



HEALTH HARMS FROM SMOKING AND OTHER TOBACCO USE

Tobacco use kills more than 480,000 people each year in the United States—more than the total number killed by AIDS, alcohol, motor vehicles, homicide, illegal drugs and suicide combined.¹ Among current smokers, 57 percent of all male deaths and nearly 50 percent of all deaths in women are attributed to smoking.² Even if the number of smoking related deaths were cut in half, smoking would still kill more people than all of these other causes.

In 1964, the Surgeon General first documented the harmful effects of smoking in *Smoking and Health: Report of the Advisory Committee of the Surgeon General of the Public Health Service*, which summarized the state of the science knowledge regarding tobacco use at that time.³ Research conducted since then has firmly established that smoking and other forms of tobacco consumption cause an enormous amount of health problems and related death and suffering.

- According to the 2014 Surgeon General's Report, cigarette smoking today is even more dangerous than previously thought. Cigarette smoking has been linked to disease of nearly all organs of the body, to diminished health status, and to harm to the fetus.⁴
- A *New England Journal of Medicine* study, published in 2013, concluded that compared to those who never smoke, smokers lose at least a decade of life expectancy. Further, quitting smoking before age 40 reduces the risk of death from continued smoking by about ninety percent.⁵
- A recent study in the *American Journal of Epidemiology* found that of all the lifestyle factors studied, including exercise and nutrition, avoiding smoking played the largest role in reducing the risk of heart disease and mortality. The authors concluded that avoiding smoking prolongs life.⁶

Today, smoking is the leading preventable cause of death in the United States. Despite the numerous reports of the Surgeon General and the National Institute for Health on the risks of smoking, approximately 40 million American adults still smoke;⁷ and approximately half of all continuing smokers will die prematurely as a result of their habit.⁸

Although most of the research on health harms focuses on cigarette smoking, recent studies have shown that other tobacco use, such as cigar and pipe smoking, also produce serious health risks to users.⁹

Smoking-Caused Cancer. Smoking is responsible for 87 percent of lung cancer deaths (90% in men, 80% in women).¹⁰ Over 155,000 men and women are expected to die from lung cancer in 2017.¹¹ Compared to nonsmokers, men and women who smoke are 25 times more likely to die from lung cancer.¹² Beyond just lung cancer, one out of three cancer deaths is due to smoking.¹³ Smoking is a known cause of cancer of the lung, larynx, oral cavity, bladder, pancreas, cervix, kidney, stomach, blood, liver, colon and rectum, and esophagus.¹⁴

Smoking-Caused Respiratory Diseases. Twenty-three percent of smoking-attributable deaths—more than 110,000 smoking deaths per year—involve respiratory diseases.¹⁵ Smoking is a known cause of most cases of chronic obstructive pulmonary disease (COPD), which includes emphysema and chronic bronchitis.¹⁶ Smoking is accountable for nearly 80 percent of all COPD deaths.¹⁷ Compared to nonsmokers, men who smoke are more than 25 times as likely to die from COPD; and women who smoke are more than 22 times as likely.¹⁸ Male and female smokers increase their risk of death from bronchitis and emphysema by 10 times.¹⁹

Smoking-Caused Heart Disease and Heart Attacks. Cancer and respiratory disease are not the only health risks associated with smoking. More men and women in the United States have died from smoking-attributable cardiovascular disease than from lung cancer.²⁰ Thirty-two percent of all coronary heart disease deaths in the United States each year are attributable to smoking. This risk is strongly

dose-related.²¹ Smoking triples the risk of dying from heart disease among middle-aged men and women.²² Two-thirds of deaths due to ischemic heart disease among smokers are attributable to their smoking.²³ Cardiovascular smoking deaths are also due to hypertension and stroke. The risk of ischemic stroke is nearly doubled by smoking.²⁴ Smoking accounts for 11 percent of all stroke deaths.²⁵ Both active and passive smoking are associated with an increase in the progression of atherosclerosis.²⁶ More than 135,000 Americans die from smoking-related cardiovascular diseases.²⁷

Other Direct Health Harms From Smoking. Heart disease, cancer and respiratory diseases are just a few of the physical and medical problems associated with smoking. Smoking causes poorer health outcomes in cancer patients and survivors.²⁸ It may reduce fertility and is a known cause of erectile dysfunction in men.²⁹ Cigarette smoking is a cause of diabetes and increases both the risk and the severity of rheumatoid arthritis.³⁰ Hearing loss and vision problems, including cataracts, have been linked to smoking.³¹ Smoking also is a cause of age-related macular degeneration, a condition that leads to loss of vision in the center of the eye.³² Chronic coughing, increased phlegm, emphysema and bronchitis have been well-established products of smoking for decades. Smoking exacerbates asthma in adults and also impairs the immune system.³³ Smokers are more susceptible to influenza and more likely to experience severe symptoms when they get the flu.³⁴ While many smokers believe that smoking relieves stress, it is actually a major cause. Smoking only appears to reduce stress because it lessens the irritability and tension caused by the underlying nicotine addiction.³⁵

