

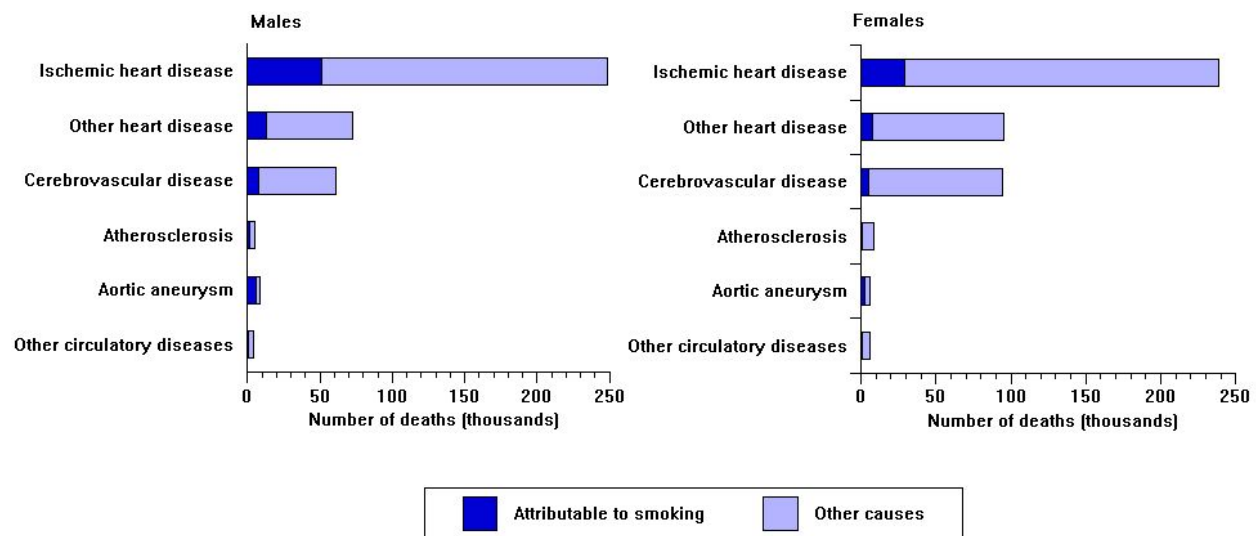
Smoking and Cardiovascular Diseases

Smoking has many unhealthy effects on the body, including on the heart and circulatory systems:

- Increases LDL ("bad cholesterol") and decreases HDL ("good cholesterol").
- Promotes atherosclerosis, or development of fatty plaques in the arteries.
- Increases levels of blood clotting factors (fibrinogen) in the blood vessels.
- Nicotine constricts blood vessels and decreases blood flow to vital organs.
- Carbon monoxide decreases the amount of oxygen that blood can carry.
- Increases heart rate, which strains your heart.
- Increases blood pressure (hypertension), which can lead to damage to the heart, kidneys, and other vital organs.
- Results in a higher risk of having a heart attack, stroke, and congestive heart failure (when the heart can't pump enough blood to other organs).

Smoking is the leading preventable cause of death. According to the CDC and the National Cancer Institute, cigarette smoking increases your risk for developing and dying from several diseases, including cardiovascular diseases. Each year, an estimated 392,600 people in the U.S. die prematurely from their own smoking. This represents one-in-five deaths.¹ One-third (33%, 128,500) of these deaths are from cardiovascular diseases. Figure 1 shows the number of cardiovascular deaths attributed to smoking.

Figure 1 - Average Annual Number of Cardiovascular Disease Deaths Attributable to Smoking, Males and Females, By Cause of Death, U.S., 2000-2004



Source: CDC, *MMWR* 2008; 57(45): 1226-1228.

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Smoking is a major risk factor for illness and death from cardiovascular diseases.

