



What You Need to Know About Quitting Smoking

ADVICE FROM THE SURGEON GENERAL



Note from the U.S. Surgeon General

I am pleased to release *Smoking Cessation: A Report of the Surgeon General*. Throughout its history, the U.S. Department of Health and Human Services (HHS) has led efforts to reduce the devastating effects of smoking as part of its mission to enhance and protect the health and well-being of all Americans. This report is the latest in a longstanding tradition of tobacco prevention and control efforts by HHS.

In 1990, the Surgeon General issued a report on *The Health Benefits of Smoking Cessation*. This 2020 report is the first Surgeon General's report since then to focus solely on quitting smoking.

This new report:

- ▶ Discusses patterns of adult smoking and smoking cessation in the U.S.;
- ▶ Updates findings on the biology of addiction and smoking cessation;
- ▶ Reviews the immediate- and long-term health benefits of smoking cessation;
- ▶ Examines treatments and tools proven to help adults quit smoking; and
- ▶ Highlights population-based strategies that encourage and support cessation in the U.S.

Smoking is the leading cause of preventable disease and death in the U.S. Although the percentage of adults who smoke is at an all-time low in the U.S., 34 million adults still smoke and therefore continue to be at risk of developing smoking-related diseases. This report makes



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U.S. SURGEON GENERAL

it clear that one of the most important actions people can take to improve their health is to quit smoking. This is true regardless of age or how long they've been smoking. Quitting smoking can be difficult, but there are proven treatments and strategies to help people successfully quit smoking.

As the Nation's Doctor, I remain committed to helping the millions of people who smoke to quit. We know more about the science of quitting than ever before. As a Nation, we can and must do more to ensure that proven cessation treatments are reaching the people that need them. Today I'm calling on healthcare professionals, health systems, employers, insurers, public health professionals, and policy makers to take action to put an end to the staggering—and completely preventable—human and financial tolls that smoking takes on our country.

To read the full report and its related materials, go to SurgeonGeneral.gov.

Table of Contents

Note from the Surgeon General	i
Quitting Smoking Saves Lives and Money	2
Introduction.....	2
Quitting Smoking Trends in the United States.....	4
Health Benefits of Quitting Smoking	6
Quitting Smoking Saves Lives	6
Quitting Smoking Improves Heart Health	8
Quitting Smoking Makes Breathing Easier.....	9
Quitting Smoking Protects Against Cancer	10
Quitting Smoking Helps Give Babies a Healthy Start	11
Tools and Resources to Quit Smoking.....	12
Counseling or Coaching	12
Medications.....	13
E-Cigarettes and Quitting	14
Taking Action to Save Millions of Lives	15
Support for Quitting	16



Quitting Smoking Saves Lives and Money

Introduction

The progress made in reducing cigarette smoking in the United States over the past five decades represents one of the most notable public health achievements of the past century. Today cigarette smoking among U.S. adults is at an all-time low of nearly 14%. However, despite this progress, 34 million American adults still smoke, and smoking remains the leading cause of preventable disease and death in our country.

The body of research on the health benefits of smoking cessation has grown substantially over the last three decades. We know more about the benefits of quitting than ever before. We know that quitting lowers the risk of death and the risk for many adverse health effects, including poor reproductive health outcomes, cardiovascular diseases, chronic obstructive pulmonary disease (COPD), and cancer. We also know that, while quitting smoking earlier in life yields the greatest health benefits, quitting at any age is beneficial. Quitting smoking is also beneficial for people who have already been diagnosed with coronary heart disease or COPD. In addition to its health benefits, quitting smoking also reduces the significant financial burden that smoking places on people who smoke, healthcare systems, and society as a whole.

The good news is that most adults who smoke want to quit and that we know what works to help improve their chances of quitting successfully. This report highlights the array of proven clinical treatments and tools available to help people quit. In addition, the report outlines proven population-based policies and interventions that can motivate people to try to quit smoking and that can help them succeed in quitting for good.

However, this report also highlights several key findings that underscore the challenges we face in achieving success in further reducing smoking:

- ▶ Although just over half of adults who currently smoke try to quit each year, fewer than one in 10 succeed in quitting each year. While proven treatments are available, fewer than one third of people who smoke use these treatments when trying to quit.

SMOKING IS THE LEADING CAUSE OF PREVENTABLE DISEASE AND DEATH IN THE UNITED STATES.

