

# E- CIGARETTES HAVE TAKEN US BACK 50 YEARS

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After so many years fighting legal battles to prevent cigarette manufacturers from targeting children in their advertising for tobacco, guess what—cigarette manufacturers are using the same and more powerful tactics to entice children and adults to use e-cigarettes.

Today, there are between 250 and 300 e-cigarette products sold in stores and online, most of which resemble a cigarette, cigar or pipe. They all work through the same basic principle. The user inhales through a mouthpiece, which triggers a small, battery-powered heater that vaporizes liquid nicotine. The vaporized nicotine is combined with propylene glycol, which the user then inhales in a manner similar to smoking a cigarette. When the user exhales (vaping), the vapor contains mainly the propylene glycol, which looks like smoke from a cigarette.

Are e-cigarettes harmful? Unfortunately, at this time, not much is known about the inhalation of concentrated nicotine combined with propylene glycol. It may take years to fully understand the potentially harmful and/or positive effects. What we do know is that nicotine is an addictive drug, with direct, negative effects on the brains of developing fetuses and adolescents. As a leading respiratory hospital and operator of tobacco quit lines for 12 states, we at National Jewish Health, in Denver, Colorado, are intensely interested in the effects of e-cigarettes and have begun research to better understand them.

Lacking significant scientific evidence, the best way to view e-cigarette use is to look at its relative risk compared to tobacco cigarettes. E-cigarette vapor contains far fewer toxic chemicals and carcinogens than does tobacco smoke. Therefore, if e-cigarettes are used to wean individuals off tobacco or to significantly reduce the amount smoked per day, this is a good result. However, if e-cigarettes used by non-smokers produce nicotine addiction and

smoking habits that lead to new tobacco use, e-cigarettes are causing harm. Preliminary research and anecdotal evidence suggest that both of these effects may occur.

No matter what, the growing popularity of e-cigarettes must be viewed as a public health threat to children. The U.S. Centers for Disease Control and Prevention (CDC) recently reported that e-cigarette use among middle and high school students from 2011 to 2012 doubled to 1.8 million users. Nearly 160,000 of those adolescents do not use tobacco, highlighting the danger e-cigarettes present for causing nicotine addiction, inducing future tobacco use and harming brain development. Of special concern is the marketing

of these products, which clearly has been developed to glamorize vaping and attract young people. This cannot be tolerated by society.

How can we deal with the rapid emergence of e-cigarettes and the associated marketing? Individual cities, such as New York, Boston and Los Angeles, have taken admirable steps to regulate e-cigarettes. However, at National Jewish Health, we firmly believe that the U.S. Food and Drug Administration needs to develop a comprehensive regulatory approach for all nicotine-containing products similar to its oversight of tobacco. At a minimum, this approach should cover deciding the legal age at which minors can purchase e-cigarettes; regulating the marketing of these products, with particular focus on limiting the appeal to youth; and establishing standards of dosing and additives used in the products. Last, we highly recommend that the FDA promote, through the CDC, further scientific research into both the positive and negative aspects of these products.



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