



Stay Ahead of Substance Abuse

E-cigarettes: What every parent and caregiver needs to know

- **What are e-cigarettes?**

Electronic or e-cigarettes are devices designed to mimic cigarettes. The metal tubes are designed to look like real cigarettes and contain a cartridge filled with a nicotine-laced liquid that is vaporized by a battery-powered heating element. The nicotine vapor is inhaled by smokers when they draw on the device, as they would a regular cigarette. Most e-cigarettes claim to contain nicotine, and some claim to also sell nicotine-free cartridges. They come in a number of flavors, nicotine levels, and varieties, all claiming to be a less dangerous alternative to smoking cigarettes, and are flooding the market.

- **Why do people use e-cigarettes?**

Many people are using e-cigarettes as a cessation device or simply because they mistakenly think that they are less harmful than regular cigarettes. They are marketed as a safe alternative to smoking tobacco, as well as a way to cut down or stop smoking cigarettes altogether. There is simply not enough research to support safe, effective use of e-cigarettes as a cessation device. In addition to using as a cessation device, or an alternative to smoking cigarettes, people (young and old) are using the vaping device as a way to smoke other things, not just the liquid nicotine. There have been reports of smoking hash oil, alcohol, and other drugs that can be put into a liquid form. Therefore, if you are finding e-cigarettes or vaping tubes in your child's room, they could be using them to smoke other liquids in them as well.

- **What are the Nebraska and Iowa e-cigarettes laws?**

Nebraska:

Nebraska prohibits the sale of e-cigarettes to anyone under 18 years of age.

In Nebraska, any cigarette-like device or tobacco product that is not "lit" does not meet the definition of smoking, therefore, they are allowed indoors. Businesses have the authority, however, to prohibit the use of these products on their property. The use of e-cigarettes in workplaces and public places is a significant public health concern, not only because of their unregulated constituents and the potential health impact of the vapor on users and bystanders, but also because e-cigarette use causes public confusion as to where smoking is allowed, resulting in compliance problems with smokefree laws.

Most local and state smokefree laws were enacted before e-cigarettes were on the market, so while such laws do not explicitly mention e-cigarettes, it should not be assumed that their use is

permitted. Existing smokefree laws are often interpreted to prohibit e-cigarette use in their smokefree provisions.

Iowa:

Iowa does not have specific e-cigarette bans, however, the retail sale of them has been restricted to a certain degree. They are considered tobacco products, and in order to sell them in a retail setting, one must have a retail tobacco license.

- **How are they harmful to smokers and/or non-smokers?**

E-cigarettes do not just emit “harmless water vapor.” Secondhand e-cigarette aerosol (incorrectly called vapor by the industry) contains nicotine, ultrafine particles and low levels of toxins that are known to cause cancer.

- E-cigarette aerosol is made up of a higher concentration of ultrafine particles than in conventional tobacco cigarette smoke.
- Exposure to fine and ultrafine particles may exacerbate respiratory ailments, such as asthma, and constrict arteries, which could trigger a heart attack.
- At least 10 chemicals identified in e-cigarette aerosol are on California’s Proposition 65 list of carcinogens and reproductive toxins, also known as the Safe Drinking Water and Toxic Enforcement Act of 1986. The compounds that have already been identified in mainstream (MS) or secondhand (SS) e-cigarette aerosol include: Acetaldehyde (MS), Benzene (SS), Cadmium (MS), Formaldehyde (MS,SS), Isoprene (SS), Lead (MS), Nickel (MS), Nicotine (MS, SS), N-Nitrosornicotine (MS, SS), Toluene (MS, SS).
- E-cigarettes contain and emit propylene glycol, a chemical that is used as a base in e-cigarette solution and is one of the primary components in the aerosol emitted by e-cigarettes. Even though propylene glycol is FDA approved for use in some products, the inhalation of vaporized nicotine in propylene glycol is not. Some studies show that heating propylene glycol changes its chemical composition, producing small amounts of propylene oxide, a known carcinogen. Short-term exposure causes eye, throat, and airway irritation. Long-term inhalation exposure can result in children developing asthma.
- Short-term use of e-cigarettes has been shown to increase respiratory resistance and impair lung function, which may result in difficulty breathing.
- FDA scientists found detectable levels of carcinogenic tobacco-specific nitrosamines in e-cigarette aerosol.
- People exposed to e-cigarette aerosol absorb nicotine (measured as cotinine), with one study showing levels comparable to passive smokers.
- Diethylene Glycol, a poisonous organic compound, also was detected in e-cigarette aerosol.
- Exhaled e-cigarette aerosol contained propylene glycol, glycerol, flavorings, and nicotine, along with acetone, formaldehyde, acetaldehyde, propanal, diacetyl, and triacetyl.
- Many of the elements identified in the aerosol are known to cause respiratory distress and disease. The aerosol contained particles $>1 \mu\text{m}$ comprised of tin, silver, iron, nickel,

aluminum, and silicate and nanoparticles (<100 nm) of tin, chromium and nickel. The concentrations of nine of 11 elements in e-cigarette aerosol were higher than or equal to the corresponding concentrations in conventional cigarette smoke.

E-cigarette aerosol is a new source of pollution, toxins, and Volatile Organic Compounds (VOCs) being emitted into the environment. We do not know the long-term health effects of e-cigarette use and although the industry marketing of the product implies that these products are harmless, the aerosol that e-cigarettes emit is not purely water vapor. E-cigarettes cause exposure to different chemicals than found in conventional cigarettes and there is a need for risk evaluation for both primary and passive exposure to the aerosol in smokers and nonsmokers.

- **What does this mean to the public?**

A Creighton University study is currently examining how e-cigarettes affect the lungs and one's ability to stop smoking regular cigarettes. Some studies have indicated that e-cigarettes are not effective. The public is waiting on the FDA, who will have e-cigarettes regulated in 2015. Until then, they have stated that e-cigarettes should not be considered cessation devices. This means that e-cigarettes are not safe alternatives to smoking cigarettes. People who are trying to quit smoking should consider using nicotine patches or nicotine gum and call the Nebraska or Iowa Tobacco Quitline at 1-800-QUIT-NOW.

http://m.livewellnebraska.com/news/metro/creighton-tracks-lung-function-toxin-levels-of-e-cigarette-users/article_1addb3e5-0f62-5ecf-90f2-24da1f95e2a6.html?mode=jqm

<http://www.webmd.com/smoking-cessation/features/ecigarettes-under-fire>

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