ABOUT 480,000 AMERICANS

die from smoking each year, accounting for nearly one in five deaths.

16 MILLION AMERICANS

live with a serious disease caused by smoking.

Smoking-related illness continues to cost the Nation more than

\$300 BILLION EVERY YEAR.

- ▶ Cigarette smoking remains highest among certain populations, including people with mental health conditions and substance use disorders; people of low socioeconomic status; people without health insurance; Medicaid enrollees; lesbian, gay, bisexual, and transgender adults; people with disabilities or limitations; and American Indians and Alaska Natives.
- ▶ Marked disparities in cessation behaviors, such as making a past-year quit attempt and achieving recent successful cessation, persist across certain population subgroups, including subgroups defined by education, poverty status, age, health insurance status, race/ethnicity, and geography.

These challenges are compounded by the actions of the tobacco industry, which continues to aggressively market addictive and deadly products in order to retain existing customers and recruit new ones. Additionally, an array of new tobacco products, including new types of e-cigarettes, continue to enter the marketplace.



Smoking will remain the leading cause of preventable disease and death in the U.S. unless more is done to help the millions of Americans who smoke to quit. The science is clear: we know what works. The evidence-based strategies described in this *Surgeon General's Report* must be sustained and implemented on a broader scale. Without coordinated action at the clinical, system, and population levels, nearly half a million Americans will continue to die each year from smoking-related diseases. And for every American who dies from a smoking-related disease, about 30 more are living with a serious disease caused by smoking. Unless we do more, smoking will continue to be costly for the people who smoke, health systems, and society as a whole.



Quitting Smoking Trends in the United States

34 MILLION ADULTS
in the U.S. currently smoke cigarettes

NEARLY 70% OF U.S. ADULTS
who smoke say they want to quit

JUST OVER HALF OF U.S. ADULTS
who smoke try to quit each year

THREE IN FIVE U.S. ADULTS
who have ever smoked cigarettes have quit

Since the first Surgeon General's report on smoking and health was released in 1964, cigarette smoking among U.S. adults has declined from nearly 43% in 1964 to nearly 14% in 2018. Another indicator of the progress that has been made in reducing smoking is the fact that three in five adults who ever smoked cigarettes have quit. In addition, nearly 70% of adults who smoke say they want to quit, and just over half try to quit each year.

However, evidence presented in this report also highlights the work that remains to help the millions of adults who smoke to quit:

- ▶ Disparities in quitting behaviors persist across certain populations, as defined by education, poverty status, age, health insurance status, race/ethnicity, and geography.
- ▶ Over 40% of adults who smoke do not receive advice to quit from a healthcare professional.

- ▶ Fewer than one in three adults who smoke use cessation medications approved by the U.S. Food and Drug Administration (FDA) or behavioral counseling when trying to quit.
- ▶ Fewer than one in 10 U.S. adults who smoke succeed in quitting each year.

In addition, many adults who smoke use two or more tobacco products. Research suggests that these individuals may be more dependent on nicotine and have greater difficulty quitting all tobacco products.





Health Benefits of Quitting Smoking

Quitting Smoking Saves Lives

Tobacco smoke contains a deadly mix of more than 7,000 chemicals; hundreds are harmful, and about 70 cause cancer. Extensive research has proven that smoking harms nearly every organ of the body, causes many diseases, and reduces health overall.

The 1990 Surgeon General's report was the first report to review the scientific evidence on the health benefits of quitting smoking. The report was clear – quitting smoking has major and immediate health benefits for men and women of all ages.

The current report expands on the findings of the 1990 report, reaching several important conclusions about the health benefits of quitting smoking, including:

- ▶ Quitting smoking reduces the risk of premature death, improves health, and enhances quality of life. Quitting can add as much as 10 years to life expectancy.
- ▶ Quitting smoking lowers the risk for many adverse health effects, including poor reproductive health outcomes, cardiovascular diseases, COPD, and 12 types of cancer.

QUITTING SMOKING LOWERS THE RISK

for many adverse health effects, including reproductive health outcomes, cardiovascular diseases, COPD, and 12 types of cancer.

- ▶ Quitting smoking is also beneficial for people who have already been diagnosed with coronary heart disease or COPD.
- ▶ Quitting smoking reduces the costs of smoking for people who smoke, healthcare systems, and society.
- ▶ While quitting earlier in life yields greater health benefits, quitting smoking is beneficial to health at any age. Even people who have smoked for many years or have smoked heavily will benefit from quitting.

