Questions About Smoking, Tobacco, and Health

People have all sorts of questions about cigarettes, cigars, electronic cigarettes, spit and other types of smokeless tobacco, different tobacco products, nicotine, addiction, and quitting. Many of these questions are answered here.

We also answer some questions about how smoking and tobacco can affect a person's health, including the heart, circulation, and lungs. We discuss its effect on unborn babies and how it affects the risk of cancer and other diseases.

Please see the "To learn more" section to see other tobacco-related subjects we cover in more detail in separate documents.

Is smoking tobacco really addictive?

Addiction is marked by the repeated, compulsive seeking or use of a substance despite its harmful effects and unwanted consequences. Addiction is mental or emotional dependence on a substance. Nicotine is the known addictive substance in tobacco, and researchers are looking for other substances that may also contribute to tobacco dependence.

Regular use of tobacco products leads to addiction in many users. Nicotine is a drug found naturally in tobacco, which is as addictive as heroin or cocaine:

- When taken in small amounts, nicotine creates pleasant feelings that make the smoker want to smoke more. It acts on the chemistry of the brain and central nervous system, affecting the smoker's mood. Nicotine works very much like other addicting drugs, by flooding the brain's reward circuits with dopamine (a chemical messenger). Nicotine also gives you a little bit of an adrenaline rush – not enough to notice, but enough to speed up your heart and raise your blood pressure.
- Nicotine reaches the brain within seconds after taking a puff, and its effects start to wear off within a few minutes. This is what most often leads the smoker to light up

again. If the smoker doesn't smoke again soon, withdrawal symptoms start and get worse over time.

- The typical smoker takes about 10 puffs from each cigarette. A person smoking a pack per day gets about 200 "hits" of nicotine each day.
- Smokers usually become dependent on nicotine and suffer physical and emotional (mental or psychological) withdrawal symptoms when they stop smoking. These symptoms include irritability, nervousness, headaches, and trouble sleeping. The true marker for addiction, though, is that people still smoke even though they know smoking is bad for them – affecting their lives, their health, and their families in unhealthy ways. In fact, most people who smoke want to quit.

Researchers are also looking at other chemicals in tobacco that make it harder to quit. In the brains of animals, tobacco smoke causes chemical changes that are not fully explained by the effects of nicotine.

In one regular cigarette, the average amount of nicotine the smoker gets ranges between about 1 mg and 2 mg. But the cigarette itself contains more nicotine than this. The amount people actually take in depends on how they smoke, how many puffs they take, how deeply they inhale, and other factors.

All forms of tobacco have nicotine and other chemicals which are easily absorbed through the lungs with smoking and through the mouth or nose with oral tobacco (spit, snuff, or smokeless tobacco). From these entry points, nicotine quickly spreads throughout the body.

How powerful is nicotine addiction?

About 70% of smokers say they want to quit and about half try to quit each year, but only 4% to 7% succeed without help. This is because smokers not only become physically dependent on nicotine. There's also a strong emotional (psychological) dependence; this is what leads to relapse after quitting. The smoker may link smoking with social activities and many other activities, too. Smokers also may use tobacco to help manage unpleasant feelings and emotions, which can become a problem for some smokers when they try to quit. All of these factors make smoking a hard habit to break.

In fact, it may be harder to quit smoking than stop using cocaine or opiates like heroin. Researchers recently reviewed 28 different studies of people who were trying to quit using the substance they were addicted to. They focused on the people in the studies who didn't get any medicines to help them quit. (Many of these people had other kinds of support for quitting, such as behavioral therapy, so success rates may have been higher than if they'd had no help at all.) About 18% were able to quit drinking, and more than 40% were able to quit opiates or cocaine, but only 8% were able to quit smoking.

What does nicotine do?

Nicotine is a poison, and a large dose of nicotine can kill by stopping the muscles a person uses to breathe. But smokers usually take in much smaller amounts that the body can quickly break down and get rid of. The first dose of nicotine makes a person feel awake and alert, while later doses make them feel calm and relaxed.

Nicotine can make new smokers, and regular smokers who get too much of it, feel dizzy or sick to the stomach. The resting heart rate for young smokers increases 2 to 3 beats per minute. Nicotine also lowers skin temperature and reduces blood flow in the legs and feet. It may play a role in increasing smokers' risk of heart disease and stroke, but other substances in cigarette smoke likely play a bigger part.

Many people mistakenly think that nicotine is the substance in tobacco that causes cancer. This belief may cause some people to avoid using nicotine replacement therapy when trying to quit. Nicotine is what helps get (and keep) people addicted to tobacco, but other substances in tobacco cause cancer.

Research has shown that nicotine itself does affect the activities of certain normal cells and cancer cells. And some animal studies have shown that nicotine may help existing tumors grow and spread, but whether this happens in people is not yet known and more research is needed.

Why do people start smoking?

Most people start smoking as teens. Those who have friends and/or parents who smoke are more likely to start smoking than those who don't. Some teens say that they "just wanted to try it," or they thought it was "cool" to smoke.

The tobacco industry's ads, price breaks, and other promotions for its products are a big influence in our society. The tobacco industry spends billions of dollars each year to create and market ads that show smoking as exciting, glamorous, and safe.