Harm Caused by Smokeless Tobacco Use. Public health authorities including the Surgeon General and the National Cancer Institute have found that smokeless tobacco use is hazardous to health and can lead to nicotine addiction.³⁶ Smokeless tobacco contains at least 28 cancer-causing chemicals and causes oral, pancreatic and esophageal cancer.³⁷ A 2008 study from the WHO International Agency for Research on Cancer concluded that smokeless tobacco users have an 80 percent higher risk of developing oral cancer and a 60 percent higher risk of developing pancreatic and esophageal cancer.³⁸ Use of smokeless tobacco is also associated with other health problems including lesions in the mouth and tooth decay, and adverse reproductive and developmental effects including stillbirth, preterm birth, and low birthweight babies.³⁹ Studies have found that the levels of the carcinogenic NNK in smokeless tobacco products were comparable to those cigarettes,⁴⁰ and higher concentrations of nicotine and higher levels of carcinogenic tobacco-specific nitrosamines in smokeless tobacco users than in cigarette smokers.⁴¹ A study found that using Swedish snus can heighten one's risk for pancreatic cancer.⁴² Spit tobacco causes leukoplakia, a disease of the mouth characterized by white patches and oral lesions on the cheeks, gums, and/or tongue. Leukoplakia, which can lead to oral cancer, occurs in more than half of all users in the first three years of use. Studies have found that more than half of daily users of smokeless tobacco had lesions or sores in the mouth, and that these sores are commonly found in the part of the mouth where users place their chew or dip.⁴³ Spit tobacco has also been linked to dental caries. A study by the National Institutes of Health and the Centers for Disease Control and Prevention found chewing tobacco users were four times more likely than non-users to have decayed dental root surfaces.⁴⁴

Harms from Pregnant Smokers or Exposure to Secondhand Smoke. Even more disturbing is the impact of smoking on pregnant women. Research studies have found that smoking and exposure to secondhand smoke among pregnant women are major causes of spontaneous abortions, stillbirths and sudden infant death syndrome (SIDS).⁴⁵ Smoking also causes ectopic pregnancy, a condition that is very rarely survivable for the fetus and is potentially fatal for the mother.⁴⁶ Each year in the United States, more than 400,000 live-born infants are exposed in utero to tobacco from pregnant women smoking.⁴⁷ Smoking causes more than 1,000 deaths due to perinatal conditions annually, including 400 from sudden infant death syndrome (SIDS).⁴⁸ Children exposed to secondhand smoke before and after birth are at a great risk of abnormal blood pressure, cleft palates and lips, childhood leukemia, attention deficit disorder, childhood wheezing and respiratory disorders.⁴⁹

Other Secondhand Smoke Harms. Secondhand smoke is the combination of "mainstream smoke" (the smoke exhaled by a smoker) and side-stream smoke (from the burning end of the cigarette). Secondhand smoke is also referred to as environmental tobacco smoke, passive smoke, or involuntary tobacco smoke. It is a complex mixture of more than 7,000 chemicals that are produced by the burning materials of a cigarette; hundreds of these chemicals are toxic, and about 70 are known to cause cancer.⁵⁰

Secondhand smoke is listed as a carcinogen in the U.S. Public Health Services' *Ninth Report on Carcinogens*, as recommended by a scientific advisory panel of the National Toxicology Program.⁵¹ Exposure to secondhand smoke is causally linked to a wide range of health risks in both children and adults.

Children exposed to secondhand smoke are at a higher risk of sudden infant death syndrome (SIDS), acute lower respiratory tract infections, more frequent and severe asthma attacks, chronic respiratory symptoms, and middle ear infections.⁵² In adults, secondhand smoke exposure increases the risk of lung cancer, nasal sinus cancer, heart disease mortality, acute and chronic coronary heart disease morbidity, and eye and nasal irritation.⁵³ Lifetime nonsmokers who live with a smoker have a 20 to 30 percent increase in the risk of lung cancer from secondhand smoke exposure, and risk is greatest among those exposed to the heaviest smokers for the longest time.⁵⁴ Exposure to secondhand smoke also increases a person's risk of stroke by 20 to 30 percent.⁵⁵