HEALTH BENEFITS OF QUITTING SMOKING



IMPROVES health and
INCREASES life expectancy



LOWERS
risk of 12 types
of cancer



LOWERS
risk of
cardiovascular
diseases



LOWERS
risk of chronic
obstructive
pulmonary
disease (COPD)



LOWERS
risk of
some poor
reproductive
health outcomes



BENEFITS people who have
already been diagnosed with
coronary heart disease or COPD



BENEFITS people at any age –
even people who have smoked for
years or have smoked heavily will
benefit from quitting

Quitting Smoking Improves Heart Health

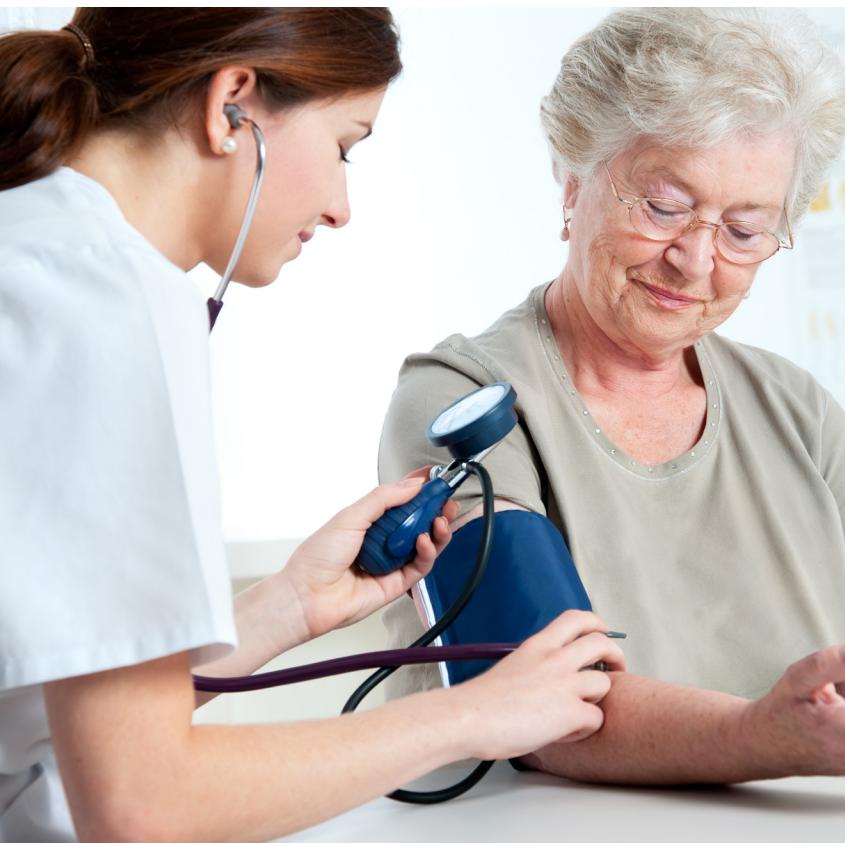
Cardiovascular disease is the leading cause of death in the U.S. People who smoke are at greater risk for diseases that affect the heart and blood vessels, including coronary heart disease and stroke.

Coronary Heart Disease

Coronary heart disease (CHD) occurs when the walls of arteries that carry blood to the heart are narrowed by plaque, a process known as atherosclerosis. Smoking increases the formation of plaque in the arteries.

Atherosclerosis decreases blood flow to the heart, which can cause chest pain, heart attacks, heart arrhythmias, and heart failure.

Research shows that quitting smoking slows the progression of atherosclerosis and reduces the risk of CHD. This risk drops rapidly after quitting and then declines more slowly over the longer term. In addition, people who have already been diagnosed with CHD can lower their risk of having another heart attack and their risk of dying from heart disease by quitting smoking.



Stroke

Stroke is the fifth leading cause of death in the U.S., causing over 140,000 deaths each year. A stroke occurs when the blood supply to the brain is blocked or when a blood vessel in the brain bursts, causing parts of the brain to become damaged or die. Strokes can cause permanent brain damage or death. Smoking increases the risk of stroke. Current evidence shows that quitting smoking reduces the risk of stroke over time to approach that of people who have never smoked.

QUITTING SMOKING REDUCES THE RISK OF CORONARY HEART DISEASE AND STROKE.