Despite the fact that cigarette brand product placement in movies was banned by the 1998 Tobacco Master Settlement Agreement, cigarettes appeared in 2 out of 3 box office hit movies in 2005 – more than one-third of the movies were youth-rated films. The number of movies with tobacco-related scenes has gone down since 2005. But in 2010, more than 30% of top-grossing movies rated G, PG, and PG-13 had tobacco scenes. The numbers of movies showing smokers started going up again in 2011 and 2012. And studies show that young people who see smoking in movies are more likely to start smoking. The 2014 Surgeon General Report stated that cutting back smoking in movies aimed at youth (from 275 exposures per year down to 10 or less) could reduce teen smoking as much as 18%.

Another common way youth are exposed to tobacco is through the Internet, a largely unregulated source of entertainment. The effect the Internet has on teen smoking is an area of research interest.

TV ads for smoking have been banned for many years, but films that show tobacco brands are much more likely to include smoking scenes as part of their TV trailers. This undercuts the intent of the TV ad ban.

Who is most likely to become addicted?

Anyone who starts using tobacco can become addicted to nicotine. Studies show that smoking is most likely to become a habit during the teen years. The younger a person is when they begin to smoke, the more likely they are to become addicted to nicotine.

According to the 2012 Surgeon General's Report, very few people start smoking after age 25. Nearly 9 out of 10 adult smokers started by age 18, and 99% started by age 26. But a trend noted in 2012 suggests that more people 18 and older are becoming smokers. It seems that some people are postponing this habit, but the reasons for this are not clear.

How many people use tobacco?

Cigarette smoking has decreased among adults in the United States from about 42% of the population in 1965 to about 18% in 2012 (the latest year for which numbers are available).But it's still the most common form of tobacco use in the US: about 42 million (somewhat fewer than1 in every 5) adults currently smoke cigarettes. About 21% of men and 16% of women were cigarette smokers in 2012. Education is linked to smoking rates, with lower smoking rates in groups with higher levels of education. More people smoke cigarettes in the Midwest (21%) and South (20%), and fewer smoke in the West (14%).

Tobacco use does not end with cigarettes; other forms of tobacco use are common. In 2013, a survey by the US Substance Abuse and Mental Health Administration reported that 13.4 million people smoked cigars, and 2.5 million people smoked tobacco in pipes. The same survey reported 9 million people used smokeless or spit tobacco.

Is tobacco use common among young people?

Yes. Tobacco use, including smoking cigarettes, cigars, e-cigarettes, and hookahs, as well as using chew or spit tobacco such as snus and snuff, is common among American youth, according to the most recent government surveys.

Despite declines in recent years, in 2012 nearly 1 in 4 male high school students (23%) and nearly 1 in 5 female high school students (18%) were found to be current users of some type of tobacco.

Nearly 1 in 7 students (14%) were considered current cigarette smokers. Typically, about half of these students report that they've tried to quit smoking during the past year.

Cigar smoking was also common among high school students (about 8% of females and 17% of males). Even though flavorings are no longer allowed in cigarettes, "little cigars" (which often look like brown cigarettes) are sold in candy and fruit flavors that appeal to youth.

Also in 2012, about 7% of middle school students used some form of tobacco, with cigarettes (nearly 4%) being the most common. Almost 3% had smoked cigars.

In both middle school and high school, tobacco use was higher among male students for all products.

Behavioral problems have also been linked to smoking. Studies have shown that students who smoke are also more likely to use other drugs, get in fights, carry weapons, try to kill themselves, and take part in risky sex.

What in tobacco smoke is harmful?

Cigarettes, cigars, and pipe tobacco are made from dried tobacco leaves, and ingredients are added for flavor and to make smoking more pleasant. The smoke from these products is a complex mixture of chemicals produced by the burning of tobacco and its additives. Tobacco smoke is made up of more than 7,000 chemicals, including over 70 known to cause cancer (carcinogens). Some of these substances cause heart and lung diseases, too, and all of them can be deadly. You might be surprised to know some of the chemicals found in tobacco smoke include:

- Cyanide
- Benzene
- Formaldehyde
- Methanol (wood alcohol)
- Acetylene (the fuel used in welding torches)
- Ammonia

Tobacco smoke also contains tar and the poison gases carbon monoxide and nitrogen oxide. The ingredient that produces the effect people are looking for is nicotine, an addictive drug and one of the harshest chemicals in tobacco smoke.

The tobacco leaves used to make cigarettes and cigars contain radioactive materials; the amount depends on the soil the plants were grown in and fertilizers used. But this means that the smoke contains small amounts of radioactive material, too, which smokers take into their lungs as they inhale. These radioactive particles build up in the lungs, and over time can mean a big dose of radiation. This may be another key factor in smokers getting lung cancer.

Does smoking cause cancer?

Yes. Smoking accounts for at least 30% of all cancer deaths in the United States. It causes 87% of lung cancer deaths in men and 70% in women. Smoking also causes cancers of the nasopharynx (upper throat), nasal cavity, paranasal sinuses, lip, larynx (voice box), mouth, pharynx (throat), esophagus (swallowing tube), and bladder. It also has been linked to the development of cancers of the pancreas, cervix, ovary, colorectum, kidney, stomach, and some types of leukemia. Cigarettes, cigars, pipes, and spit and other types of smokeless tobacco all cause cancer. There is no safe way to use tobacco.

How does tobacco smoke affect the lungs?

Damage to the lungs begins early in smokers, and cigarette smokers have a lower level of lung function than non-smokers of the same age. Lung function continues to worsen as long as the person smokes, but it may take years for the problem to become noticeable enough for lung disease to be diagnosed. Smoking causes many lung diseases that can be nearly as bad as lung cancer.

Chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease (COPD) is a name for long-term lung disease which includes both chronic bronchitis and emphysema (discussed below). Here are some facts about COPD:

- More than 12 million people in the United States suffer from COPD. Another 12 million may have the disease and not suspect it because they don’t know the early warning signs.
- COPD is the third leading cause of death in the United States.
- More women die from COPD than men.
- Smoking is the main risk factor for COPD -- about 80-90% of COPD deaths are caused by smoking.
- The longer and heavier a person smokes, the higher their COPD risk.
- There’s no cure for COPD.

COPD most often starts unnoticed in young smokers, and usually gets far worse before it’s diagnosed. Noises in the chest (such as wheezing, rattling, or whistling), shortness of breath during activity, and coughing up mucus (phlegm) are some of the early signs of COPD.

Over time, COPD can make it hard to breathe even at rest. It limits activities and causes serious health problems. The late stage is one of the most miserable of all illnesses. It makes people gasp for breath and feel as if they are drowning.

Chronic bronchitis

Chronic bronchitis is a type of COPD, a disease where the airways make too much mucus, forcing the person to cough it out. It's a common problem for smokers. The airways become inflamed (swollen) and the cough becomes chronic (long-lasting). The symptoms can get better at times, but the cough keeps coming back. Airways get blocked by scar tissue and mucus, which can lead to bad lung infections (pneumonia).

There's no cure for chronic bronchitis, but quitting smoking can help keep symptoms under control. Quitting smoking also helps keep the damage from getting worse.

Emphysema

Smoking is also the major cause of emphysema, the other type of COPD, which slowly destroys a person's ability to breathe. Oxygen gets into the blood by moving across a large surface area in the lungs. Normally, thousands of tiny sacs make up this surface. In emphysema, the walls between the sacs break down and create larger but fewer sacs. This decreases the lung surface area, which lowers the amount of oxygen reaching the blood. Over time, the lung surface area can become so small that a person with emphysema must work very hard to get enough air, even when at rest.

Signs of late emphysema may include a cough that doesn't go away (which is often dismissed as "smoker's cough"), shortness of breath even when lying down, feeling tired, and weight loss. People with emphysema are at risk for many other problems linked to weak lung function, including pneumonia. In later stages of the disease, patients can only breathe comfortably with the help of an oxygen tube under the nose.

Emphysema cannot be cured or reversed, but it can be treated and slowed down if the person stops smoking.

Why do smokers have "smoker's cough?"

Tobacco smoke has many chemicals and particles that irritate the airways and lungs. When a smoker inhales these substances, the body tries to clear them by making mucus and coughing.

The early morning smoker's cough happens for many reasons. Normally, tiny hair-like formations (called cilia) beat outward and sweep harmful material out of the lungs. But tobacco smoke slows the sweeping action, so some of the particles in the smoke stay in the lungs and mucus stays in the airways. While a smoker sleeps (and doesn't smoke), some cilia recover and start working again. After waking up, the smoker coughs because

the lungs are trying to clear away the irritants and mucus that built up from the day before.

The cilia will completely stop working after they've been exposed to smoke for a long time. Then the smoker's lungs are even more exposed and prone to infection and irritation. So-called "smoker's cough" can be an early sign of COPD (see above, "Chronic obstructive pulmonary disease" in the section "How does tobacco smoke affect the lungs?")

If you smoke but don't inhale, is there any danger?

Yes. Wherever smoke touches living cells, it does harm. Even smokers who don't inhale are breathing secondhand smoke. They are at risk for lung cancer and other diseases caused by secondhand smoke.

Pipe and cigar smokers, who often don't inhale the smoke directly from the burning tobacco, are at an increased risk for lip, mouth, tongue, and some other cancers, too. See our document *Secondhand Smoke* for more information.

Does smoking tobacco affect your heart?

Yes. Smoking tobacco increases the risk of heart disease, which is the number one cause of death in the United States. Smoking, high blood pressure, high cholesterol, physical inactivity, obesity, and diabetes are all risk factors for heart disease. But the biggest risk factor for sudden death from a heart attack is cigarette smoking.

A smoker who has a heart attack is more likely to die within an hour of the heart attack than a non-smoker. Surprisingly, very low levels of tobacco smoke can harm the heart, even amounts that are too low to cause lung disease.

How does smoking affect pregnant women and their babies?

Pregnant women who smoke risk the health and lives of their unborn babies. Smoking during pregnancy is linked with a greater chance of miscarriage, premature delivery, stillbirth, infant death, low birth-weight, and sudden infant death syndrome (SIDS). Up to 5% of infant deaths could be prevented if pregnant women did not smoke. Many women know about some of these hazards, and most try to stop smoking when they find out they're pregnant.

When a pregnant woman smokes, she's smoking for 2. The nicotine, carbon monoxide, and other harmful chemicals enter her bloodstream, go into the baby's body, and keep it from getting the vital nutrients and oxygen it needs for growth.

Breast-feeding is the best way to feed a new baby. But mothers who smoke expose the baby to nicotine and other substances through breast milk. Nicotine can cause unwanted symptoms in the baby, such as restlessness, a faster heartbeat, and shorter sleep times. Some studies have suggested that more mothers who smoke report colicky babies, but other studies have found more factors are likely to be involved. It's best not to smoke while breast feeding. But breast feeding is thought to be healthier for the baby than the bottle, even when the mother smokes. Women who can't quit right away can:

- Make their homes smoke-free to keep the child away from second hand smoke
- Smoke just after breast-feeding to give the body more time to clear nicotine from breast milk
- Cut back on their smoking as much as possible

Some research has also suggested that children whose mothers smoked while pregnant or who have been exposed to secondhand smoke, even in small amounts, may be slower learners in school. They may be shorter and smaller than children of non-smokers. They are also more likely to smoke when they get older.

