

## Do You Know...

# Tobacco

### What is it?

Tobacco is a plant (*Nicotiana tabacum* and *Nicotiana rustica*) that contains nicotine, an addictive drug with both stimulant and depressant effects.

Tobacco is most commonly smoked in cigarettes. It is also smoked in cigars or pipes, chewed as chewing tobacco, sniffed as dry snuff or held inside the lip or cheek as wet snuff. Tobacco may also be mixed with cannabis and smoked in “joints.” All methods of using tobacco deliver nicotine to the body.

Although tobacco is legal, federal, provincial and municipal laws tightly control tobacco manufacture, marketing, distribution and use. Second-hand tobacco smoke is now recognized as a health danger, which has led to increasing restrictions on where people can smoke. Violations of tobacco-related laws can result in fines and/or prison terms.

### Where does tobacco come from?

The tobacco plant’s large leaves are cured, fermented and aged before they are manufactured into tobacco products.

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Tobacco was cultivated and widely used by the peoples of the Americas long before the arrival of Europeans. Today, most of the tobacco legally produced in Canada is grown in Ontario, commercially packaged and sold to retailers by one of three tobacco companies. Many of the cheaper contraband cigarettes currently sold in Canada are smuggled in from the United States.

### **Who uses tobacco?**

Greater awareness of the negative health effects of smoking, along with increased restrictions, has led to a steady decline in rates of smoking in Canada. In 1965, almost half of the population smoked. By 2008, this rate had dipped to 21 per cent of people aged 12 and over (24 per cent of males and 19 per cent of females). Despite the decline, more than six million Canadians still smoke. An ongoing survey of Ontario students in grades 7 to 12 indicates that cigarette smoking in young people has fallen from more than 28 per cent in 1999 to less than 12 per cent in 2009. While tobacco use is decreasing in Canada and other developed countries, it is increasing in developing countries.

Tobacco use tends to be more common among people with lower levels of education and income. Most people who smoke begin between the ages of 11 and 15.

Studies show that genetic factors play a role in whether or not a person will become addicted to nicotine.

People with certain psychiatric disorders are more likely to use tobacco. A U.S. survey of people who received psychiatric outpatient services reported that rates of smoking were 88 per cent for people with schizophrenia, 70 per cent for those with mania and 49 per cent for those with depression. Another study found that 85 per cent of people seeking treatment for alcohol dependence also smoked.

### **How does tobacco make you feel?**

The nicotine in tobacco smoke travels quickly to the brain, where it acts as a stimulant and increases heart rate and breathing. Tobacco smoke also reduces the level of oxygen in the bloodstream, causing a drop in skin temperature. People new to smoking are likely to experience dizziness, nausea and coughing or gagging.

The mood-altering effects of nicotine are subtle, complex and powerful. Some people feel that smoking helps them to be alert and to concentrate, and also that it helps them to feel relaxed. Research has shown that smoking raises levels of dopamine, a chemical in the brain, increasing feelings of pleasure and reinforcing the desire to continue to smoke.

Smoking and second-hand smoke can irritate the eyes, nose and throat. Tobacco smoke may cause headaches, dizziness, nausea, coughing and wheezing, and can aggravate allergies and asthma. Smoking also weakens the sense of taste and smell, reduces hunger and causes the stomach to produce acid.

How smoking affects you depends on:

- how much and how often you smoke
- how long you've been smoking
- your mood, expectations and the environment
- your age
- whether you have certain pre-existing medical or psychiatric conditions
- whether you've taken alcohol or other drugs (illicit, prescription, over-the-counter or herbal).

### **How long does the feeling last?**

When a cigarette is smoked, the effects are felt in less than 10 seconds, and last only a few minutes.

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## Is tobacco dangerous?

Yes. Tobacco use is the primary cause of preventable disease and death in Canada, and is considered our greatest public health concern. One study estimated that more than 45,000 Canadians die each year of smoking-related causes. This includes people who smoke, and people who are exposed to second-hand smoke.

When tobacco is burned, a dark sticky “tar” is formed from a combination of hundreds of chemicals, including poisons that cause cancers and bronchial disorders. Tar is released in tobacco smoke in tiny particles that damage the lungs and airways and stain teeth and fingers. Tar is the main cause of lung and throat cancers. (Although nicotine is the main ingredient of tobacco that causes addiction, it is not known to cause cancer.)

Burning tobacco also forms carbon monoxide (CO), a poisonous gas you can’t see or smell. When smoke is inhaled, CO replaces oxygen in red blood cells. While nicotine speeds up the heart, making it work harder, CO deprives it of the extra oxygen this work demands. This is one way that smoking contributes to heart disease.

