# Quitting Smoking: Why to Quit and How to Get Help

- Quitting smoking reduces the health risks caused by smoking
- Cigarette smoking causes many types of cancer, including cancers of the lung, esophagus, larynx (voice box), mouth, throat, kidney, bladder, pancreas, stomach, and cervix, as well as acute myeloid leukemia
- Quitting smoking substantially reduces the risk of developing and dying from cancer
- Strong and consistent evidence shows that nicotine replacement products can help people quit smoking. These products are available in five forms—patch, gum, lozenge, nasal spray, and inhaler
- Bupropion and varenicline are prescription medications that can also help smokers quit

## WHAT HEALTH PROBLEMS ARE CAUSED BY SMOKING?

Smoking harms nearly every organ of the body and diminishes a person's overall health. Smoking is a leading cause of cancer and of death from cancer. It causes cancers of the lung, esophagus, larynx (voice box), mouth, throat, kidney, bladder, pancreas, stomach, and cervix, as well as acute myeloid leukemia.

Smoking also causes heart disease, stroke, lung disease (chronic bronchitis and emphysema), hip fractures, and cataracts. Smokers are at higher risk of developing pneumonia and other airway infections.

A pregnant smoker is at higher risk of having her baby born too early and with an abnormally low weight. A woman who smokes during or after pregnancy increases her infant's risk of death from Sudden Infant Death Syndrome (SIDS).

Millions of Americans have health problems caused by smoking. Cigarette smoking and exposure to tobacco smoke cause an estimated average of 438,000 premature deaths each year in the United States. Of these premature deaths, about 40 percent are from cancer, 35 percent are from heart disease and stroke, and 25 percent are from lung disease. Smoking is the leading cause of premature, preventable death in this country.

Regardless of their age, smokers can substantially reduce their risk of disease, including cancer, by quitting.

## DOES TOBACCO SMOKE CONTAIN HARMFUL CHEMICALS?

Yes. Tobacco smoke contains chemicals that are harmful to both smokers and nonsmokers. Breathing even a little tobacco smoke can be harmful. Of the 4,000 chemicals in tobacco smoke, at least 250 are known to be harmful

(4, 5). The toxic chemicals found in smoke include hydrogen cyanide (used in chemical weapons), carbon monoxide (found in car exhaust), formaldehyde (used as an embalming fluid), ammonia (used in household cleaners), and toluene (found in paint thinners).

Of the 250 known harmful chemicals in tobacco smoke, more than 50 have been found to cause cancer. These chemicals include:

- arsenic (a heavy metal toxin)
- benzene (a chemical found in gasoline)
- beryllium (a toxic metal)
- cadmium (a metal used in batteries)
- chromium (a metallic element)
- ethylene oxide (a chemical used to sterilize medical devices)
- nickel (a metallic element)
- polonium–210 (a chemical element that gives off radiation)
- vinyl chloride (a toxic substance used in plastics manufacture)

## WHAT ARE THE IMMEDIATE BENEFITS OF QUITTING SMOKING?

The immediate health benefits of quitting smoking are substantial. Heart rate and blood pressure, which were abnormally high while smoking, begin to return to normal. Within a few hours, the level of carbon monoxide in the blood begins to decline. (Carbon monoxide, a colorless, odorless gas found in cigarette smoke, reduces the blood's ability to carry oxygen.) Within a few weeks, people who quit smoking have improved circulation, don't produce as much phlegm, and don't cough or wheeze as often. Within several months of quitting, people can expect significant improvements in lung function.

## WHAT ARE THE LONG-TERM BENEFITS OF QUITTING SMOKING?

Quitting smoking reduces the risk of cancer and other diseases, such as heart disease and lung disease, caused by smoking. People who quit smoking, regardless of their age, are less likely than those who continue to smoke to die from smoking-related illness. Studies have shown that quitting at about age 30 reduces the chance of dying from smoking-related diseases by more than 90 percent. People who quit at about age 50 reduce their risk of dying prematurely by 50 percent compared with those who continue to smoke. Even people who quit at about age 60 or older live longer than those who continue to smoke.

## DOES QUITTING SMOKING LOWER THE RISK OF CANCER?

Quitting smoking substantially reduces the risk of developing and dying from cancer, and this benefit increases the longer a person remains smoke free. However, even after many years of not smoking, the risk of lung cancer in former smokers remains higher than in people who have never smoked.