What are some of the short- and long-term effects of smoking tobacco?

Smoking causes many types of cancer. But cancers account for only about half of the deaths linked to smoking. Long-term, smoking is also a major cause of heart disease, aneurysms, bronchitis, emphysema, and stroke. It also makes pneumonia and asthma worse. Smoking is linked to about half of the gum disease in the United States, which means more tooth loss and mouth surgery. Wounds take longer to heal and the immune system may not work as well in people who smoke.

Smoking also damages the arteries. This is why many vascular surgeons refuse to operate on patients with peripheral artery disease (poor blood circulation in the arms and legs) unless they stop smoking. And male smokers have a higher risk of sexual impotence (erectile dysfunction) the longer they smoke.

Smoking also causes many short-term effects, such as poor lung function. This is why smokers often suffer shortness of breath and nagging coughs. They often tire quickly during physical activity. Some other common short-term effects include decreased sense of smell and taste, premature aging of the skin, bad breath, and stained teeth.

What are the chances that smoking will kill you?

About half of the people who keep smoking will die because of it. In the United States, tobacco causes nearly 1 in 5 deaths, or about 480,000 premature deaths each year –almost half a million in the US alone. Smoking is the single most preventable cause of death in our society.

On a larger scale, tobacco causes 6 million premature deaths world-wide each year. By 2030, this number is expected to increase to 8 million if current smoking trends continue.

Is secondhand (environmental) tobacco smoke dangerous?

There's no safe level of exposure for secondhand smoke (SHS), which is also called environmental tobacco smoke. Passive smoking (inhaling secondhand smoke) happens when non-smokers breathe other people's tobacco smoke. This includes *mainstream smoke* (smoke that's exhaled into the air by smokers) and *sidestream smoke* (smoke that comes directly from the burning tobacco).

SHS contains the same harmful chemicals the smokers inhale. It's known to cause lung cancer in non-smokers, and has been linked to other cancers and health problems in non-smokers, too. Children and babies are at special risk: those who breathe secondhand smoke are more likely to get sick and even die than children who aren't around SHS.

Please see our document called *Secondhand Smoke* to learn more.

Am I at risk for lung cancer from smoke odors on clothing or from being in a room that still smells like tobacco smoke?

There are no medical research reports on the cancer-causing effects of cigarette odors, but research does show that secondhand smoke (SHS) can seep into hair, clothing, dust, and other surfaces. Researchers call this "thirdhand" smoke. It refers to particles that are left on surfaces after you can no longer see the smoke. These particles can become airborne again when disturbed, or they can be picked up by people (especially babies and small children) who touch the surfaces and get particles on their hands and bodies.

Polycyclic aromatic hydrocarbons (PAHs) are known carcinogens that have been found in settled house dust in the homes of smokers. Studies in mice and in the lab have suggested that these substances still have effects and may cause harm if ingested, but

human studies have not been done. Though the cancer-causing effects of thirdhand smoke is not known, this is an active area of tobacco research.

For more information, see our document called *Secondhand Smoke*.

How does tobacco use affect the economy?

The tobacco industry is one of the most profitable businesses in the US, making billions of dollars every year. But the costs of smoking are far higher than the income from cigarette sales. The US Centers for Disease Control & Prevention estimated that in 2004, smoking led to health costs and productivity losses totaling an average of $10.47 per pack sold and used in the US.

More recent numbers show that annual smoking-attributable economic costs in the US are estimated to be between $289 to 332.5 billion. This total includes:

- $132.5 to 175.9 billion for direct medical care of adults
- $151 billion for lost productivity due to premature deaths
- $5.6 billion for lost productivity due to exposure to secondhand smoke

What’s being done to protect people from the hazards of smoking?

Tobacco labels

Since 1966, the US Surgeon General’s health warnings have been required on all cigarette packages and, since 1987, on all spit or oral tobacco products. Since 2001, the 7 major cigar manufacturers in the United States have provided 5 health warnings that rotate on cigar labels. These labels are much like those on cigarette packages.

On June 21, 2011, the Food and Drug Administration (FDA) announced its selection of 9 larger, more prominent, color graphic cigarette health warnings. As of September 2012, all cigarettes for sale or distribution in the United States were to be packaged or advertised with these new cigarette health warnings and a stop smoking hotline number. Studies have shown that viewers had a stronger response to the pictures than to written warnings. But tobacco companies successfully sued to have this requirement put on hold.

Advertising

Congress banned cigarette advertising on TV and radio in 1971 and spit tobacco advertising in 1987. The American Legacy Foundation and many states have made anti-

smoking public service messages that are featured on television, radio, and billboards. Some tobacco companies have come up with their own ads, which appear to be anti-smoking, but seem to actually promote a more favorable attitude toward the tobacco industry. The new FDA regulations mentioned above require that any tobacco ad use 20% of its ad space to display warnings about the dangers of smoking.

New laws affect tobacco marketing

The Family Smoking Prevention and Tobacco Control Act went into effect in October 2009. This law gives the Food and Drug Administration (FDA) power to regulate tobacco products in the United States.

One of the goals of the law is to restrict the marketing and advertising of tobacco products. Colorful ads and store displays are no longer permitted. Only black and white text ads are allowed. And in 2010, it became illegal to place outdoor tobacco ads within 1,000 feet of schools and playgrounds.

