

Policy on Electronic Cigarettes

Originating Council

Council on Clinical Affairs

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Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes the increased use of electronic cigarettes (e-cigarettes) among children and adolescents. This policy intends to educate professionals, parents, and patients about e-cigarettes. Nicotine is highly addictive and has negative effects on brain development from the prenatal period into adolescence.¹ In order to reduce health risks caused by nicotine addiction, the AAPD supports routine screening for tobacco use, treating tobacco dependence, preventing tobacco use among children and adolescents, and educating the public on the health and societal costs of use of e-cigarettes.

Methods

This policy reflects a review of dental and medical literature and sources of recognized professional expertise and stature, including both the academic and practicing health care communities, related to electronic cigarette use by the pediatric patient. In addition, a systematic search of the PubMed[®] electronic database was performed using the terms: e-cigarette use in children, e-cigarette use in adolescents, e-cigarette use in children, e-cigarette use in adolescents, nicotine effects on health; fields: all; limits: within the last 10 years, humans, English, birth through age 18. Papers for review were chosen from this search and from references within selected articles. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

E-cigarettes, also called electronic nicotine delivery systems, are battery powered devices with a heating element that vaporizes a nicotine laced solution which is inhaled by the user.²⁻⁴ The act of using an e-cigarette commonly is called vaping due to the vapors that are inhaled and exhaled.⁴ E-cigarettes are intended and are marketed⁵ as a less harmful alternative for tobacco smokers to consume nicotine.⁶ They also are used as an aid to stop smoking tobacco-containing products,⁷⁻⁹ although studies relating to the effectiveness of e-cigarettes as a smoking cessation aid are mixed.¹⁰ E-cigarette solutions come in a variety of flavors and nicotine concentrations.⁶

The U.S. Preventive Services Task Force found that two of the strongest factors associated with initiation of smoking by

children are parental smoking and parental nicotine dependence.¹¹ Studies have shown that exposure to nicotine has a deleterious effect on the brain of children and adolescents.^{1,12} The Centers for Disease Control and Prevention stated in 2013 that over 1.78 million students in middle and high school reported trying e-cigarettes,¹³ with e-cigarette use by youth is typically for social status, being perceived as cool, and social acceptance.⁴ Since 90 percent of all adult tobacco smokers reported starting smoking as a teenager,¹⁴ and almost 38 percent of habitual e-cigarette users never smoked tobacco products,^{15,16} the potential for increased use of e-cigarettes is a public concern. Recent studies show that e-cigarette use among teens has surpassed tobacco cigarette use.¹⁷ E-cigarettes may serve as an entry point for use of nicotine, an addictive drug.¹⁷

Due to lack of regulation in e-cigarette marketing, children, who are impressionable and model the behavior of adults, are at risk from viewing marketing that is normally banned for tobacco containing products.² The e-cigarettes solutions are available in a number of enticing and appealing flavors, such as chocolate, peppermint, and piña colada.¹⁸ Although they have not been banned for e-cigarettes, these flavors have been banned in cigarettes containing tobacco as they market and appeal to children, adolescents, and first time users.¹⁹

E-cigarettes currently are unregulated by state or federal laws, and manufacturers are not required to disclose their ingredients, nor the substances that are inhaled and exhaled by the user.^{20,21} The base solution contains propylene glycol which can cause eye, throat, and airway irritation²² and, with long term exposure, can cause asthma in children.²³ A five mL vial of e-cigarette refill solution can contain a nicotine concentration of 20 mg/mL or 100 mg per vial. The known lethal dose of nicotine has been estimated to be about 10 mg in children and between 30 and 60 mg in adults.²⁴

As e-cigarettes have become popular as a substitute for tobacco smoking due to indoor smoking restrictions,²⁵ the effect of the exhaled vapors is also a concern. A number of toxic and potentially carcinogenic compounds have been found in the vapors of e-cigarettes.²⁶⁻²⁸ Unrestricted access to smoking of e-cigarettes not only poses health risks to the user, but also may pose health risks to people nearby due to second hand exposure of the vapors.¹³ One study showed a similar effect on serum levels of cotinine (a biomarker for

exposure to tobacco smoke) with an one hour exposure to both secondhand cigarette smoke and e-cigarette vapors.²⁹

In April 2014, the U.S. Food and Drug Administration (FDA) proposed expanding its current regulation of tobacco products to include e-cigarettes. The proposal would ban the sale of e-cigarettes to anyone under 18, require producers to cease giving free samples, and require warning labels stating that nicotine is addictive. Manufacturers would have to disclose ingredients and could not state that their products are safer than tobacco products. The regulation does not address flavors and will not go into effect until two years after the proposal has been adopted.^{30,31}

Policy Statement

- The AAPD recognizes the potential hazards associated with the use of e-cigarettes as a form of nicotine delivery system.
- The AAPD encourages all members to educate patients, parents, and guardians on the health consequences of e-cigarettes and other forms of nicotine delivery systems.
- The AAPD encourages the enactment of FDA regulations on e-cigarette distribution including, but not limited to, prohibiting sales to children under 18, banning the child-friendly flavoring of e-cigarettes, and limiting the use for smoking cessation purposes.
- The AAPD encourages that all e-cigarette solutions be required to be sold in childproof packaging to prevent poisoning of children.
- The AAPD supports more studies being done on the effects of the secondhand vapors and the compounds produced from e-cigarettes.
- The AAPD supports that e-cigarettes be included in the non-smoking laws in restaurants and public places.
- The AAPD supports national, state, and local legislation that bans the sale of e-cigarettes to children and eliminates advertising and/or promotion of e-cigarettes that appeals to or influences children, adolescents, or special groups.
- The AAPD opposes the use of all forms of unregulated nicotine delivery systems, such as tobacco lozenges, nicotine water, nicotine lollipops, or heated tobacco cigarette substitutes.

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