The risk of developing coronary heart disease drops immediately after quitting and then declines more slowly over time.

After quitting, the risk of stroke drops over time to approach that of people who have never smoked.

Quitting Smoking Makes Breathing Easier

Cigarette smoke contains thousands of chemicals that are inhaled and then deposited throughout the lungs. Some of these chemicals are known to injure the cells and tissues in the lung.

Chronic Obstructive Pulmonary Disease

Smoking is the leading cause of COPD among Americans. COPD, which includes chronic bronchitis and emphysema, is a lung disease in which damaged airways make it hard to breathe. Progression of the disease over time can lead to worsened symptoms and even death.

COPD has no cure, but it can be treated. Current research shows that quitting smoking reduces the risk of developing COPD. Quitting can also reduce or delay the loss of lung function and slow the progression of COPD.

Asthma

Asthma is a chronic disease that affects the airways of the lungs. It causes episodes of wheezing, coughing, and trouble breathing due to swelling and inflammation of the airways.

Previous Surgeon General's reports found that smoking harms the lungs of people with asthma. People who have asthma and smoke have worse symptoms, higher rates of hospitalization, and experience faster loss of lung function compared to people who have asthma and do not smoke.

The current report highlights evidence which suggests that quitting smoking may reduce asthma symptoms and improve lung function in adults with asthma.



COPD HAS NO CURE, BUT IT CAN BE TREATED.

Current research shows that quitting smoking reduces the risk of developing COPD. Quitting can also reduce or delay the loss of lung function and slow the progression of COPD.

Quitting Smoking Protects Against Cancer

Of the more than 7,000 chemicals in cigarette smoke, at least 70 are known to cause cancer. Many of these chemicals damage DNA, which can cause cells in the body to change and grow abnormally.

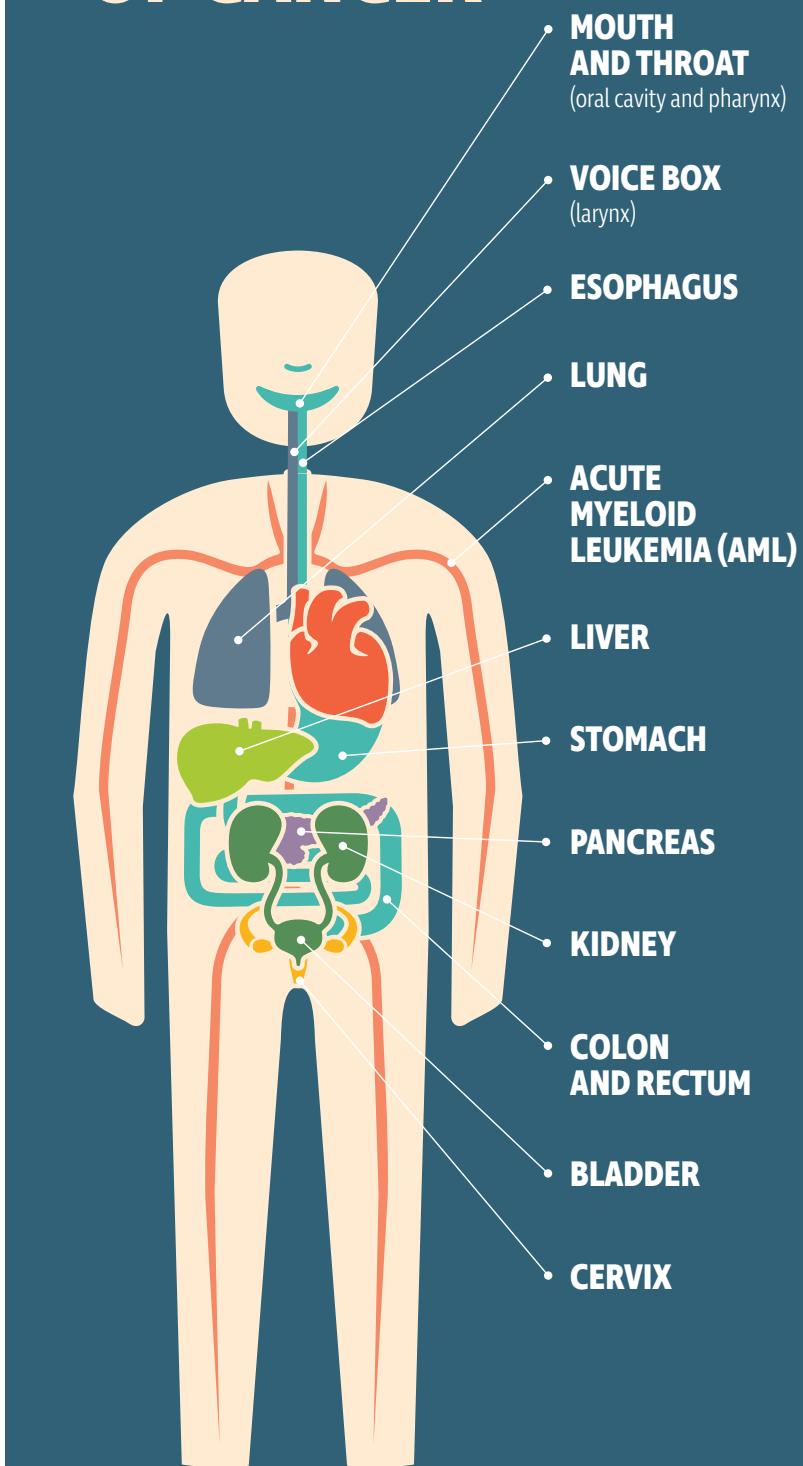
Cancer occurs when cells grow uncontrollably. One out of every three cancer deaths in the U.S. is linked to cigarette smoking. Smoking is a known cause of 12 different types of cancer. Cigarette smoking is the number one cause of lung cancer.