The risk of premature death and the chance of developing cancer due to

cigarettes depend on the number of years of smoking, the number of cigarettes smoked per day, the age at which smoking began, and the presence or absence of illness at the time of quitting. For people who have already developed cancer, quitting smoking reduces the risk of developing a second cancer.

## SHOULD SOMEONE ALREADY DIAGNOSED WITH CANCER BOTHER TO QUIT SMOKING?

Yes. There are many reasons that people diagnosed with cancer should quit smoking. For those having surgery or other treatments, quitting smoking helps improve the body's ability to heal and respond to the cancer treatment, and it lowers the risk of pneumonia and respiratory failure. Also, quitting smoking may lower the risk of the cancer returning or a second cancer forming.

## WHAT ARE SOME OF THE CHALLENGES ASSOCIATED WITH QUITTING SMOKING?

Quitting smoking may cause short-term problems, especially for those who have smoked a large number of cigarettes for a long period of time:

- Feeling sad or anxious: People who quit smoking are likely to feel depressed, anxious, irritable, and restless, and may have difficulty sleeping or concentrating.
- Gaining weight: Increased appetite is a common withdrawal symptom after quitting smoking, and studies show that people who quit smoking increase their food intake. Although most smokers gain less than 10 pounds, for some people the weight gain can be troublesome. Regular physical activity can help people maintain a healthy weight.

Depression, anxiety, restlessness, weight gain, and other problems are symptoms of nicotine withdrawal. Many people find that nicotine replacement products and other medicines may relieve these problems However, even without medication, withdrawal symptoms and other problems do subside over time. It helps to keep in mind that people who kick the smoking habit have the opportunity for a healthier future.

## CAN A DOCTOR, DENTIST, OR PHARMACIST HELP A PERSON QUIT SMOKING?

Doctors, dentists, and pharmacists can be good sources of information about the health risks of smoking and the benefits of quitting. They can describe the proper use and potential side effects of nicotine replacement therapy and other medicines, and they can help people find local quit smoking resources.

## HOW CAN I HELP SOMEONE I KNOW QUIT SMOKING?

It's understandable to be concerned about someone you know who currently smokes. It's important to find out if this person wants to quit smoking. Most smokers say they want to quit. If they don't want to quit, try to find out why.

Here are some things you can do to help:

- Express things in terms of your own concern about the smoker's health ("I'm worried about. . . ").
- Acknowledge that the smoker may get something out of smoking and may find it difficult to quit.
- Be encouraging and express your faith that the smoker can quit for good.
- Suggest a specific action, such as calling a smoking quitline, for help in quitting smoking.
- Ask the smoker for ways you can provide support.

Here are two things you should not do:

- Don't send quit smoking materials to smokers unless they ask for them.
- Don't criticize, nag, or remind the smoker about past failures.

## WHAT ARE NICOTINE REPLACEMENT PRODUCTS?

Nicotine is the substance in cigarettes and other forms of tobacco that causes addiction. Nicotine replacement products deliver small, measured doses of nicotine into the body, which helps to relieve the cravings and withdrawal symptoms often felt by people trying to quit smoking. Strong and consistent evidence shows that nicotine replacement products can help people quit smoking.

It's far less harmful for a person to get nicotine from a nicotine replacement product than from cigarettes because tobacco smoke contains many toxic and cancer-causing substances. Long-term use of nicotine replacement products is not known to be associated with any serious harmful effects.

All nicotine replacement products, which are approved by the U.S. Food and Drug Administration (FDA) and available in the following five forms, appear to be equally effective:

- The nicotine patch is available over the counter (without a prescription). A new patch is worn on the skin each day, supplying a small but steady amount of nicotine to the body. The nicotine patch is sold in varying strengths as an 8-week quit smoking treatment. Nicotine doses are gradually lowered as the treatment progresses. The nicotine patch may not be a good choice for people with skin problems or allergies to adhesive tape. Also, people who experience the side effect of vivid dreams may opt to wear the patch only during the daytime.
- Nicotine gum is available over the counter in 2- and 4-mg strengths. When a person chews nicotine gum and then places the chewed product between the cheek and gum tissue, nicotine is released into the bloodstream through the lining of the mouth. To keep a steady amount of nicotine in the body, a new piece of gum can be chewed every 1 or 2 hours. The 4-mg dose appears to be more effective among highly dependent smokers (those who smoke 20 or more cigarettes per day). Nicotine gum might not be appropriate for people with temporomandibular joint (TMJ)

disease or for those with dentures or other dental work such as bridges. The gum releases nicotine more effectively when coffee, juice, and other acidic beverages are not consumed at the same time.