Taxes

Taxes on cigarettes have risen in many states in recent years. These increased costs have been shown to discourage young people from starting to smoke and encourage smokers to quit. As of early 2014, the federal cigarette tax is $1.01 per pack. State taxes on tobacco vary from as low as 17 cents (in Missouri) to up to $4.35 a pack (in New York).

Nearly all states and Washington DC levy their own taxes on other tobacco products such as cigars, pipe tobacco, snuff, and chewing tobacco. As of 2014, Pennsylvania charges no state tax on non-cigarette tobacco products, while Minnesota and Washington both charge 95% of the wholesale price of the tobacco product in taxes.

Smoking bans

Laws in all 50 states and the District of Columbia restrict or do not allow smoking in certain public places. These laws range from simple restrictions, such as designated areas in state or local government buildings, to laws that ban smoking in all public places and workplaces. Federal buildings are required to be smoke-free. Smoking is also banned on all domestic airplane flights.

According to the US Surgeon General, smoke-free policies that ban smoking in all indoor areas are the only way to be sure that people are not exposed to secondhand smoke at work and in other public places.

Are spit tobacco and snuff safe alternatives to smoking?

Many terms are used to describe tobacco that's put in the mouth, such as spit, oral, smokeless, chewing, and snuff tobacco. Using any kind of spit or smokeless tobacco is a major health risk. It's less lethal than smoking tobacco, but less lethal is a far cry from safe.

Overall, people who dip or chew get about the same amount of nicotine as regular smokers. The most harmful cancer-causing substances in spit tobacco are *tobacco-specific nitrosamines* (TSNAs) which have been found at levels 100 times higher than the nitrosamines that are allowed in bacon, beer, and other foods. These carcinogens cause lung cancer in lab animals, even when injected rather than inhaled.

The juice from smokeless tobacco is absorbed directly through the lining of the mouth. This causes sores and white patches (called *leukoplakia*) that often lead to cancer of the mouth.

People who use spit and other types of smokeless tobacco greatly increase their risk of other cancers, including those of the mouth, pharynx (throat), esophagus (the swallowing tube that connects the mouth and the stomach), stomach, and pancreas. Other effects of using spit tobacco include chronic bad breath, stained teeth and fillings, gum disease, tooth decay, tooth loss, tooth abrasion, and loss of bone in the jaw. Users may also have problems with high blood pressure and may be at increased risk for heart disease.

For more details, please read our document called *Smokeless Tobacco*.

What is snus? Is it safe?

Snus (sounds like "snoose") is a type of moist snuff first used in Sweden. It's often flavored with spices or fruit, and is usually packaged like small tea bags. It's also sold loose, as a moist powder. Like snuff and other spit tobaccos, snus is held between the gum and mouth tissues where the juice is absorbed into the body.

Because it's steam-heated rather than fermented, Swedish snus has fewer tobacco-specific nitrosamines (TSNAs) that are known to cause cancer (see above). In the US, snus is not labeled as to processing or TSNA content. The TSNA levels in US brands have been tested and they vary by region of the country and over time, as formulas change. The type of snus made in Sweden may cause less cancer than other snuff, but that still doesn't mean snus is safe. This is especially true in the US, where the TSNA levels are unknown.

Snus users may have a higher risk of cancer of the pancreas than non-users. They also get sores or spots in the mouth (lesions) where the snus is held. It appears that snus users may

have mouth cancer more often than non-users, though more studies need to be done to confirm this.

You can learn more about snus in *Smokeless Tobacco*.

What are the health risks of smoking pipes or cigars?

Many people view cigar smoking as less dangerous than cigarette smoking. Yet one large cigar can contain as much tobacco as an entire pack of cigarettes.

Small cigars are close to cigarettes in size and contain similar amounts of tobacco. Even though many people don't think of them when they hear the word "cigar," smaller cigars are all too common today. You can even find them at gas stations and convenience stores.

Most of the same cancer-causing substances found in cigarettes are found in cigars. Big cigars have as much nicotine as several cigarettes, which can cause addiction. Smaller cigars often have filters and are inhaled in much the same way as cigarettes. Many young people use them exactly like cigarettes, and the risk factors are expected to be the same.

Smoking cigars causes cancers of the lung, lip, tongue, mouth, throat, larynx (voice box), esophagus (swallowing tube), and has been linked to cancers of the bladder and pancreas.

Cigar smokers who inhale and smoke several cigars a day are also at increased risk for heart disease, blood vessel disease, and chronic lung disease. Those who don't inhale are exposed to secondhand smoke, which also has many health risks.

Pipe smokers have an increased risk of dying from cancers of the lung, lip, throat, esophagus, larynx, pancreas, and colon and rectum. They also have an increased risk of dying of heart disease, stroke, and chronic lung disease. The level of these risks seems to be about the same as that for cigar smokers.

Smoking cigars or pipes is not a safe alternative to smoking cigarettes.

To learn more, please see our document called *Cigar Smoking*.

What about electronic cigarettes? Aren't they safe?

Electronic cigarettes or e-cigarettes are designed to look like cigarettes, right down to the glowing tip. When the smoker puffs on it, the system delivers a mist of liquid, flavorings, and nicotine that looks something like smoke. The smoker inhales it like cigarette smoke, and the nicotine is absorbed into the lungs. The e-cigarette is usually sold as a way for a

smoker to get nicotine in places where smoking is not allowed. Some people think they can be used to help people give up tobacco.

