Health Bulletin

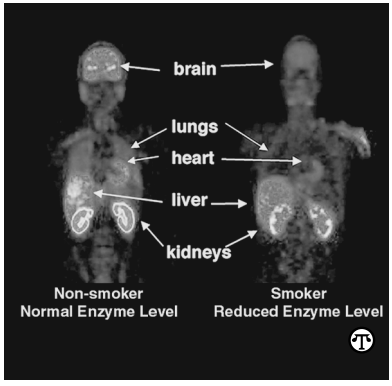
New Information About Nicotine Addiction

(NAPSA)—It is well known that smoking cigarettes can directly and often fatally damage the lungs. Now, according to the National Institute on Drug Abuse (NIDA), new research shows that cigarette smoking also decreases the levels of a critical enzyme called monamine oxidase B (MAO B) in the kidneys, heart, lungs and spleen. Too much or too little of this critical enzyme can have an effect on a person's mental or physical health.

"When we think about smoking and the harmful effects of smoke, we usually think of the lungs and of nicotine," said Dr. Nora D. Volkow, NIDA's director, one of the authors of this study. "But here we see a marked effect on a major body enzyme in parts of the body far removed from the lungs that we know is due to a substance other than nicotine. This alerts us to the fact that smoking, which is highly addictive, exposes the whole body to the thousands of compounds in tobacco smoke."

Thirty percent of the U.S. population over the age of 12 (71.5 million people) uses tobacco. In addition to causing more than 440,000 deaths each year, smoking costs more than $75 billion in direct medical costs each year.

Because the nicotine in tobacco is highly addictive, when smokers quit, they often experience physical and emotional withdrawal symptoms.



Cigarettes can contribute to sending your health up in smoke in more ways and more parts of the body than previously thought.

Research has shown that nicotine, like cocaine, heroin and marijuana, increases the level of the neurotransmitter dopamine, which affects the brain pathways that control reward and pleasure.

Recently, scientists pinpointed a particular molecule (the beta 2 [b2] subunit of the nicotine cholinergic receptor) as playing an important role in who is more likely to become addicted to cigarettes. In tests, mice that lack this subunit fail to give themselves nicotine, implying that without the b2 subunit, the mice do not experience nicotine as positively. This new finding may help scientists develop new nicotine addiction medications.

Another study found dramatic changes in the brain's pleasure circuits during withdrawal from chronic nicotine use. These changes are comparable in magnitude and duration to similar changes observed during the withdrawal from other abused drugs such as cocaine, opiates, amphetamines and alcohol. Scientists found that laboratory rats whose nicotine was withdrawn suddenly had a harder time experiencing pleasure from other sources. These changes lasted several days and may correspond to the anxiety and depression experienced by humans after quitting "cold turkey." The results of this research may help develop better treatments for withdrawal symptoms that can interfere with quitting smoking.

Studies have shown that medication combined with behavioral treatment, including psychological support and skills training have the highest long-term success rates in helping smokers quit using tobacco.

For more information on nicotine addiction, visit www.smoking.drugabuse.gov, a Web site created by the National Institute on Drug Abuse, a component of the National Institutes of Health, U.S. Department of Health and Human Services.