- The nicotine lozenge is also available over the counter in 2- and 4-mg strengths. The use of the lozenge is similar to that of nicotine gum; it is placed between the cheek and gum tissue and allowed to dissolve. Nicotine is released into the bloodstream through the lining of the mouth. The lozenge works best when used every 1 or 2 hours and when coffee, juice, and other acidic beverages are not consumed at the same time.
- Nicotine nasal spray is available by prescription only. The spray comes in a pump bottle containing nicotine that tobacco users can inhale when they have an urge to smoke. Absorption of nicotine via the spray is faster than that achieved with any of the other types of nicotine replacement. This product is not recommended for people with nasal or sinus conditions, allergies, or asthma, nor is it recommended for young tobacco users. Side effects from the spray include sneezing, coughing, and watering eyes, but these problems usually go away with continued use of the spray.
- A nicotine inhaler, also available only by prescription, delivers a vaporized form of nicotine to the mouth through a mouthpiece attached to a plastic cartridge. Even though it is called an inhaler, the device does not deliver nicotine to the lungs the way a cigarette does. Most of the nicotine only travels to the mouth and throat, where it is absorbed through the mucous membranes. Common side effects include throat and mouth irritation and coughing. Anyone with a bronchial problem such as asthma should use it with caution.

Experts recommend combining nicotine replacement therapy with advice or counseling from a doctor, dentist, pharmacist, or other health care provider. Also, experts suggest that smokers quit using tobacco products before they start using nicotine replacement products (16). Too much nicotine can cause nausea, vomiting, dizziness, diarrhea, weakness, or rapid heartbeat.

## ARE THERE PRODUCTS TO HELP PEOPLE QUIT SMOKING THAT DO NOT CONTAIN NICOTINE?

**Bupropion**, a prescription antidepressant marketed as Zyban®, was approved by the FDA in 1997 to treat nicotine addiction. This drug can help to reduce nicotine withdrawal symptoms and the urge to smoke (13), and can be used safely with nicotine replacement products. Some common side effects of bupropion are dry mouth, difficulty sleeping, headache, dizziness, and skin rash. People should not use this drug if they have a seizure condition such as epilepsy or an eating disorder such as anorexia nervosa or bulimia, or if they are taking other medicines that contain bupropion hydrochloride. Also, people should avoid using alcohol while taking buproprion because alcohol consumption increases the risk of having a seizure.

**Varenicline**, a prescription medicine marketed as ChantixTM, was approved by the FDA in 2006 to help cigarette smokers stop smoking. This drug may help those who wish to quit by easing their withdrawal symptoms and by blocking the effects of nicotine from cigarettes if they resume smoking. Some common side effects of varenicline are nausea, changes in dreaming, constipation, gas, and vomiting. People should not use this drug if they have kidney problems, and women should not use this drug if they are pregnant, plan to become pregnant, or are breastfeeding.

Although **nortriptyline** and **clonidine** are not currently approved by the FDA for the treatment of nicotine addiction, doctors sometimes prescribe these drugs to help people quit smoking.

## WHAT ABOUT COMBINING MEDICATIONS?

Some health care providers suggest that combining the nicotine patch with nicotine gum or nicotine nasal spray may work better than using a single type of nicotine replacement therapy. Nicotine gum in combination with nicotine patch therapy may also reduce withdrawal symptoms better than either medication alone. The patch provides a base level of nicotine, and the additional products can deliver extra nicotine when cravings or withdrawal symptoms occur. Another option is the combination of bupropion and nicotine patch therapy . People who think they may benefit from combining medications should consult with their health care provider before making a decision.

## ARE THERE ALTERNATIVE METHODS TO HELP PEOPLE QUIT SMOKING?

Some people claim that alternative approaches such as hypnosis, acupuncture, acupressure, laser therapy, or electrostimulation may help reduce the symptoms associated with nicotine withdrawal. However, clinical studies have not shown that these alternative approaches help people quit smoking.