Quitting Smoking Reduces the Risk of 12 Cancers

Evidence presented in this report shows that quitting smoking reduces the risk of 12 different cancers, including cancer of the lung, voice box (larynx), mouth and throat (oral cavity and pharynx), esophagus, pancreas, bladder, stomach, colon and rectum, liver, cervix, and kidney, and acute myeloid leukemia (AML). Additionally, evidence presented in the current report suggests that all people with cancer and cancer survivors can reduce their risk of death by quitting smoking.

The fact that quitting smoking reduces the risk for lung cancer is particularly important because lung cancer kills more Americans each year than any other type of cancer. This is true for both men and women. After quitting, the risk of developing lung cancer drops steadily compared to people who continue to smoke. Ten to fifteen years after a person quits smoking, their risk of developing lung cancer drops to half the risk of those who smoke, and their risk continues to drop further over time.

QUITTING SMOKING LOWERS RISK OF 12 TYPES OF CANCER



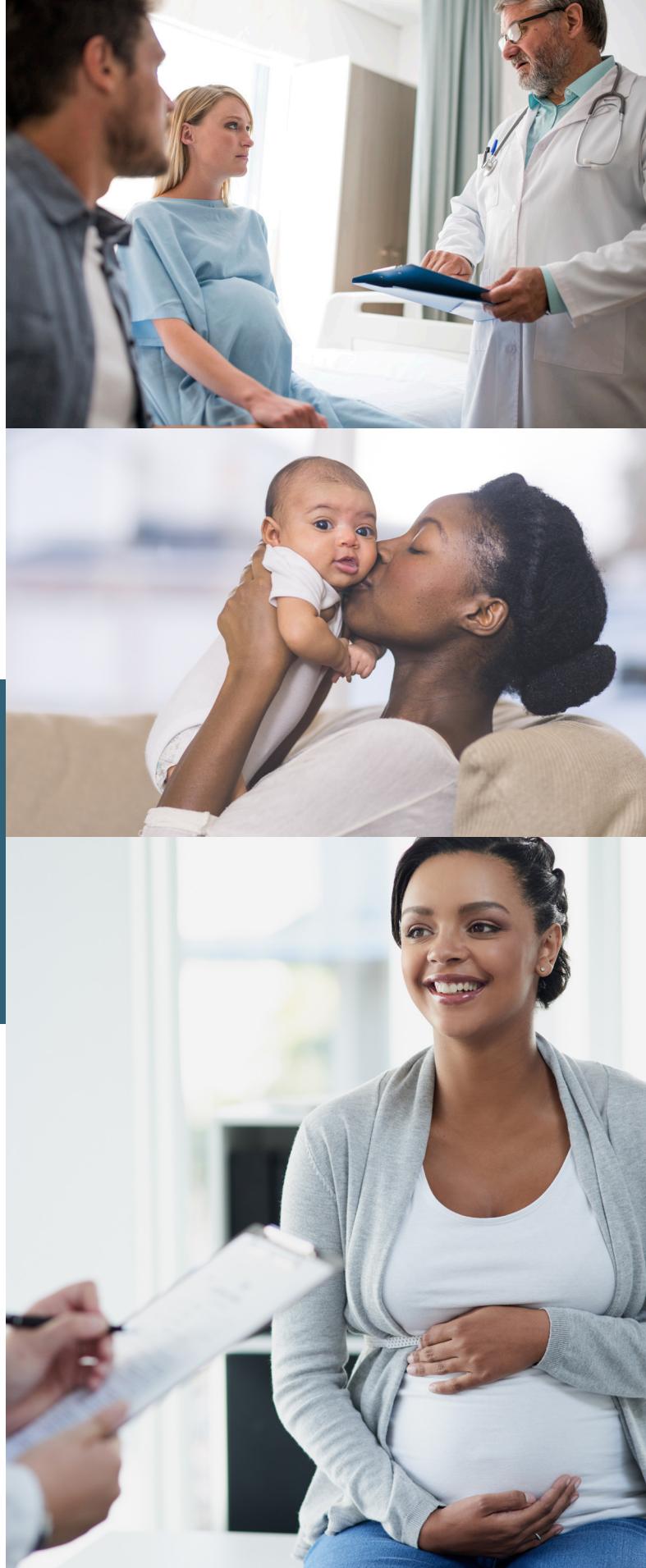
Quitting Smoking Helps Give Babies a Healthy Start