The makers of e-cigarettes say that the ingredients are “safe,” but this only means the ingredients have been found to be safe to eat. Inhaling a substance is not the same as swallowing it. There are questions about how safe it is to inhale some substances in the e-cigarette vapor into the lungs. And e-cigarettes are not labeled with their ingredients, so the user doesn’t know what’s in them. The amounts of nicotine and other substances a person gets from each cartridge are also unclear.

A study done by the FDA found cancer-causing substances in half the e-cigarette samples tested. Other impurities were also found, including one sample with diethylene glycol, a toxic ingredient found in antifreeze.

Studies have shown that e-cigarettes can cause short-term lung changes that are much like those caused by regular cigarettes. But long-term health effects are still unclear. This is an active area of research, but the safety of these products is currently unknown.

We do know that electronic cigarettes are designed to deliver nicotine, and nicotine is addictive. This strongly suggests that e-cigarette use will lead to dependence, unless the user weans him or herself from them. A CDC survey published in 2013 showed that e-cigarette use in middle school and high school students doubled between 2011 and 2012, with 10% of high school students and 3% of middle school kids using them and risking addiction to nicotine. Among high school students, 80% smoked regular cigarettes and used e-cigarettes at the same time.

Because the American Cancer Society doesn’t yet know whether e-cigarettes are safe and effective, we cannot recommend them to help people quit smoking. There are proven methods available to help people quit, including pure forms of inhalable nicotine as well as nasal sprays, gums, and patches.

Until electronic cigarettes are scientifically proven to be safe and effective, ACS will support the regulation of e-cigarettes and laws that treat them like all other tobacco products.

The e-cigarette boom is now spawning sales of electronic cigars, e-hookahs (see the section “What about more exotic forms of smoking tobacco, such as clove cigarettes, bidis, and hookahs?”), and other special devices designed to reproduce different types of smoking using vaporized liquids. Even less is known about their ingredients and safety than about e-cigarettes. Like e-cigarettes, these new products need to be researched and regulated.

Is dissolvable tobacco safe?

Flavored, dissolvable tobacco products are becoming more and more popular among youth and current smokers facing smoking bans. In fact, they are often marketed as an

alternative to smoking in places where smoking is prohibited. These products deliver nicotine as they dissolve or melt in the user's mouth. They currently appear in various United States markets as strips, orbs, sticks, and lozenges.

These products are new to the US market, and little research is available on them at this time. Studies have shown that the main ingredients are nicotine and then flavoring compounds or binders.

Little is known about the health effects of these products, but it's clear that they are another way for people, especially youth, to experiment with tobacco products and become addicted to nicotine. (See "What does nicotine do?" in the section "Is smoking tobacco really addictive?" for more about this.)

What about more exotic forms of smoking tobacco, such as clove cigarettes, bidis, and hookahs?

Many forms of flavored tobacco have become popular, especially among younger people. Flavored cigars, clove cigarettes, bidis, and hookahs often appeal to those who want something a little different. They also give young people another way to experiment with tobacco.

The false image of these products as clean, natural, and safer than regular cigarettes seems to attract some who may otherwise not start smoking. But these products carry many of the same risks of cigarettes and other tobacco products, and each has its own additional problems linked to it.

Flavored cigars

As of October 2009, federal laws have banned flavored cigarettes. It's not illegal to have or smoke them, but it is illegal to sell them in the United States. Tobacco companies are working around this by making flavored small cigars as a replacement product, and kids and young adults are using them. See our documents *Cigar Smoking* and *Child and Teen Tobacco Use* to learn more.

Clove cigarettes

Clove cigarettes, also called *kreteks* (**kree**-teks), originated in Indonesia and other Southeast Asian countries. They contain 60% to 70% tobacco and 30% to 40% ground cloves, clove oil, and other additives. The chemicals in cloves have been linked to asthma and other lung diseases.

Users often have the mistaken notion that smoking clove cigarettes is safer than smoking regular cigarettes. But this is a tobacco product with the same health risks as cigarettes. In fact, clove cigarettes have been shown to deliver more nicotine, carbon monoxide, and tar than regular cigarettes.

Bidis

Bidis or “beedies” are flavored cigarettes that originated in India and other Southeast Asian countries. They are hand-rolled in an unprocessed tobacco leaf and tied with colorful strings on the ends. Their popularity has grown in part because they come in many candy-like flavors (strawberry, vanilla, licorice, and grape), and because they tend to cost less than regular cigarettes.

Even though bidis contain less tobacco than regular cigarettes, they deliver higher levels of nicotine (the addictive substance in tobacco) and other harmful substances, such as tar, ammonia, and carbon monoxide. The higher nicotine levels give the smoker a quick buzz. Because they are thinner than regular cigarettes, they require about 3 times as many puffs per cigarette. They are unfiltered.

Bidis seem to have all of the same health risks of regular cigarettes, if not more. Bidi smokers have much higher risks of heart attacks, emphysema, chronic bronchitis, and cancer than non-smokers.

Hookah (water pipes)

Hookah (or *narghile*, pronounced **nar**-guh-lee) smoking started in the India and the Middle East. Users burn flavored tobacco (called *shisha* [**she**-shuh]) in a water pipe and inhale the smoke through a long hose. It has become popular among young people.

