



Brian delves into the nature of nicotine addiction.

Segment Length: 8:40

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Nicotine

Show Number 1404

Why is it so hard to quit smoking?

What is nicotine addiction? Can it be cured?

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Getting Started

Calculate the price of the cigarette habit. Say, for example, a smoker "burns up" a pack a day:
\$_____ (price per pack) x 365 days/year = \$_____ per year. What could you buy or use that money for that would not harm your health?

Why do you think people smoke? Do you think they know that it's bad for them? Do you think it would be easy to quit and that everyone should?

Why is smoking bad for you? Can you name other things that are unhealthy that people do anyway? Name some similarities between these things and smoking. If you had a friend or family member who smoked, what would you suggest to help that person quit?

Overview

Researchers continue to release shocking statistics about smoking. One estimate puts the total number of deaths due to smoking-related illnesses (such as cardiovascular illness, lung cancer, and emphysema) at 400,000 in 1990 alone, almost a quarter of the total deaths for that year. Smokers know that cigarettes are unhealthy -- even cigarette packages display dire health warnings -- yet many still have difficulty quitting. Part of the reason for that became official in 1988, when the U.S. Surgeon General announced that [nicotine](#), a chemical found in virtually all tobacco products, was an addictive drug.

When someone smokes a cigarette, nicotine molecules are inhaled into the lungs. From there they are absorbed into the bloodstream. About 10 seconds later, the nicotine reaches the brain, where it locks onto specific [receptor](#) areas. When that happens, a chemical called [dopamine](#) is released into the brain, which

causes the smoker to experience pleasurable, positive feelings. People who smoke have difficulty quitting because they come to depend on the good feeling they get from nicotine and want to experience it repeatedly. This dependence is a sign of [addiction](#).

Nicotine is both physically and psychologically addictive. Physical addiction is biochemical. A person who tries to quit smoking experiences [withdrawal](#) symptoms such as depression because the brain expects nicotine and becomes physically distressed without it. Smokers also tend to associate cigarettes with other pleasurable activities such as relaxing with friends or reading the newspaper at breakfast. This psychological addiction is hard to break because the smoker resists changing these daily routines.

Ironically, tobacco-related illnesses are not directly linked to nicotine itself, but result from exposure to the several hundred other chemical substances inhaled in tobacco smoke or absorbed from chewing tobacco or snuff. Some of these chemicals come directly from the tobacco plant, while some are produced in chemical reactions as the cigarette burns. Because nicotine in small doses is probably not too harmful, doctors sometimes administer nicotine alone, usually in the form of gum or a skin patch. This nicotine [replacement therapy](#) helps reduce the physical craving for nicotine, so the smoker can more easily quit smoking.



Connections

1. There is a urine test that can determine if a person has been smoking. Because smoking is illegal for individuals under 21 years of age, someone has proposed that anyone under 21 who fails this test should lose or be denied a driver's license. What do you think of this proposal?
2. Nicotine may have some medicinal value in addition to its addictive properties. What do you think is the best way for society to handle a drug that can be both good and bad for people?



Resources

Bartecchi, C.E., MacKenzie, T.D., & Schrier, R.W. (1995, May) The global tobacco epidemic. *Scientific American*, pp. 44-51.

Brautbar, N. (1995, July 1) Direct effects of nicotine on the brain: Evidence for chemical addiction. *Archives of Environmental Health*, p. 263.

Stephenson, J. (1996, Apr 24) Clues found to tobacco addiction. *Journal of the American Medical Association*, p. 1217.

Swisher, K.L. (Ed.) (1995) *At issue: Smoking*. In the *Opposing viewpoints series*. San Diego: Greenhaven Press.

Tobias, A. (1991) *Kids say: Don't Smoke*. New York: Workman Publishing. (reproduces dozens of antismoking posters created by children)

Action on smoking and health:
<http://ash.org/ash/links.html>

Smoking: Facts and tips for quitting:
<http://www.winternet.com/~terrism/quitsmoke.html>

Student Activity:

Nicotine



Clearing the Air

Interview smokers and nonsmokers to compare their points of view.

Main Activity

Smoking is a hotly debated topic. Many people express very strong views on the subject. What do smokers and nonsmokers have to say about smoking? Conduct some interviews to find out.

1. Find two smokers and two nonsmokers to interview. These might be family members, teachers, or friends.
2. Make a list of questions you want to ask, such as: Why did you start (or not start) smoking? When did you start smoking? Do you want to quit? How do you feel if you can't have a cigarette? Do you tell others they ought to quit or refuse to associate with smokers?
3. Take notes as you listen to the answers.
4. When you get back to your classroom, compare notes with the other students. Make bar graphs of some of your data. For example, you could record the number of people on the Y-axis and the age they started smoking on the X-axis.

Questions

1. Can you find some common themes? For example, do smokers seem to have started smoking at about the same age or for the same reasons?
2. When we have problems to solve in society, why is it important to listen to many different opinions? How might the information you obtained help establish better ways to deal with the smoking debate?

TRY THIS



The bloodstream carries all sorts of chemicals to various parts of the body. What does blood consist of? Why is it so good at carrying nicotine as well as oxygen and carbon dioxide?

TRY THIS



Activists often complain that cigarette advertising targets young people. Collect some cigarette ads from magazines and analyze them. What do the ads say? What do they seem to suggest without stating outright?

TRY THIS



Make a list of habits you have. Which ones are good for you? Which ones are bad for you? If you have a bad habit like chewing your fingernails, what strategy could you use to quit?

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Educational materials developed with the National Science Teachers Association.

NEWTON'S APPLE is a production of KTCA Saint Paul/Minneapolis. Made possible by a grant from 3M.

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