It has long been known that smoking is harmful to reproductive health. Previous Surgeon General's reports identified links between smoking and poor reproductive health outcomes, including pregnancy complications, preterm birth, low birth weight, some birth defects, decreased fertility in both women and men, and erectile dysfunction. Science on the reproductive health benefits of quitting smoking has grown over time. The evidence presented in this report shows that quitting smoking by pregnant women benefits their health and the health of their babies.

THE BEST TIME TO QUIT SMOKING IS BEFORE PREGNANCY,

and the next best time is as early in pregnancy as possible. However, quitting at any time during pregnancy can help give babies a healthier start on life.

The effects of smoking on birth outcomes have been studied extensively. Research has found that women who smoke are more likely to deliver their babies early (premature or preterm birth) and to deliver low birth weight babies, even if born full term. Both preterm delivery and low birth weight are associated with increased risk for infant death. Being born full term and normal weight can help give babies a healthy start. Studies suggest that quitting smoking before pregnancy or early in pregnancy reduces the risk of preterm delivery. In addition, evidence presented in this report shows that quitting smoking during pregnancy reduces the risk of delivering a low birth weight baby. In fact, this report concludes that quitting early in pregnancy eliminates the adverse effects of smoking on fetal growth.





Tools and Resources to Quit Smoking

Quitting smoking can be hard, but it is possible. But the good news is that we know what works to help people succeed in quitting. This Surgeon General's report highlights an array of effective cessation treatments, including counseling and FDA-approved medications. While counseling and medication are each effective alone, using them together—for example, receiving counseling by calling 1-800-QUIT-NOW and using nicotine replacement therapy—can more than double one's chances of successfully quitting.

Counseling or Coaching

Behavioral counseling increases the chances of quitting successfully. Counseling can help people learn how to cope with nicotine withdrawal, cravings and urges to smoke, stress, mood changes, and other challenges associated with quitting smoking.

Counseling can be delivered in a variety of ways, including in-person by a healthcare professional, either one-on-one or in a group, and over the telephone through a quitline (you can reach your state quitline by calling 1-800-QUIT-NOW). Text messaging and web-based cessation support can also help people successfully quit.

QUITTING CAN BE DIFFICULT, BUT IT IS POSSIBLE,
and quitting is worth the effort. Using counseling and medication increases the chances of quitting successfully.



Quitlines are a free, convenient, and confidential source of cessation assistance for people seeking to quit smoking. They are available in all 50 U.S. states, the District of Columbia, Puerto Rico, and Guam. Quitlines are also available in several different languages. Research shows that quitline counseling increases the chances of quitting smoking when provided alone or in combination with quit smoking medications.

When people access a quitline, they can talk confidentially with a trained counselor and get practical information on how to quit, referral to other quit smoking resources, mailed self-help materials, information on cessation medications, and, in some cases, a free "starter kit" of cessation medications.

