NHIS 2008

COPD is the fourth leading cause of death in the U.S., claiming 120,970 lives in 2006, an age-adjusted death rate of 39.9 per 100,000. 2006 was also the sixth consecutive year in which more women (63,006) than men (57,970) died of COPD.³

Chronic Bronchitis

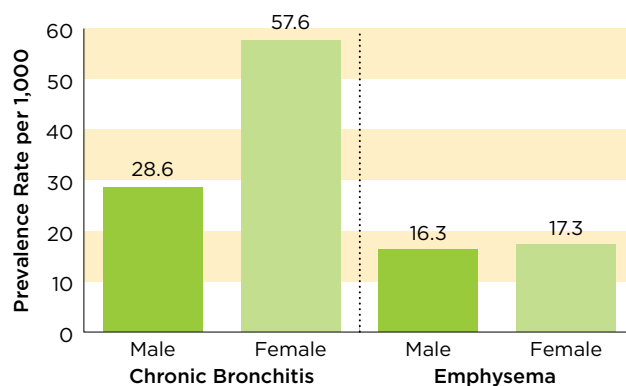
In 2008, 9.8 million Americans (43.6 per 1,000) reported having been diagnosed with chronic bronchitis within the last year. Chronic bronchitis is about twice as common among women (57.6 per 1,000) as men (28.6 per 1,000; Figure 2). It is also more common among those over 65 years of age (56.0 per 1,000) and 45 to 64 years of age (54.9 per 1,000) than among those 18 to 44 years of age (31.6 per 1,000).⁴

Sufferers of chronic bronchitis experience obstructed breathing because the linings of the airways in the lungs are constantly inflamed and become thickened. The airways also become clogged because they are producing more mucus than usual.⁵

Emphysema

In 2008, an estimated 3.8 million Americans (16.8 per 1,000) reported ever having

Figure 2: COPD Prevalence Rates by Disease and Sex, 2008



Source: NHIS 2008

been diagnosed with emphysema. Traditionally, prevalence rates for emphysema have been higher among men than women, although the difference has been growing smaller. For the first time, the rate for women (17.3 per 1,000) is higher than for men (16.3 per 1,000), but only slightly so (Figure 2, above). Emphysema is not common among populations under 45 years of age; about 94 percent of all people ever diagnosed with the disease are over 45.⁶

Emphysema causes the walls between the alveoli (air sacs within the lungs) to lose their ability to stretch and recoil. The air sacs become stiff and weakened and may break, creating irreversible “holes” in the tissues of the lower lungs. These holes between the small air sacs create larger air sacs, in which air can become trapped more easily. The lungs have more difficulty moving air in and out and the exchange of oxygen and carbon dioxide with the blood may be impaired.⁷

Symptoms

Chronic bronchitis and emphysema both cause chronic cough and shortness of breath. Unique symptoms of chronic bronchitis are increased mucus and frequent clearing of the throat, while limited exercise tolerance is a common symptom of emphysema. A healthcare provider will make a diagnosis of COPD based on the results of lung function tests, the patient’s history, a physical examination and other tests.⁸

Causes and Risk Factors

Smoking is the primary cause of COPD. Approximately 80 to 90 percent of COPD deaths are caused by smoking. Female smokers are nearly 13 times as likely to die from COPD as women who have never smoked. Male smokers are nearly 12 times as likely to die from COPD as men who have never smoked.⁹

Other environmental and genetic factors can also increase a person’s likelihood of getting COPD. Some environmental risk factors include exposure to air pollution, second-hand smoke and occupational dusts and chemicals, heredity, a history of childhood respiratory infections and socioeconomic status.¹⁰

A rare type of emphysema that accounts for 5 percent or less of all cases is caused by too little alpha-1 antitrypsin (AAT), a protein mainly produced in the liver. AAT is a “lung protector,” and in its absence, emphysema is almost inevitable. Sometimes called Alpha-1, this type of emphysema results from inheriting a faulty alpha-1 gene from each parent.¹¹

Treatment

Lung damage from COPD is irreversible, and the quality of life for a person suffering from COPD diminishes as the disease progresses. The most important step in preventing COPD and slowing its progression is to stop smoking. In addition, there are treatments available that can improve a patient’s quality of life, such as medication, vaccination, pulmonary rehabilitation, oxygen therapy, and surgery. These therapies

are used to help the patient relieve symptoms, reduce the frequency and severity of exacerbations, and improve overall health and ability to exercise.¹²