## WHAT IF A PERSON SMOKES AGAIN AFTER QUITTING?

Many smokers find it difficult to quit. People commonly quit smoking and then find themselves smoking again, especially in the first few weeks or months after quitting. People who smoke after quitting should try again to quit. Most people find that they need to persist in their attempts to quit smoking before they quit for good. It may take four or more attempts before smokers are able to quit for good. People who stop smoking for 3 months or longer have an excellent chance of remaining cigarette free for the rest of their lives.

## HOW DO I FIND AGENCIES AND ORGANIZATIONS THAT HELP PEOPLE QUIT SMOKING?

A number of agencies and organizations provide information and materials about where to find help to quit smoking. State and local health agencies often have information about community programs to help people quit smoking. The local or county government section in the phone book (blue pages) has current phone numbers for health agencies. Information to help people quit smoking is also available through community hospitals, the yellow pages (under "drug abuse and addiction"), public libraries, health maintenance organizations, health fairs, bookstores, and community quitlines.

Several federal agencies and national organizations provide information about how to quit smoking.

*Government*

The Tobacco Control Research Branch of the National Cancer Institute (NCI), a component of the National Institutes of Health, established the Smokefree.gov Web site in collaboration with the Centers for Disease Control and Prevention and the American Cancer Society to help people quit smoking. The Web site (www.smokefree.gov) provides an online guide, Clearing the Air: Quit Smoking Today, for smokers interested in quitting. The guide covers thinking about quitting, preparing to quit, quitting, and staying quit. Clearing the Air: Quit Smoking Today is also available as a print publication. Other publications available from the Web site include the following:

- *Clear Horizons* for smokers over age 50.
- *Forever FreeTM* for smokers who have recently quit.
- *Guía para Dejar de Fumar* for Spanish-speaking smokers.
- *Pathways to Freedom* for African American smokers.

Internet Web site: www.smokefree.gov

The National Network of Tobacco Cessation Quitlines, an initiative of the Department of Health and Human Services (HHS), routes callers to a state-run quitline where they can receive help with quitting smoking, publications, and referrals to other resources. Information about this service can be found on the Smokefree.gov Web site.

Telephone: 1–800–784–8669 (1–800–QUITNOW)

The National Institutes of Health (NIH) supports research to help prevent, detect, diagnose, and treat diseases and disabilities. NCI and several other agencies within NIH provide information on the harmful effects of smoking and offer tips for quitting.

- The National Cancer Institute's (NCI) Smoking Quitline offers a wide range of services, including individualized counseling, printed information, referrals to other sources, and recorded messages. Smoking cessation counselors are available to answer smoking-related questions in English or Spanish, Monday through Friday, 9:00 a.m. to 4:30 p.m., local time. Smoking cessation counselors are also available through LiveHelp (an online instant messaging service) at www.cancer.gov/help on the Internet. LiveHelp is available Monday through Friday, 9:00 a.m. to 11:00 p.m., Eastern time.

  Telephone: 1–877–448–7848 (1–877–44U–QUIT)

  Web site: www.cancer.gov

- The National Institute on Drug Abuse (NIDA) offers drug abuse and addiction information in English and Spanish. NIDA publications can be ordered from the National Clearinghouse for Alcohol and Drug Information (NCADI) at:

  Address:

  Center for Substance Abuse Prevention

  National Clearinghouse for Alcohol and Drug Information

  Post Office Box 2345

  Rockville, MD 20847–2345

  Telephone: 1–800–729–6686 (1–800–SAY–NO–TO)

  240–221–4019

  1–877–767–8432 (for Spanish-speaking callers)

  TTY: 1–800–487–4889 (for deaf or hard of hearing callers)

  Fax: 240–221–4292

  Web site: http://ncadi.samhsa.gov

- The Office on Smoking and Health of the Centers for Disease Control and Prevention distributes pamphlets, posters, scientific reports, and public service announcements about smoking, and maintains a bibliographic database of smoking- and health-related materials. The CDC's Smoking and Tobacco Use Web page is the home page of the CDC's Office on Smoking and Health. This site offers links to information about the prevention of tobacco use among youth, smoking cessation, and tobacco-related statistics.