Medications

Seven medications have been shown to be effective for helping adults quit smoking and have been approved for this purpose by the FDA. These medications include five forms of nicotine replacement therapy (NRT) and two non-nicotine medications (varenicline and bupropion).

► NRT is both prescription and over-the-counter medication that treats physical dependence on nicotine. NRT can help relieve withdrawal symptoms without exposing people to the thousands of chemicals found in cigarettes. NRT is available in five forms: nicotine patches, gum, lozenges, inhalers, and nasal spray. Nicotine patches, gum, and lozenges are available over-the-counter; however, a prescription may be needed for insurance coverage of these medicines. Nicotine inhalers and nasal sprays are available by prescription only.

- Varenicline is a prescription medication that works by interfering with nicotine receptors in the brain. It reduces nicotine withdrawal symptoms, including cravings, while also blocking the effects of nicotine on nicotine receptors, thereby diminishing the rewarding effects of cigarettes.
- Bupropion is a prescription medication that decreases cravings and other nicotine withdrawal symptoms. It also has some nicotine receptor blocking activity, which may diminish the rewarding effects of cigarettes.

Using combinations of NRT can further increase the likelihood of quitting. For example, combining long-acting NRT (nicotine patch) with a short-acting NRT (such as nicotine gum or lozenge) is more effective than using a single form of NRT.

Cessation medications approved for adult use by the FDA are safe except when medically contraindicated for people with specific health conditions. There are also potential safety concerns for pregnant women and limited evidence about the effectiveness of cessation medications in this population. As a result, pregnant women should consult with a doctor before using these medications. There is also limited evidence about the effectiveness of cessation medications for people who use smokeless tobacco, light smokers (people who smoke five or fewer cigarettes daily), and adolescents.

TOBACCO DEPENDENCE IS A CHRONIC, RELAPSING CONDITION DRIVEN BY ADDICTION TO NICOTINE,

the addictive drug found in all tobacco products. Nicotine dependence makes it hard to quit smoking. Most people try to quit several times before succeeding.

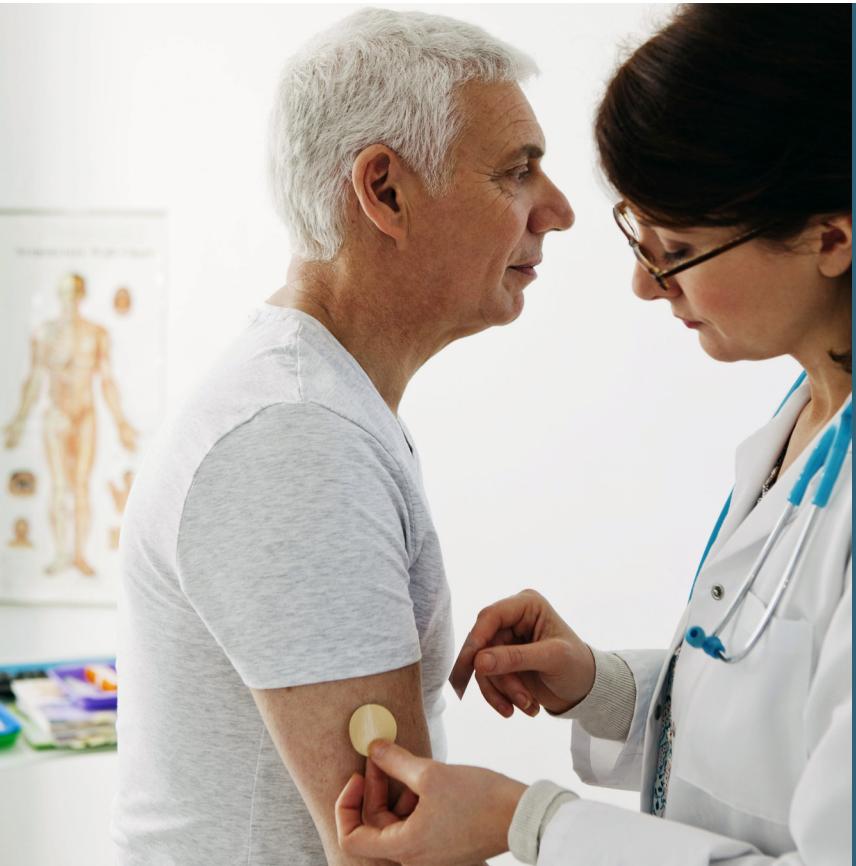
People seeking to quit smoking should consult a doctor, nurse, pharmacist, or other healthcare professional. They can help with selecting quit smoking medications, accessing the medications, and advising on how to use the medications correctly. To have the best chance of quitting, it is important to take medications as directed. This includes consistently using medications in the right way and using them for the recommended amount of time.