Costs

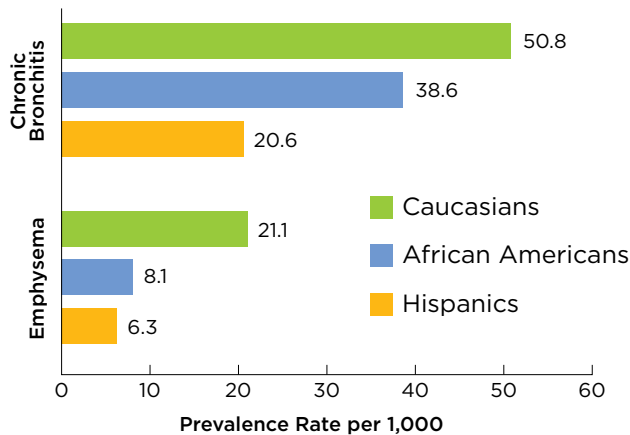
COPD is a costly condition due to the large number of people who have it and how much it impairs their everyday functioning. It is estimated that the total economic cost of COPD will be \$49.9 billion in 2010. This includes \$29.5 billion in direct health care expenditures and \$20.4 billion in indirect costs.¹³

**Racial/
Ethnic
Differences**

African Americans

COPD does not disproportionately affect African Americans compared to Caucasians. In 2008, approximately 1.0 million African Americans were diagnosed with chronic bronchitis. Their prevalence rate of 38.6 per 1,000 was significantly lower than the rate of 50.8 per 1,000 among Caucasians. That same year, approximately 213,000 African Americans had emphysema, a prevalence rate of 8.1 per 1,000. Again, the rate among Caucasians was significantly higher at 21.1 per 1,000 (Figure 3).¹⁴

Figure 3: COPD Prevalence Rates by Disease and Race and Ethnicity, 2008



Source: NHIS 2008

COPD claimed over 6,700 African American lives in 2006. Age-adjusted death rates due to COPD tend to be higher among Caucasians and men. African American men (37.7 per 100,000) were twice as likely as African American women (18.9 per 100,000) to die from COPD in 2006. The rate for Caucasian women (39.1 per 100,000) was close to the same as that of African American men, while Caucasian men had the highest rate at 50.5 per 100,000 (Figure 4).¹⁵

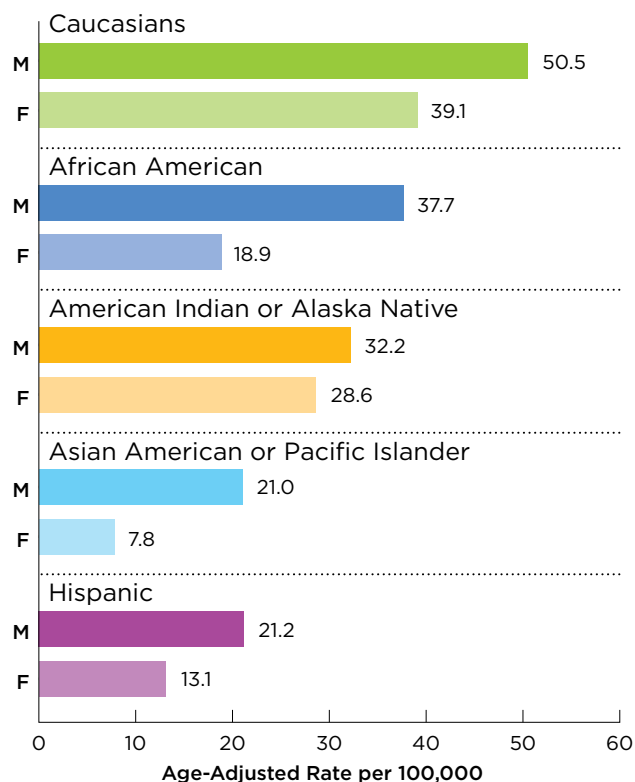
Access to quality healthcare can be the difference between life and death for COPD patients waiting for a lung transplant.

