

# House Call: Nicotine is still nicotine, no matter the delivery system, and it's still bad for you

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E-cigarettes have been available in the United States for just more than 10 years now. In that time, they have really taken off and are becoming increasingly popular. They are frequently marketed as a safe alternative to smoking and other tobacco products, and sometimes as a tool to help you stop smoking all together. I'd like to have a look at these claims and other issues surrounding vaping.

Because e-cigarettes are so new, we don't have solid information about their long-term health effects, but we can make educated predictions from what we know about lung damage from other types of chemical exposure. E-cigarettes may reduce your exposure to the harmful chemicals connected to smoking tobacco, but they are exposing you to other harmful chemicals. These are connected to the breakdown of the chemicals (nicotine, propylene glycol, glycerin, and flavoring compounds) during heating. The vapor from e-cigarettes goes deep into the lungs and contains a soup of toxic compounds from the heating of the fluid to 450 degrees F or higher, breaking down and allowing the recombination of the component chemicals into an enormous variety of chemicals. These compounds are much more likely than not to damage the lungs, even in nicotine-free vaping.

As a tool to help a person stop smoking, e-cigarettes produce mixed results. There are a few reports of people successfully quitting the habit using e-cigarettes, but there are far more cases where people simply end up using them to replace tobacco use in situations where they cannot smoke. Sometimes people even end up consuming more nicotine per day than they were before they started using e-cigarettes. Another issue with e-cigarettes that I was surprised to learn about was injury due to battery faults. Every year, there are people who are injured by exploding e-cigarette batteries.

A big problem I've seen with e-cigarettes has to do with young people. Many of the flavors offered are enticing to young people and research has shown that young people who vape are five times more likely to try smoking cigarettes than those who do not vape.

With the invention of nicotine delivery systems such as e-cigarettes, more research is being done on the effects of nicotine exposure that does not involve tobacco. The news is not good. In 2015, a group of scientists reviewed 90 articles reporting on the effects of nicotine that excluded exposure through smoking. Even without exposure to the tar and other chemicals from tobacco smoke, exposure to nicotine is harmful to your body. That said, there is debate in the public health community about e-cigs. In England, they are being recommended alongside nicotine patches, gum, etc., as an aid for quitting smoking. While I am not ready to recommend them, I agree that it is hard to believe that they are worse than burning compost and sucking the smoke into your lungs. Cough. Gag.

As I have written in previous columns, nicotine damages your cardiovascular system and puts you at increased risk of strokes, heart attacks and arterial disease. Nicotine makes wounds heal more slowly, so if you are injured or have to have surgery, your recovery time will be longer than it ought to be. Nicotine in any form increases the risk of getting cancer.

My advice is if you don't vape, don't start. If you smoke cigarettes and want to stop, don't use e-cigarettes as a way to wean yourself off of nicotine. Talk with your doctor about trying one of several proven methods of smoking cessation and give one a try.

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