When swallowed, nicotine is extremely toxic. Ingesting about 40 milligrams of pure nicotine, or roughly the amount contained in two cigarettes, is fatal. However, when a cigarette is smoked, most of the nicotine is burned, and only one to four milligrams is absorbed into the body. Similarly, the amount of nicotine absorbed from the patch, and other methods of nicotine replacement therapy used to help people quit smoking, is well below toxic levels.

Canadian laws require that levels of tar, nicotine and carbon monoxide appear on cigarette packages. It was once thought that cigarettes with less tar and nicotine might be

less harmful. However, research has shown that so-called “light” cigarettes are just as likely to cause disease.

## Is tobacco addictive?

Yes. Once a person begins to smoke, particularly at a young age, the chances of becoming addicted are quite high. People new to smoking quickly develop tolerance to the initial ill effects, and if they enjoy the stimulant and pleasant effects, they may begin to smoke regularly. Those who smoke regularly tend to have a consistent number of cigarettes per day. Canadians who smoke have, on average, about 15 cigarettes per day.

Nicotine addiction involves psychological and physical factors. Psychological factors may include feelings of pleasure and alertness. People who smoke regularly may learn to rely on the effects of nicotine to bring about these feelings. They also develop conditioned signals, or “triggers,” for cigarette use. For example, some people always smoke after a meal, while working at a certain task or while in certain emotional states, such as feeling depressed or anxious. These triggers lead to behaviour patterns, or habits, which can be difficult to change.

Signs of physical dependence include the urge to smoke within minutes of waking, smoking at regular intervals throughout the day, and ranking the first cigarette of the day as the most important.

People who are addicted to nicotine may become tolerant to the desired effects. They may no longer experience pleasure from smoking, but continue smoking due to cravings and to avoid nicotine withdrawal.

Symptoms of nicotine withdrawal include irritability, restlessness, anxiety, insomnia and fatigue. These symptoms vanish within a couple of weeks. Some people may be unable to concentrate, and have strong cravings to smoke, for weeks or months after quitting smoking.

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## Quitting smoking

After a few years, people who quit smoking can generally achieve the same health levels as those who have never smoked, especially if they stop while they are young. Quitting smoking can take several attempts, so it is important to keep trying. Stop-smoking aids containing nicotine, such as the patch, gum, inhaler, lozenge or nasal spray, can help to ease withdrawal symptoms and reduce cravings. Such aids work best when the person is highly motivated to quit, and when the person has other supports, such as family, friends, a stop-smoking group or telephone support.

Certain medications that do not contain nicotine can help people to quit smoking. These include bupropion (Zyban) and varenicline (Champix). Both are available by prescription.

For some people, cutting down before quitting helps to lessen the withdrawal symptoms, and allows them to change their smoking behaviours gradually. Strategies for cutting down include delaying cigarettes, smoking fewer cigarettes and smoking less of each cigarette. Although cutting down may reduce some health risks, there is no safe level of smoking; cutting down is not an alternative to quitting.

There are currently more former smokers than smokers in Canada. In 2005, 39 per cent of the population, or more than 10 million Canadians aged 12 and over, reported they had quit smoking.

### What are the long-term effects of using tobacco?

The risk of long-term effects increases with the amount smoked, and the length of time a person smokes.

### Smoking:

- is the main cause of lung cancer
- increases the risk of cancers of the colon, mouth, throat, pancreas, bladder and cervix
- causes most cases of chronic bronchitis and emphysema
- causes smoker's cough
- is a major cause of heart disease and stroke
- increases the risk of medical problems for a woman during pregnancy (e.g., miscarriage, bleeding, placenta previa and poor healing) and increases the risk that her baby will be underweight or will die in infancy
- causes osteoporosis (thinning of the bones)
- increases risk of digestive problems
- affects the immune system, making people who smoke more prone to colds, flu and pneumonia
- decreases the amount of vitamin C in the body, which may cause skin wounds to heal less quickly
- can cause the arteries in the legs to become clogged, resulting in poor circulation, leg pain, gangrene and loss of limb.

Many of the risks and dangers of smoking also apply to people who are exposed to second-hand smoke. Long-term exposure to second-hand smoke:

- has been linked to heart disease and cancer
- (in pregnant women) increases the risk of complications during pregnancy and delivery, and of delivering babies with a low birth weight
- (in young children) has been linked to sudden infant death syndrome, can lead to or worsen respiratory problems such as asthma; also causes middle ear infections.

Use of tobacco products that are not smoked, such as snuff and chewing tobacco, are linked to an increased risk of oral cancers, gingivitis and tooth decay.

# Tobacco

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