A review of all African American and Caucasian lung transplant patients between 1995 and 2005 found that African Americans and Caucasians with private insurance had similar and favorable chances of receiving a lung transplant. However, among those who did not have private insurance, African Americans were significantly less likely to receive a lung transplant than Caucasians (61 versus 68%; adjusted hazard ratio = 0.83, CI = 0.70-0.98). African Americans were also more likely than Caucasians to die while on the transplant list, or to be removed from it.¹⁶

● **Hispanics/Latinos**

Hispanics have much lower prevalence rates for both chronic bronchitis and emphysema compared to Caucasians. In 2008, over 630,000 Hispanics were diagnosed with chronic bronchitis. The prevalence rate in this group, 20.6 per 1,000, was significantly lower compared to Caucasians and African Americans. A similar pattern was seen for emphysema prevalence, although the rate among Hispanics (6.3 per 1,000) was only significantly different compared to Caucasians (Figure 3, above). Almost 194,000 Hispanics reported having emphysema in 2008.¹⁷

Figure 4: Age-Adjusted Death Rates for COPD by Race and Ethnicity and Sex, 2006



Source: NCHS 2006

Similar to prevalence, Hispanics have some of the lowest emphysema death rates compared to other racial and ethnic groups. In 2006, 3,053 Hispanics died of COPD. The age-adjusted death rate among Hispanic men (21.2 per 100,000) was about 60 percent higher than the rate among Hispanic women (13.1 per 100,000; Figure 4, above).¹⁸

Access to quality healthcare remains a huge obstacle for Hispanics who suffer from COPD. A study of COPD patients found that Hispanics visited

the emergency room at twice the rate of Caucasian patients (incidence rate ratio = 1.97, CI = 1.16-3.33). This suggests that even though fewer Hispanics suffer from COPD, low access to healthcare may prevent them from receiving the routine treatment they need to control their COPD.¹⁹

More research on COPD among Hispanics is needed in order to identify any important differences that may exist between Hispanic subgroups and other populations in areas such as risk factors, testing guidelines, and barriers to disease management. One such barrier that is of importance among Hispanics is language, as certain clinical words such as dyspnea and wheeze (both symptoms of COPD) do not translate well from English to Spanish. Additionally, studies that focus on Hispanics usually combine all people of Hispanic heritage into one group. This

hides any important differences between Hispanic subpopulations, who may be unique in terms of their genetic profile, exposure to risk factors, and healthcare access. Future research on COPD among Hispanics should focus on and carefully define these subgroups in order to decrease the burden of this disease among the population in the U.S. and elsewhere.²⁰

● **Asian Americans and Native Hawaiians/ Pacific Islanders**

Limited data are available on COPD for Asian Americans and Native Hawaiians/Pacific Islanders. Major national health surveys have begun to collect data for this group. However, small sample sizes mean the estimates are not statistically accurate, so they are not published or released as their own category. Often analysts group Asian Americans and Native Hawaiians/Pacific Islanders with American Indians into the category of “Other Races.”

Death rates among Asian Americans and Native Hawaiians/Pacific Islanders are the lowest compared to other racial and ethnic groups, although the difference in rates between men and women is the largest. In 2006, there were 1,190 deaths due to COPD among these populations. The age-adjusted death rate among Asian American and Native Hawaiian/Pacific Islander men (21.0 per 100,000) was 2.4 times higher than the rate among women (8.8 per 100,000; Figure 4, above).²¹

A study of patients with COPD in California found that Asian Americans were less likely than Caucasians to be hospitalized for the disease (RR = 0.5, CI = 0.3-0.7). Those with Chinese (RR = 0.3, CI = 0.2-0.7) and Japanese (RR = 0.4, CI = 0.1-1.0) ancestry were even less likely to be hospitalized. Although there was no clear reason for these differences, the researchers believed they may have been due to genetics.²²

● **Native Americans/ Alaska Natives**

Due to their small numbers in terms of the U.S. population, limited data are available on COPD among Native Americans/Alaska Natives. Major national health surveys have begun to collect data for this group. However, estimates are not considered statistically accurate and are not published or released because of small sample sizes. Analysts often group Asian Americans and Native Hawaiians/Pacific Islanders with Native Americans into the category of “Other Races.”

Death rates for COPD among Native American/Alaska Native men are the second lowest compared to other racial and ethnic groups, even though smoking rates (the primary risk factor for COPD) are highest among this population. COPD death rates are second only to Caucasian women among Native American/Alaska Native women. In 2006, the age-adjusted death rates among men in these populations was 32.2 per 100,000, only 12.6 percent higher than the rate of 28.6 per 100,000 among women (Figure 4, above).²³

Resources

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