  Address:

  Office on Smoking and Health

  National Center for Chronic Disease Prevention and Health Promotion

  Centers for Disease Control and Prevention

  Mail Stop K–50

  4770 Buford Highway, NE.

Atlanta, GA 30341–3717
Telephone: 1–800–232–4636 (1–800–CDC–INFO) (toll-free)
TTY: 1–888–232–6348 (for deaf and hard of hearing callers)
Fax: 770–488–4760
E-mail: tobaccoinfo@cdc.gov
Web site: www.cdc.gov/tobacco/osh/index.htm

- The Office of the Surgeon General has information about techniques being used to treat tobacco use and dependence. The Office of the Surgeon General's Web site has press releases, reports, and other information on tobacco use and quitting smoking.
  Address: Office of the Surgeon General
  Room 18–66
  5600 Fishers Lane
  Rockville, MD 20857
  Web site: www.surgeongeneral.gov/tobacco

- The Agency for Healthcare Research and Quality (AHRQ) issues quit smoking guidelines and other materials for physicians, health care professionals, and the general public. Printed copies are available by contacting:
  Address: AHRQ Publications Clearinghouse
  Post Office Box 8547
  Silver Spring, MD 20907–8547
  Telephone: 1–800–358–9295 (toll-free)
  703–437–2078 (for international callers)
  TTY: 1–888–586–6340 (for deaf and hard of hearing callers)
  Web site: www.ahrq.gov

*Nonprofit*

- The American Cancer Society (ACS) offers materials on quitting smoking and other smoking- and tobacco-related topics. The ACS also sponsors a quit smoking clinic called FreshStart, which is available in most of the United States. For more information or the telephone number for a local ACS office, contact ACS's National Home Office at:
  Address: 1599 Clifton Road, NE.
  Atlanta, GA 30329–4251
  Telephone: 1–800–227–2345 (1–800–ACS–2345)
  Web site: www.cancer.org

- The American Heart Association (AHA) has information on local and community-related intervention programs in schools, workplaces, and

health care sites. It also offers brochures on quitting smoking and the relationship between smoking and heart disease. For more information or the telephone number for a local AHA chapter, contact AHA's national office at:

Address: National Center

7272 Greenville Avenue

Dallas, TX 75231

Telephone: 1–800–242–8721 (1–800–AHA–USA1)

Web site: www.americanheart.org

- The American Lung Association (ALA), an organization dedicated to fighting smoking-related diseases, provides information about local quit smoking programs as well as its Freedom From Smoking® clinics for individuals and organizations. For more information or the telephone number for a local ALA chapter, contact ALA's national headquarters at:

  Address: Sixth Floor

  61 Broadway

  New York, NY 10006

  Telephone: 1–800–586–4872 (1–800–LUNG–USA)

  212–315–8700

  E-mail: info@lungusa.org

  Web site: www.lungusa.org

- Nicotine Anonymous provides support to people seeking freedom from nicotine addiction, including those using cessation programs and nicotine withdrawal aids. Group support is available, and recovery is based on the 12 Steps adapted from Alcoholics Anonymous. The Web site provides a searchable database of meetings by state and country. Internet and telephone meetings are also offered. Publications are available in nine languages: English, Danish, Farsi, French, German, Hungarian, Portuguese, Spanish, and Swedish. 10.19 8/17/07 Page 11

  Address: PMB #370

  419 Main Street

  Huntington Beach, CA 92648

  Telephone: 415–750–0328

  E-mail: info@nicotine-anonymous.org

  Web site: www.nicotine-anonymous.org

*Related NCI materials and Web pages:*

- National Cancer Institute Fact Sheet 10.17, The Truth About "Light" Cigarettes: Questions and Answers

  www.cancer.gov/cancertopics/factsheet/Tobacco/light-cigarettes)

- National Cancer Institute Fact Sheet 10.18, Secondhand Smoke: Questions and Answers
  www.cancer.gov/cancertopics/factsheet/Tobacco/ETS
- Clearing the Air: Quit Smoking Today
  www.smokefree.gov/pubs/clearing_the_air.pdf
- Forever Free™
  www.smokefree.gov/pdf.html
- Pathways to Freedom
  www.smokefree.gov/docs/pathways_final.pdf
- You Can Quit Smoking: Consumer Guide
  www.surgeongeneral.gov/tobacco/consquits.htm
- Smoking and Cancer Home Page
  www.cancer.gov/cancertopics/smoking

For more help, contact:
NCI's Cancer Information Service
Telephone (toll-free): 1–800–4–CANCER (1–800–422–6237)
TTY (toll-free): 1–800–332–8615
LiveHelp® online chat: https://cissecure.nci.nih.gov/livehelp/welcome.asp