Hookah smoking is usually a social event in which smokers talk as they pass the pipe around. It’s thought of as a safer alternative to cigarettes because the percentage of tobacco in the product smoked is low and people think the water filters out the toxins. This is false. The water does not filter out many of the toxins. In fact, hookah smoke contains more toxins such as nicotine, carbon monoxide, tar, heavy metals, and other hazardous substances, than cigarette smoke. And users breathe in secondhand smoke, as well as toxins released from the heat sources used to burn hookah tobacco. It has been suggested that in a typical 1-hour hookah smoking session, users may breathe in 100 to 200 times the amount of smoke, 9 times the amount of carbon dioxide, and nearly twice the amount of nicotine they would get from one cigarette.

Several types of cancer have been linked to hookah smoking, including lung, mouth, and bladder cancer. Hookah use is also linked to other unique risks not found with cigarette smoking. For example, infectious diseases can be spread by sharing the pipe or through the way the tobacco is prepared.

Advertisers now offer newer forms of hookah smoking that can include steam stones or even battery powered hookah pens. Both of these create a vapor that is inhaled, which makes them much more like electronic cigarettes. Some are advertised as being purer and healthier alternatives to regular hookahs, even though less is known about them.

Bottom line

All forms of tobacco are dangerous. Even if the health risks were smaller for some tobacco products as opposed to others, all tobacco products contain nicotine, which can lead to increased use and addiction. **Tobacco is not safe in any amount or form.**

What can I do to help with any damage that may have been caused by smoking?

If you use or have used tobacco, tell your health care provider so he or she can be sure that you get the right preventive health care. It's well known that tobacco use puts you at risk for certain illnesses. This means part of your health care should focus on related screening and preventive measures to help you stay as healthy as possible. For example, you will want to be sure that you regularly check the inside of your mouth for any changes, and have your mouth checked by a doctor or dentist if you do find any changes or problems. The American Cancer Society recommends that regular check-ups include exams of the mouth. By doing this, tobacco users may be able to find changes such as leukoplakia (white patches on the mouth membranes) early. This may help prevent oral cancer.

You should also be aware of any of the following:

- Any change in a cough (for instance, you cough up more mucus than usual)
- A new cough
- Coughing up blood
- Hoarseness
- Trouble breathing
- Less tolerance for exercise (getting out of breath easily when active)
- Wheezing, whistling, or rattling with breathing
- Headaches
- Chest pain

- Loss of appetite
- Weight loss
- General fatigue (feeling tired all the time)
- Frequent or repeated respiratory infections

Any of these could be signs of lung cancer or a number of other lung problems, and you should see a doctor right away.

Older people who are at higher risk for lung cancer because they've been long-term heavy smokers may want to discuss with their doctors whether screening is appropriate for them. The American Cancer Society has guidelines on the use of low dose computed tomography (CT) to screen for lung cancer in certain people at high risk. For more detailed information on this, please see *Lung Cancer Prevention and Early Detection*.

Remember that tobacco users have a higher risk for other cancers too, depending on the way they use tobacco. You can learn more about the types of cancer you may be at risk for by reading our document that discusses the type of tobacco you use (for example, *Smokeless Tobacco*, *Cigar Smoking*, or *Cigarette Smoking*). Other risk factors for these cancers may be more important than your use of tobacco, but you should know the additional risks that might apply to you.

If you're concerned about your health because of your tobacco use, see a health care provider as soon as possible. Taking care of yourself, talking to a doctor about screening tests that may be right for you, and getting treatment for early problems will give you the best chance for treatment success. The best way, though, to take care of yourself and decrease your risk for life-threatening lung problems is to quit using tobacco.

Can quitting really help a lifelong smoker?

Yes. It's never too late to quit using tobacco. The sooner smokers quit, the more they can reduce their chances of getting cancer and other diseases. Within minutes of smoking the last cigarette, the body begins to recover:

20 minutes after quitting

Your heart rate and blood pressure drop.

> (Effect of smoking on arterial stiffness and pulse pressure amplification, Mahmud A, Feely J. 2003. *Hypertension*:41:183)

12 hours after quitting

The carbon monoxide level in your blood drops to normal.

(*US Surgeon General's Report*, 1988, p. 202)

2 weeks to 3 months after quitting

Your circulation improves and your lung function increases.

(*US Surgeon General's Report*, 1990, pp.193, 194,196, 285, 323)

1 to 9 months after quitting

Coughing and shortness of breath decrease; cilia (tiny hair-like structures that move mucus out of the lungs) start to regain normal function in the lungs, increasing the ability to handle mucus, clean the lungs, and reduce the risk of infection.

(*US Surgeon General's Report*, 1990, pp. 285-287, 304)

1 year after quitting

The excess risk of coronary heart disease is half that of a continuing smoker's.

(*US Surgeon General's Report*, 2010, p. 359)

5 years after quitting

Risk of cancer of the mouth, throat, esophagus, and bladder are cut in half. Cervical cancer risk falls to that of a non-smoker. Stroke risk can fall to that of a non-smoker after 2-5 years.

(A Report of the Surgeon General: How Tobacco Smoke Causes Disease - The Biology and Behavioral Basis for Smoking-Attributable Disease Fact Sheet, 2010; *Tobacco Control: Reversal of Risk After Quitting Smoking*. *IARC Handbooks of Cancer Prevention, Vol. 11*. 2007, p 341)

10 years after quitting

The risk of dying from lung cancer is about half that of a person who is still smoking. The risk of cancer of the larynx (voice box) and pancreas decreases.

