

Health Effects of Nicotine Products



UTAH DEPARTMENT OF
HEALTH

New Nicotine Products: Unregulated, Untested, Unproven

New nicotine products are not regulated. There is no credible scientific evidence that claimed ingredients are accurate and complete, that they are safe for human consumption, or that they can effectively be used as a cessation tool. Until such evidence can be provided, they should not be considered safe.

Nicotine: Health Effects and Toxicity

Tobacco products and e-cigarettes contain nicotine. Nicotine is a highly addictive¹ psychoactive drug.² Nicotine is harmful to the body. Nicotine's effects include³: increases in blood pressure, increase in heart rate, constriction of arteries, stimulation of the central nervous system. Nicotine is toxic. Acute nicotine toxicity is associated with over-stimulation of nicotinic receptors; burning in the throat with nausea and vomiting occurs quickly after ingestion. More toxic manifestations include cardiac tachyarrhythmias (abnormal electrical activity in the heart, i.e. heartbeat is too fast, too slow, or irregular), seizures, and hypertensive crisis.⁴ The lethal dose of nicotine in adults is from 0.5 to 1.0 mg/kg of body weight or a total dose of 30--60 mg. Toxic symptoms can be seen at doses as low as 2-5 mg of nicotine. Small children can develop symptoms after exposure to as little as 1 mg of nicotine. Nicotine is used in a number of pesticides because of its toxic properties.

Cessation: Approved Methods Exist, Approved Methods Work

The Food and Drug Administration (FDA) is charged with protecting the health and welfare of the American population. Currently, the FDA has approved five nicotine replacement therapies (NRT) as safe and effective including: (1) nicotine patch; (2) nicotine gum; (3) nicotine lozenge; (4) nicotine nasal spray; and (5) nicotine inhaler. Having undergone rigorous safety testing, these products help people break their addiction to nicotine. There are also two pharmaceutical options for cessation that include: (1) Varenicline (Chantix); and (2) Bupropion (Zyban). As with all FDA approved cessation methods, these NRTs are for time limited use, with some to be used for weeks, others a few months.

Public Health: Considerations for Utahns

Approved cessation devices exist. Emerging nicotine products risk deterring current smokers from quitting. Claims about the safety of new tobacco products are unsubstantiated. In the 50s it was filtered cigarettes; in the 60s it was low tar cigarettes; in the 70s it was low nicotine cigarettes; all were perpetuated as false health claims to help smokers quit. These innovations maintained sales, increased initiation, induced relapse from ex-smokers, and deterred quit attempts from tobacco users.⁵ These products could serve as a pathway to nicotine addiction for children, leading them to smoke cigarettes and use other tobacco products. Emerging nicotine products and e-cigarettes have been marketed in youth-friendly candy and fruit flavors including frost, bubblegum, cookies and cream, and cola.

"This is not a safe product. This is not safe tobacco. It is a product like cigarettes that causes cancer and kills. Further, it is not a method of helping smokers to quit smoking. The purpose of smokeless tobacco candy is not to help people quit tobacco products, it is designed to addict them to tobacco products. The idea that the tobacco companies would be out marketing a product designed to get people to quit using tobacco products is, quite frankly, obviously ridiculous." Former U.S. Surgeon General Carmona.⁶

¹Repeated exposure to nicotine results in the development of tolerance, requiring higher doses of the drug to produce the same initial stimulation. People often become dependent or addicted.

²World Health Organization. <http://www.who.int/topics/tobacco/en/>.

³Nicotine: The brain and body. Date retrieved: February 4, 2010 <http://faculty.washington.edu/chudler/bex/nici.pdf>

⁴Centers for Disease Control and Prevention (2009). Date retrieved: February 4, 2010 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5218a3.htm>

⁵Tobacco harm reduction: Promise and perils (2002). Society for Research on Nicotine and Tobacco:4:2: pp S61-S71.

⁶Retrieved: February 4, 2010 <http://www.govtrack.us/congress/record.xpd?id=111-s20090603-17&person=400054>