



## **AHNS Prevention & Early Detection Committee Position Statement on E-Cigarette Use**

*Approved by the AHNS Executive Council July 2016*

Electronic cigarettes (e-cigarettes) are products that deliver a nicotine-containing aerosol (commonly called vapor) to users by heating a solution typically made up of propylene glycol or glycerol (glycerin), nicotine, and flavoring agents. They have been described as “an electronic atomization cigarette that functions as substitutes for quitting smoking and cigarette substitutes.” There has been rapid market adoption and permeation of e-cigarettes despite a continued lack of information regarding their safety, efficacy for cessation, and known impact on public health. Individual risks and population effects along with environmental influences vary from country to country due to lack of scientific evidence and therefore, regulation. Quality control is variable and users can modify many of the products to allow different carrier compounds and delivery criteria. These engineering differences result in variability in the conversion and output of the nicotine solution that constitutes the aerosol and consequently the concentration of the nicotine and other chemicals added to the solution. E-cigarettes are marketed via television, the Internet, and print advertisements as healthcare alternatives to tobacco smoking and to reduce cigarette consumption. They are also advertised as a way to circumvent smoke-free laws to allow users to continue to smoke in places where smoking is prohibited.

Awareness of e-cigarettes and e-cigarette trials has at least doubled among both adults and adolescents in several countries from 2008 to 2012. Epidemiological population-based studies show that e-cigarettes are most commonly being used concurrently with conventional tobacco cigarettes (dual use). Data suggest that e-cigarettes are most attractive to and prevalent among youth who are also experimenting with or who are current users of tobacco cigarettes. Dual use with conventional cigarettes is the predominant pattern of e-cigarette smokers: 61% in US middle school students and 80% among US high school students in 2011. These results indicate rapid market influx of e-cigarettes among adolescents.

Propylene glycol and glycerin are the main base ingredients of the e-liquid. Exposure to propylene glycol has been shown to cause eye and respiratory irritation, and prolonged or repeated inhalation has been shown to affect the central nervous system, behavior, and the spleen. Dow Chemical Company, in its product safety materials, states that inhalation exposure to [propylene glycol] mists should be avoided. Warnings against exposure to propylene glycol have also been disseminated by the American Chemistry Council and the International Agency for Research on Cancer class 2B carcinogens because of the potential debilitating effects to the upper respiratory tract.

Although e-cigarettes do not burn or smolder similar to conventional cigarettes, bystanders are exposed to the aerosol exhaled by the user. Questionable effects are yet to be determined from secondhand exposure to e-cigarette aerosols. Despite lower levels, studies do confirm toxins including formaldehyde, acetaldehyde, isoprene, acetic acid, propanol, propylene glycol and nicotine, among the exhaled chemical toxins in e-cigarette aerosol vapors. Exposure to propylene glycol has been shown to cause eye and respiratory irritation, and prolonged or repeated inhalation has been shown to affect the central nervous system, behavior, and the spleen.

Furthermore, occupational exposures do not consider the effects to sensitive population subgroups such as people with medical conditions, the elderly, children, and infants, who might be exposed to the secondhand emissions.

Given the lack of clear scientific evidence regarding the safety and effectiveness of e-cigarettes for cessation of, as well as the bystander risk of e-cigarette emissions, the American Head and Neck Society does not endorse the use of e-cigarettes. AHNS agrees that e-cigarette emissions are not simply “harmless water vapor” as they are often promoted and advertised, and further expresses the concern that e-cigarettes represent a viable potential for harm to individual health and environmental pollution. Scientific investigation is warranted to provide a clear understanding of the risks and/or benefits of e-cigarettes and the indications for or against their use.

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