(A Report of the Surgeon General: How Tobacco Smoke Causes Disease - The Biology and Behavioral Basis for Smoking-Attributable Disease Fact Sheet, 2010; and *US Surgeon General's Report*, 1990, pp. vi, 155, 165)

15 years after quitting

The risk of coronary heart disease is that of a non-smoker's.

(Tobacco Control: Reversal of Risk After Quitting Smoking. *IARC Handbooks of Cancer Prevention, Vol. 11*. 2007. p 11)

These are just a few of the benefits of quitting smoking for good. Quitting smoking lowers the risk of diabetes, lets blood vessels work better, and helps the heart and lungs.

Life expectancy for smokers is at least 10 years shorter than that of non-smokers. Quitting smoking before the age of 40 reduces the risk of dying from smoking-related disease by about 90%. Quitting while you are younger will reduce your health risks more, but quitting at any age can give back years of life that would be lost by continuing to smoke.

Are there benefits of quitting that I'll notice right away?

Kicking the tobacco habit offers some rewards that you'll notice right away and some that will show up more slowly over time. These benefits can improve your day-to-day life a lot.

- Food will taste better.
- Your sense of smell returns to normal.
- Your breath, hair, and clothes smell better.
- Your teeth and fingernails stop yellowing.
- Ordinary activities leave you less out of breath (for example, climbing stairs or light housework).
- You can be in smoke-free buildings without having to go outside to smoke.

Quitting also helps stop the damaging effects of tobacco on how you look, including premature wrinkling of your skin, gum disease, and tooth loss.

Suppose I smoke for a while and then quit?

It's much better to never start smoking – and avoid becoming addicted to nicotine – than it is to smoke with the plan to quit later. The best choice you can make is to refuse to use any and all forms of tobacco.

Smoking begins to cause damage right away, and it's highly addictive. The same is true for other forms of tobacco. Studies have found that tobacco is as addictive as heroin, cocaine, or alcohol. Nicotine creates a tolerance in the body and promotes psychological dependence. It's the most common form of drug addiction in the United States. This makes it much harder to quit, but with the right support it can be done. When an ex-smoker uses tobacco, even years after quitting, the body reacts the same way it did when the person was smoking, which is why many people go right back to their former habit. Don't think you can smoke for a short while and quit when you want to – it's rarely that easy.

How do people quit tobacco?

Quitting tobacco is not easy. Most people have to try many times before they are able to quit for good. There are many ways to quit. For example, some are able to stop "cold turkey," some take part in the Great American Smokeout®, and some people quit by using other methods.

There's no one best way to quit. Quitting for good often means using 3 or more methods, including step-by-step manuals, self-help groups, counseling, toll-free phone-based counseling programs, online support, and/or nicotine replacement therapies or other medicines.

No matter which methods are used, people trying to quit tobacco need more than one way to approach quitting. Tobacco users must deal with the physical symptoms caused by withdrawal from nicotine, which usually last a few days to a couple of weeks. They also need to deal with the emotional, psychological, and mental dependence. People who quit for good find ways to deal with pressure, stress, and emotional pain without smoking. The mental and psychological craving can cause relapse even years later – that's how addictive nicotine is! For more information on quitting and treatments that can be used to help, see our documents called *Guide to Quitting Smoking* and *Guide to Quitting Smokeless Tobacco*.

Where can I go for help quitting tobacco?

It's hard to stop using tobacco, but you can do it! More than 50 million Americans have quit smoking for good, and now there are more former smokers than current smokers in the US. People are breaking free of other forms of tobacco, too. Many organizations offer information, counseling, and other services on how to quit, as well as information on where to go for help. Other good resources for finding help include your doctor, dentist, local hospital, or employer.

If you want to quit tobacco and need help, contact one of these organizations:

American Cancer Society
Toll-free number: 1-800-227-2345
Website: www.cancer.org

Your state tobacco cessation line (in collaboration with Centers for Disease Control and Prevention Office on Smoking and Health)
Toll-free quit support line: 1-800-784-8669 (1-800-QUIT-NOW)
TTY: 1-800-332-8615
Quitting help website: www.cdc.gov/tobacco/quit_smoking/how_to_quit/index.htm

National Cancer Institute
Free tobacco quit line: 1-877-448-7848 (1-877-44U-QUIT) (also available in Spanish)
Smoking cessation website: www.smokefree.gov

Nicotine Anonymous (NicA)
Toll-free number: 1-877-879-6422 (1-877-TRY-NICA)
Website: www.nicotine-anonymous.org

QuitNet
Website: www.quitnet.com

To learn more

More information from your American Cancer Society

Here is more information you might find helpful. You also can order free copies of our documents by our toll-free number, **1-800-227-2345**, or read many of them on our website, www.cancer.org.

Trying to quit or help someone else quit?

Guide to Quitting Smoking (also in Spanish)

Guide to Quitting Smokeless Tobacco

Increase Your Chances of Quitting Smoking

Quitting Smoking – Help for Cravings and Tough Situations (also in Spanish)

Helping a Smoker Quit: Dos and Don’ts

More about smoking and tobacco use

Cigar Smoking (also in Spanish)

Cigarette Smoking (also in Spanish)

Smokeless Tobacco

Secondhand Smoke (also in Spanish)

Child and Teen Tobacco Use (also in Spanish)

Women and Smoking (also in Spanish)

Tobacco and the LGBT Community

Death and harm from smoking

Smoking and Cancer Mortality Summary Table

Tobacco-Related Cancers Fact Sheet

No matter who you are, we can help. Contact us anytime, day or night, for information and support. Call us at **1-800-227-2345** or visit www.cancer.org.

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