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A Good Time to Be a Quitter

New 'Drug Czar' William Bennett Says He'll Stop Smoking Before Taking Office

By Robin Marantz Henig
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When William Bennett last week vowed to quit smoking before he came on board as President-elect George Bush's "drug czar," he might have gotten himself into more than he bargained for.

Bennett had an inkling of how hard it would be to quit. He had tried, unsuccessfully, to quit before. "I've been scolded about it," Bennett has said of his two-pack-a-day habit, "and I deserve to be scolded about it."

In the past 25 years, since the first Surgeon General's report on smoking and health, more than 40 million Americans have kicked the habit. Many more have tried, but like Bennett, have failed. Of the 51 percent of Americans who smoke, estimates are that as many as 75 percent to 85 percent would like to quit but, for one reason or another, cannot.

Meanwhile, Surgeon General C. Everett Koop's annual report on smoking showed that smoking causes more deaths than research had previously suggested.

In addition to revising upward the estimate of deaths each year associated with cigarette smoking, from 300,000 to 390,000, last week's report concluded for the first time that smoking causes stroke, as well as lung cancer and cervical cancer.

With the overwhelming evidence that smoking is harmful and the immense publicity given to this fact, why do so many people find it virtually impossible to quit a potentially lethal habit?

What neuroscientists are finding is that people who have a hard time quitting are different from those smokers who can throw away their last pack and not look back.

Nicotine—the habit-forming agent in cigarette smoke—is known to exert a powerful influence on behavior. It can help some people concentrate and perform better. Smokers report a sense of euphoria whenever they light up and take that first drag.

For most cigarette smokers, the habit usually is begun early in life. Sixty percent of smokers, according to government figures, already have started smoking by the age of 16, and 90 percent by age 21.

And when a powerful behavior-shaping drug such as nicotine is inhaled 200 times a day beginning in adolescence—a period of great hormonal and psychological upheaval—the action of the drug soon becomes interwoven with, and finally inseparable from, the smoker's personality.

"You have here a drug that makes you perform better, helps you concentrate on long, boring vigilance tasks," says Dr. John Hughes, associate professor of psychiatry at the University of Vermont School of Medicine. "You take it when you're young, use it for 30 years and come to depend on it to help you concentrate. When you stop, you've lost the ability to [concentrate] for yourself."

Most intriguing is the connection between smoking and depression.

Ex-smokers seem to undergo some physiological changes that are associated with psychiatric problems. Quitters, for example, tend to have more dreams and more intense dreaming—changes that can be seen in a sleep lab.

"This is one of the markers for depression," says Hughes. "In addition, when you're depressed, the time between the moment you fall asleep and your first dream cycle gets shorter. When you stop smoking, the same thing happens."

More evidence for the smoking-depression link was reported last spring by Dr. Alexander Glassman, a Columbia University psychiatrist and chief of clinical psychopharmacology at the New York State Psychiatric Institute. In a study designed to test the value of clonidine, a drug that lowers high blood pressure, in helping hardcore smokers quit, Glassman found that his subjects were nearly 10 times as likely as nonsmokers to have a history of depression. He also found that these smokers were only half as likely to succeed in quitting as were heavy smokers without such a history.

"If you have a history of depression," says Glassman, "you're more likely to get hooked on cigarettes—and it's a whole different experience if you do."

Glassman has just begun a four-year study of smokers, funded by the National Institute on Drug Abuse, that will answer the questions of whether depressed smokers have a harder time quitting, whether nicotine withdrawal causes depression and whether treating the depression helps improve a smoker's chances of success in giving up cigarettes.

Other researchers are looking into whether nicotine in a non-inhaled form, such as in nicotine gum, is a cigarette substitute that would be useful for people with special problems breaking the smoking habit.

"The fact that some people can quit smoking easily does not mean they are morally stronger," says Glassman. "We are finding that there are certain factors we are born with that seem to change our susceptibility to drugs, and that includes nicotine."

In other words, those who are most susceptible—which might include those with a genetic predisposition to depression—just seem to have a harder time of quitting.

The chemical involved in using nicotine is the neurotransmitter acetylcholine, which is thought to stimulate indirectly the "reward pathway," or pleasure center, in the brain. This is the same reward pathway that is turned on, more directly and intensely, by heroin and cocaine.

This brain chemical can have both positive and negative effects on the smoker's moods and energy levels. Depending on which kind of cell the acetylcholine reaches, it can lower levels of the hormone norepinephrine and make the person feel depressed. If it attaches to a different type of cell—the cell that seems to be activated by nicotine—it increases the amount of the hormone and the person feels great.

The sense of well-being or euphoria connected with smoking can give way, in the absence of nicotine, to just the opposite emotion, says Dr. David Janowsky, chairman of psychiatry at the University of North Carolina at Chapel Hill. Janowsky has mimicked nicotine withdrawal symptoms by using a drug that acts on the same brain chemicals and causes depression. In his study, normal volunteers experienced a "dysphoric" state—"just feeling generally bummed out"—with the drug.

"They become depressed, irritable, anxious," Janowsky says, "not unlike the way people say they feel while withdrawing from cigarettes."

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Although much is yet to be learned about smoking addiction, scientists have a better understanding of the mechanics of nicotine metabolism—and, by extension, of the mechanics of nicotine withdrawal. As a result, they can start asking the right questions about the brain during smoking cessation. What differentiates the smoker who quits with ease from the smoker who suffers for months after quitting? Why do some ex-smokers suffer from memory loss, irritability and inability to concentrate? Are there physiological explanations for the sleep disturbances and food cravings that many ex-smokers report? And how often does it happen that cessation of cigarette smoking uncovers problems long masked by the nicotine, such as depression?

"I get into a lot of trouble for saying this, in light of the current temperance movement regarding cigarettes," said Dr. Ovide Pomerleau, director of the behavioral medicine program at the University of Michigan School of Medicine. "But I still consider it an open question whether smokers need some substance to optimize their performance, whether people become smokers because they have a deficit somewhere." ■

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