Immediate and Short-Term Harms from Smoking. While most of the major health harms from smoking, such as lung cancer and heart disease, typically appear after years of tobacco use, many health problems can appear almost immediately, even among otherwise young and healthy kids. For example, cigarette smoking immediately increases heart rate and blood pressure, and the resting heart rates of young adult smokers are two to three beats per minute faster than nonsmokers.⁵⁶ In addition, high school seniors who are regular smokers and began smoking by grade nine are 2.4 times more likely than their nonsmoking peers to report poorer overall health. High school seniors who smoke are 2.4 to 2.7 times more likely to report cough with phlegm or blood, shortness of breath when not exercising, and wheezing or gasping.⁵⁷ Teens who smoke are also three times more likely than nonsmokers to use alcohol, eight times more likely to use marijuana and 22 times more likely to use cocaine.⁵⁸

Tobacco Use and Appearance. Concern about body weight and appearance are just a few reasons that smoke smokers begin. Most adolescents believe that smoking controls body weight and many times women report that they smoke to keep their weight down.⁵⁹ While smoking cessation has been shown to result in weight gain among both men and women, initiation of smoking does not appear to be associated with weight loss.⁶⁰ Among women, the average weight of current smokers is only modestly lower than that of never or long-term former smokers. Smoking has also been linked with facial wrinkling. Smokers were significantly more likely than nonsmokers to be evaluated with having prominent wrinkling.⁶¹

Smoking Addiction Starts Early. The peak years for first trying to smoke appear to be in the sixth and seventh grades, or between the ages of 11 and 13, with a considerable number starting even earlier.⁶² Within weeks or just days of first starting to smoke occasionally, young smokers show numerous signs of addiction, such as feeling anxious or irritable and having strong urges to smoke.⁶³ More than a third of all kids who ever try smoking a cigarette will become regular, daily smokers before they even leave high school.⁶⁴ According to a 2010 report prepared for the European Union by a group of distinguished scientists, tobacco has a substantially higher risk of causing addiction than heroin, cocaine, alcohol, or cannabis.⁶⁵ Every day more than 2,500 kids under 18 try smoking for the first time, and another 580 kids become new regular daily smokers.⁶⁶ Overall, nearly 80 percent of all adult smokers first become regular smokers before the age of 18, and more than 90 percent do so before leaving their teens.⁶⁷

Quitting Is Difficult, But Not Impossible. More than half of all Americans who have ever smoked have quit, and the majority of current smokers want to stop.⁶⁸ An established addiction to nicotine is difficult to escape, however, and it can take several quit attempts before being successful. Of the more than one million smokers who quit each year, 75 to 80 percent relapse within six months.⁶⁹ To quit, smokers must not only overcome their physiological dependence on nicotine but also cut their strong psychological and social ties to smoking or otherwise using tobacco. The three most effective components of smoking cessation treatment are pharmacological treatments (FDA approved tobacco cessation medications), clinician-provided social support and advice, and skills training regarding techniques to achieve and maintain abstinence.⁷⁰ Another treatment approach combines nicotine replace, counseling and the use of anti depressants like bupropion. In general, more inclusive treatments are more effective in producing long-term abstinence from tobacco, and combined therapies raise the absolute percentage of smokers who remain abstinent.

Health Benefits From Quitting. There are substantial and immediate health benefits from quitting smoking at any age. A 2007 study in the *New England Journal of Medicine* found that 11.7 percent of the decrease in coronary heart disease deaths between 1980 and 2000 were avoided or postponed by quitting smoking.⁷¹ Upon quitting, former smokers' blood circulation immediately increases, their blood pressure and heart rate quickly return to normal, and the carbon monoxide and oxygen levels in the blood soon return to normal. Within a few days of quitting, a person's breathing becomes easier and their sense of smell and taste improve.⁷² One year after quitting, a person's additional risk of heart disease is reduced by half, and after 15 years, this risk equals that of a person who never smoked.⁷³ Five to 15 years after quitting, the risk of stroke for an ex-smoker equals that of a person who never smoked.⁷⁴ Within 10 years of quitting a former smokers risk of developing lung cancer is 30 to 50 percent below that of a person who continues to smoke. The risk of developing cancers of the mouth, throat and esophagus lessen significantly after five years of quitting.⁷⁵ And although smoking cuts at least 10 years on average from a person's life expectancy, new evidence shows that individuals who quit before the age of 40 can regain almost all of those years. Those who quit between 35 to 44, 45 to 54 and 55 to 64 can regain nine, six and four years of life, respectively.⁷⁶

Despite the numerous reports of the Surgeon General and the National Institute for Health on the risks of smoking, more than 40 million Americans still smoke. Approximately half of all continuing, long-term smokers will die prematurely as a result of their addiction. These tobacco-related deaths and illnesses are preventable.

Campaign for Tobacco-Free Kids, January 27, 2017 / Laura Bach

More information on the health harms of tobacco use is available at
http://www.tobaccofreekids.org/facts_issues/fact_sheets/toll/products/.

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