- Smoking increases the risk of heart attack and stroke.
- In the U.S., coronary heart disease, the most common type, is the leading cause of death. Cerebrovascular disease, or stroke, is the 3rd leading cause of death.²
- Each year, 80,000 people die from ischemic heart disease, 15,900 people die from cerebrovascular disease, and 32,500 people die from other cardiovascular diseases (e.g., aneurysm, atherosclerosis) as a result of smoking.¹
- Cigarette smokers have 2-4 times greater risk of developing heart disease.³ Smoking triples the risk of dying from heart disease among middle-aged adults.⁴
- Smokers are at double the risk of having a stroke.⁵ By quitting, a smoker reduces her risk of stroke to that of a non-smoker within 5 to 15 years.
- Smokers have 10 times the risk of developing peripheral artery disease.⁶
- In 2000, an estimated 8.6 million adults in the U.S. who ever smoked had at least one serious and debilitating chronic illness attributable to smoking. Of the 12.7 million smoking-related illnesses, 19% were previous heart attacks and 8% were strokes. Heart attack was among the most prevalent diseases affecting former smokers.⁷

Exposure to tobacco smoke increases the risk of heart disease among non-smokers.

- An average of 46,000 (and as many as 69,600) non-smokers will die of coronary heart disease related to exposure to secondhand smoke (SHS).^{1,8}
- In a 2009 report by the Institute of Medicine, a panel of scientific experts reviewed previous human, animal, and cellular studies of the effects of secondhand smoke exposure on cardiovascular health and the impact of smoking bans on reducing heart attacks. Major findings:
 - There is sufficient evidence to indicate that secondhand smoke exposure, even low level exposure, causes heart disease. Secondhand smoke exposure consistently raises the risk of heart disease by 25% to 30%.
 - There is a causal association between smoking bans and a decrease in the incidence of heart attacks. Heart attack admissions decreased by 6% to 47% after state and local smoking bans were implemented. The reduction in heart attacks is possibly due to a reduction in exposure to secondhand smoke, a reduction in personal smoking, or both.
 - Although there are few studies showing a direct relationship between smoking bans and reduction in heart attacks among non-smokers, cell and animal studies find that secondhand smoke exposure results in cardiovascular changes, such as increased inflammation and clotting, that are the basis for future heart disease and heart attacks.⁹

Smoking and Cardiovascular Diseases

- ¹ Centers for Disease Control and Prevention (CDC). [Smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 2000-2004](#). *Morbidity and Mortality Weekly Report* 2008 (November 14); 57(45): 1226-1228. Refers to deaths among adults ages 35 and older. Excludes deaths from secondhand smoke, fire injury, and fetal and infant exposure to tobacco smoke during and after pregnancy.
- ² U.S. Department of Health and Human Services (USDHHS). [The Health Consequences of Smoking: A Report of the Surgeon General](#). Atlanta, GA: USDHHS, CDC, 2004.
- ³ USDHHS. [Reducing the Health Consequences of Smoking - 25 Years of Progress: A Report of the Surgeon General](#). Atlanta, GA: USDHHS, CDC; 1989. DHHS Pub. No. (CDC) 89-8411.
- ⁴ CDC. [Cigarette smoking-attributable mortality and years of potential life lost—United States, 1990](#). *MMWR* 1993 (August 27); 42(33): 645-648.
- ⁵ Ockene IS, Miller NH. Cigarettes smoking, cardiovascular disease, and stroke: A statement for healthcare professionals from the American Heart Association. *Journal of American Health Association* 1997; 96(9): 3243-3247.
- ⁶ Fielding JE, Husten CG, Eriksen MP. "Tobacco: Health effects and control." In: Maxcy KF, Rosenau MJ, Last JM, Wallace RB, Doebbling BN (eds.), *Public Health and Preventive Medicine*. New York: McGraw-Hill; 1998; 81-845.
- ⁷ CDC. [Cigarette smoking-attributable morbidity - United States, 2000](#). *MMWR* 2003 (September 5); 52(35): 842-844. Conditions are among current and former smokers.
- ⁸ California Environmental Protection Agency. [Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant](#). September 29, 2005.
- ⁹ Institute of Medicine. [Secondhand Smoke Exposure and Cardiovascular Effects: Making Sense of the Evidence](#). Washington, CD: The National Academies Press, October 2009.