



Santa Rosa City Council

Electronic Cigarettes: A Summary of the Public Health Risks and Recommendations

Presented by:

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Purpose of CA Health Advisory



HEALTH ADVISORY – January 28, 2015

Electronic Cigarettes: A Summary of the Public Health Risks and Recommendations for Health Care Professionals

This health advisory seeks to inform health care professionals of the public health risks posed by the marketing, sale and use of electronic cigarettes (e-cigarettes) especially to children and young people. Electronic cigarettes (e-cigarettes) are battery-operated devices, often designed to resemble a cigarette, that deliver and emit a nicotine-containing aerosol. E-cigarettes are considered electronic nicotine delivery devices (ENDS) and have many names. They are frequently referred to as e-cigs, e-hookahs, hookah pens, vapes, vape pens, vape pipes, or mods. There are disposable and rechargeable e-cigarettes as well as refillable "tank systems" that hold a larger volume of the e-cigarette liquid (e-liquid) and that heat the e-liquid to higher temperatures.¹

Toxicity of E-cigarettes and Exposure to Emissions

The heated e-liquid forms an aerosol that contains high concentrations of ultrafine particles that are inhaled and become trapped in the lungs.² Chemicals in the aerosol are absorbed through the blood stream and delivered directly to the brain and all body organs. Analyses of e-liquids by the Food and Drug Administration (FDA) and other laboratories found variability in the content of e-liquids and inaccurate product labeling related to nicotine content and chemicals.³

Typically, e-liquids contain nicotine, flavoring agents, propylene glycol and toxic chemicals known to cause cancer, birth defects and other reproductive harm.^{1, 4-7} While several studies found lower levels of carcinogens in the e-cigarette aerosol compared to smoke emitted by traditional cigarettes, both the mainstream and secondhand e-cigarette aerosol have been found to contain at least ten chemicals that are on California's Proposition 65 list of chemicals known to cause cancer, birth defects or other reproductive harm, including acetaldehyde, benzene, cadmium, formaldehyde, isoprene, lead, nickel, nicotine, n-nitrosomonotobaccoamine, and toluene.^{1, 5-7}

E-cigarette emissions are also a health concern for those exposed to the secondhand aerosol. Although not as dangerous as secondhand smoke from combustible tobacco products, people exposed to e-cigarette aerosol absorb nicotine at levels comparable to people exposed to secondhand smoke.⁸ E-cigarette emissions also contain volatile organic compounds (VOCs) and fine/ultrafine particles.⁹ These ultrafine particles can travel deep into the lungs where they get trapped and may lead to tissue inflammation.⁹

- ▶ Inform health care professionals of the health risks associated with e-cigarette use, especially among youth
- ▶ Provide recommendations to this growing community health threat

What Are E-Cigarettes?

- ▶ Battery-operated devices
- ▶ Heated e-liquid delivers nicotine-containing aerosol
- ▶ Referred to as e-cigs, e-hookahs, hookah pens, vapes, vape pens, vape pipes, or mods
- ▶ Disposable, rechargeable, and refillable “tank systems”





E-Cigarette Emissions

- ▶ A health concern for those exposed to the secondhand aerosol.
 - ▶ People exposed to e-cigarette aerosol absorb nicotine at levels comparable to people exposed to secondhand smoke.
 - ▶ Secondhand aerosol contains volatile organic compounds (VOCs) and high concentrations of fine/ultrafine particles. These ultrafine particles can travel deep into the lungs where they get trapped and may lead to tissue inflammation.
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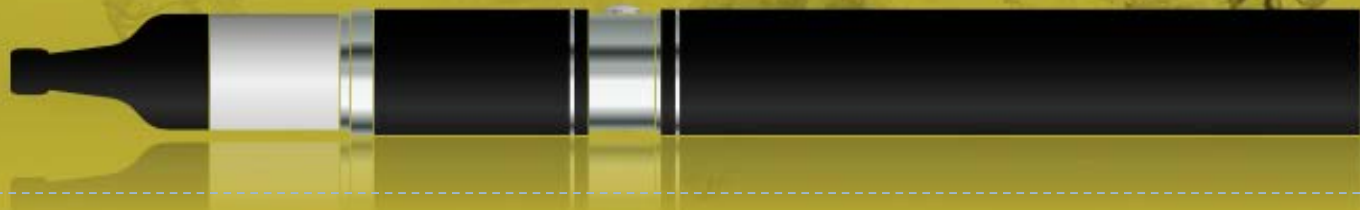




IT'S **NOT** JUST "HARMLESS WATER VAPOR"

E-cigarette aerosol contains
at least **10 chemicals** on
California's Prop 65 list of
chemicals known to cause
**cancer, birth defects or other
reproductive harm.**

TOLUENE
ACETALDEHYDE
BENZENENE
CADMIUM
FORMALDEHYDE
ISOPRENE
LEAD
NICKEL
NICOTINE
N-NITROSONORNICOTINE



Health Effects of Nicotine

- ▶ The primary psychoactive ingredient in e-liquid.
- ▶ A highly addictive neurotoxin; as addictive as heroin and cocaine.
- ▶ Stimulates pleasure/reward pathways in the brain and adversely affects the cardiovascular, nervous, and reproductive systems
 - ▶ Causes blood vessels to constrict, raising the pulse and blood pressure; may increase the risk of a heart attack
 - ▶ Impedes brain development in adolescence and predisposes future tobacco use
 - ▶ Contributes to low birth weight, preterm delivery and stillbirth





Cessation Claims

- ▶ No scientific evidence e-cigarettes help smokers successfully quit or reduce consumption of traditional cigarettes.
- ▶ Studies suggest e-cigarettes inhibit people from successfully kicking their nicotine addiction.
- ▶ Dual use of cigarettes and e-cigarettes do not reduce cardiovascular health risks.



89%
of e-cigarette
users are still
using them
one year later



Recommendations for Health Care Providers

- ▶ **Educate, Advise and Protect Unborn Children, Young Children and Adolescents**
 - ▶ E-cigarettes are especially harmful to adolescents and pregnant women.
 - ▶ Advise e-cigarette users about the toxicity of these products to themselves and those subjected to secondhand emissions.
 - ▶ Ultrafine particles emitted by e-cigarettes increase the risk for heart and respiratory disease.
- ▶ **Educate About Clean Indoor Air**
 - ▶ Use of e-cigarettes indoors and around children and pregnant women should be avoided.
- ▶ **Encourage cessation**
 - ▶ Advise current smokers and e-cigarette users to quit
 - ▶ Refer to cessation resources offered by their health plan
 - ▶ Refer to California Smokers' Helpline at 1-800-NO BUTTS



Resources



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