E-Cigarettes and Quitting

Many adults who smoke are interested in using e-cigarettes to quit cigarettes. Research is uncertain on whether e-cigarettes, in general, increase smoking cessation. Some research suggests that using e-cigarettes containing nicotine is associated with greater smoking cessation than e-cigarettes that don't contain nicotine, and some

research suggests that more frequent use of e-cigarettes is associated with greater smoking cessation than less frequent use. E-cigarettes are not currently approved by the FDA as a quit smoking aid, and more research is needed on whether e-cigarettes are effective for smoking cessation and to better understand the health effects of e-cigarettes.

The use of any tobacco products, including e-cigarettes, is not safe for youth, young adults, or pregnant women, as well as adults who do not currently use tobacco products. In order for adult smokers to achieve any meaningful health benefits from e-cigarettes, they would need to fully switch to e-cigarettes and stop smoking cigarettes and other tobacco products completely. Among those who have switched completely, the ultimate goal should be to also stop using e-cigarettes completely to achieve the maximum health benefit.



MANY SERVICES AND TREATMENTS TO HELP PEOPLE QUIT SMOKING ARE AVAILABLE FREE OF CHARGE.

For example, state quitline services are free, and counseling and medications are often covered in whole or in part by health insurance, including Medicaid and Medicare.



Taking Action to Save Millions of Lives

This Surgeon General's report documents an array of effective clinical interventions for increasing the number of Americans who successfully quit smoking, including counseling and medications. The report also highlights important interventions that increase access to treatments and resources for quitting.

These include health system changes that make it easier for healthcare professionals to deliver cessation treatments and comprehensive, barrier-free insurance coverage that increases the use of cessation treatment services. Finally, the report outlines proven population-based interventions that create an environment that motivates people who smoke to quit and makes it easier for them to do so. These interventions include:

- ▶ Raising the price of cigarettes;
- ▶ Implementing hard-hitting mass media campaigns, such as the Centers for Disease Control and Prevention's (CDC) *Tips From Former Smokers*® campaign;
- ▶ Implementing smokefree policies in workplaces, restaurants, and bars;
- ▶ Requiring pictorial health warnings on cigarette packaging; and
- ▶ Maintaining fully funded statewide tobacco control programs that are comprehensive, sustained, and accountable.

The substantial reduction in smoking that has occurred since the mid-1960s and the advances that have occurred in the science and practice of cessation interventions over the last three decades are commendable public health achievements. However, more work needs to be done. This report calls for immediate, coordinated action to sustain and accelerate our progress in increasing smoking cessation and reducing smoking rates. Working together, we can end the epidemic of tobacco-related disease and death that has plagued our country for too long.



Support for Quitting

Quitting smoking is one of the most important actions people can take to improve their health. This is true regardless of age or how long they've been smoking. Quitting smoking can be difficult, but there are proven treatments and strategies to help people successfully quit smoking.

PEOPLE WHO ARE READY TO QUIT SMOKING

should talk to a doctor, nurse, pharmacist, or other healthcare professional about tools and approaches that can help them quit successfully.

Most people find that a combination of resources and tools works best. In particular, combining cessation counseling and medication gives a person the best chance of quitting for good. Most people need several tries to successfully quit.

FREE QUIT SMOKING RESOURCES INCLUDE:

Call a Quitline at
1-800-QUIT-NOW
(1-800-784-8669)

IN SPANISH:
1-855-DÉJELO-YA (1-855-335-3569)

IN MANDARIN AND CANTONESE:
1-800-838-8917

IN KOREAN:
1-800-556-5564

IN VIETNAMESE:
1-800-778-8440

For More Information

- ▶ To read the full report and access related materials, visit:
 - ▶ www.SurgeonGeneral.gov
 - ▶ www.CDC.gov/CessationSGR
- ▶ To learn more about tobacco control and prevention and quitting smoking, visit:
 - ▶ www.CDC.gov/tobacco
 - ▶ www.CDC.gov/quit
 - ▶ www.smokefree.gov