



## **The real truth about Cigarettes**

Nicotine is one of the most heavily used addictive drugs in Canada. In 2002, at least 30 percent of the population 12 and older used tobacco at least once in the month prior to being interviewed. Most of them smoked cigarettes.

Cigarette smoking has been the most popular method of taking nicotine since the beginning of the 20th century. Cigarettes and other forms of tobacco, such as cigars, pipe tobacco, and chewing tobacco, are addictive and that nicotine is the drug in tobacco that causes addiction. Smoking is a major cause of stroke and a leading cause of death in Canada. Statistics from the Centers for Disease Control and Prevention indicate that tobacco use remains the leading preventable cause of death, causing more than 440,000 deaths each year and resulting in an annual cost of more than \$75 billion in direct medical costs.

### **Health Hazards**

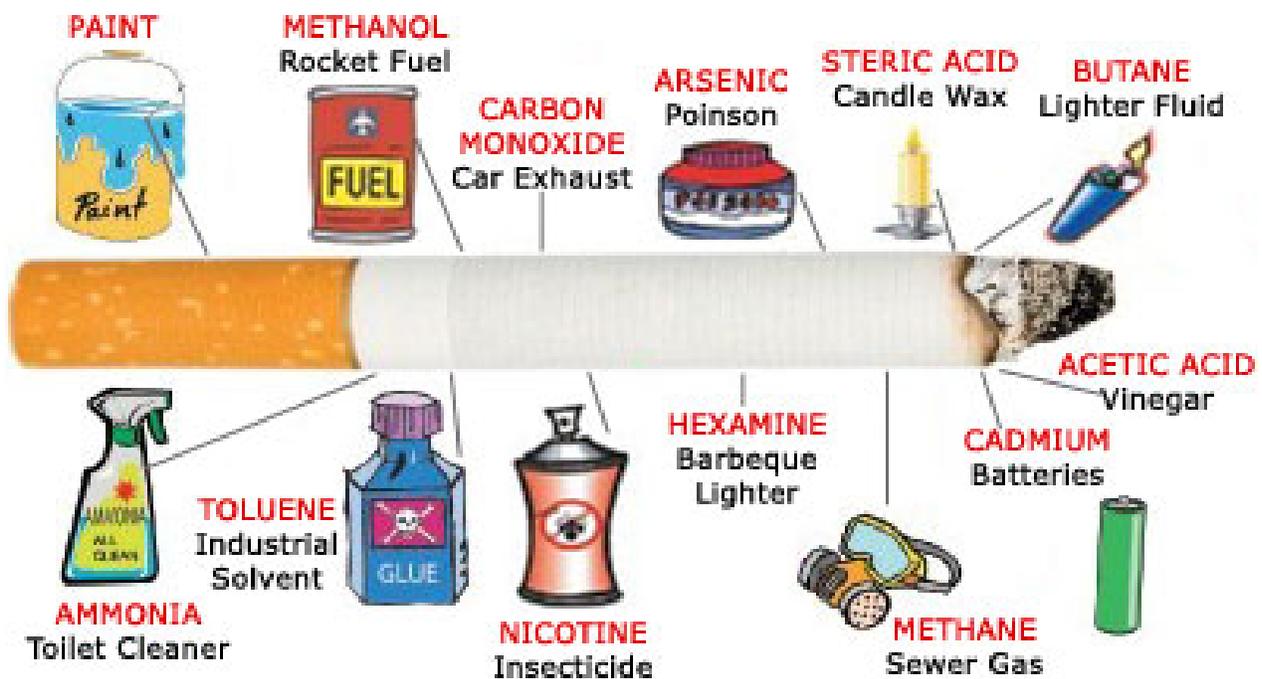
Nicotine is highly addictive. Nicotine provides an almost immediate “kick” because it causes a discharge of epinephrine from the adrenal cortex. This stimulates the central nervous system, and other endocrine glands, which causes a sudden release of glucose. Stimulation is then followed by depression and fatigue, leading the abuser to seek more nicotine.

Nicotine is absorbed readily from tobacco smoke in the lungs, and it does not matter whether the tobacco smoke is from cigarettes, cigars, or pipes. Nicotine also is absorbed readily when tobacco is chewed. With regular use of tobacco, levels of nicotine accumulate in the body during the day and persist overnight. Thus, daily smokers or chewers are exposed to the effects of nicotine for 24 hours each day.

Addiction to nicotine results in withdrawal symptoms when a person tries to stop smoking. For example, a study found that when chronic smokers were deprived of cigarettes for 24 hours, they had increased anger, hostility, and aggression, and loss of social cooperation. Persons suffering from withdrawal also take longer to regain emotional equilibrium following stress. During periods of abstinence and/or craving, smokers have shown impairment across a wide range of psychomotor and cognitive functions, such as language comprehension.

Adolescent smokeless tobacco users are more likely than nonusers to become cigarette smokers. Behavioral research is beginning to explain how social influences, such as observing adults or other peers smoking, affect whether adolescents begin to smoke cigarettes. Research has shown that teens are generally resistant to anti-smoking messages.

In addition to nicotine, cigarette smoke is primarily composed of a dozen gases (mainly carbon monoxide) and tar. The tar in a cigarette, which varies from about 15 mg for a regular cigarette to 7 mg in a low-tar cigarette, exposes the user to an increased risk of lung cancer, emphysema, and bronchial disorders.



The carbon monoxide in the smoke increases the chance of cardiovascular diseases. The Environmental Protection Agency has concluded that secondhand smoke causes lung cancer in adults and greatly increases the risk of respiratory illnesses in children and sudden infant death.



### **Treatment**

Studies have shown that pharmacological treatment combined with behavioral treatment, including psychological support and skills training to overcome high-risk situations, results in some of the highest long-term abstinence rates. Generally, rates of relapse for smoking cessation are highest in the first few weeks and months and diminish considerably after about 3 months.

Behavioral economic studies find that alternative rewards and reinforcers can reduce cigarette use. One study found that the greatest reductions in cigarette use were achieved when smoking cost was increased in combination with the presence of alternative recreational activities.

Nicotine chewing gum is one medication approved by the Food and Drug Administration (FDA) for the treatment of nicotine dependence. Nicotine in this form acts as a nicotine replacement to help smokers quit smoking.

The success rates for smoking cessation treatment with nicotine chewing gum vary considerably across studies, but evidence suggests that it is a safe means of facilitating smoking cessation if chewed according to instructions and restricted to patients who are under medical supervision.

Another approach to smoking cessation is the nicotine transdermal patch, a skin patch that delivers a relatively constant amount of nicotine to the person wearing it. A research team at NIDA's Intramural Research Program studied the safety, mechanism of action, and abuse liability of the patch that was consequently approved by FDA. Both nicotine gum and the nicotine patch, as well as other nicotine replacements such as sprays and inhalers, are used to help people fully quit smoking by reducing withdrawal symptoms and preventing relapse while undergoing behavioral treatment.

Another tool in treating nicotine addiction is a medication that goes by the trade name Zyban. This is not a nicotine replacement, as are the gum and patch. Rather, this works on other areas of the brain, and its effectiveness is in helping to make controllable nicotine craving or thoughts about cigarette use in people trying to quit.