America's Leading Preventable Killer

Withdrawal may be bad, but long-term smoking can be much worse. It raises your blood pressure, dulls your senses of smell and taste, reduces your stamina, and wrinkles your skin. More dangerously, long-term smoking can lead to fatal heart attacks, strokes, emphysema, and cancer.

You may be surprised to learn that tobacco use causes far more illnesses and death than all other addicting drugs combined. One out of every six deaths in the United States is a result of smoking.

But even when faced with risk of death, many people keep using tobacco because they are so addicted to nicotine. Believe it or not, half of the smokers who have heart attacks keep smoking, even though their doctor warns them to stop. That's a strong addiction!

Smokeless tobacco also has harmful effects. Chewing tobacco can cause damage to gum tissue and even loss of teeth. It also reduces a person's ability to taste and smell. Most importantly, smokeless tobacco contains cancer-causing chemicals that can cause cancers of the mouth, pharynx, larynx, and esophagus. This can even happen in very young users of chewing tobacco. In fact, most people who develop these cancers were users of chewing tobacco.

The Search Continues

The truth is, there's still a whole lot that scientists don't know about nicotine's effects on the brain. Maybe someday you'll make the next big discovery.

Until then, join me - Sara Bellum - in the other magazines in my series as we explore how drugs affect the brain and nervous system.

For more information, visit:
www.drugabuse.gov

National Clearinghouse for Alcohol and Drug Information,
P.O. Box 2345, Rockville, MD 20847
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How Does Nicotine Act in the Brain?

Your brain is made up of billions of nerve cells. They communicate by releasing chemical messengers called neurotransmitters. Each neurotransmitter is like a key that fits into a special “lock,” called a receptor, located on the surface of nerve cells. When a neurotransmitter finds its receptor, it activates the receptor’s nerve cell.

Nicotine also activates areas of the brain that are involved in producing feelings of pleasure and reward. Scientists discovered that nicotine raises the levels of a neurotransmitter called dopamine in the parts of the brain that produce feelings of pleasure and reward.

Dopamine, which is sometimes called the pleasure molecule, is the same neurotransmitter that is involved in addictions to other drugs such as cocaine and heroin. Researchers now believe that this change in dopamine may play a key role in all addictions. This may help explain why it is so hard for people to stop smoking.

Easy to Start, Hard to Quit

Did you know that nicotine is as addictive as heroin or cocaine? If someone uses nicotine again and again, such as by smoking cigarettes or cigars or chewing tobacco, his or her body develops a tolerance for it. When someone develops tolerance, he or she needs more drug to get the same effect. Eventually, a person can become addicted. Once a person becomes addicted, it is extremely difficult to quit. People who start smoking before the age of 21 have the hardest time quitting, and fewer than 1 in 10 people who try to quit smoking succeed.

When nicotine addicts stop smoking, they may suffer from restlessness, hunger, depression, headaches, and other uncomfortable feelings. These are called “withdrawal symptoms” because they happen when nicotine is withdrawn from the body.

Got A Match?

The brain’s best defense against nicotine is to think hard before using it. Start by trying to match the correct percentages to the statements located below.

1. Percentage of smokers who start smoking in their teens.  A. About 30%
2. Percentage of smokers age 17 or under who say they regret starting.  B. 80%-90%
3. Percentage of youth smokers who will continue smoking and die early from a smoking-related disease.  C. 70%