

Health Journal™

ARE
e-cigs

HOOKING A
NEW GENERATION
OF SMOKERS?

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BUILDING
MUSCLE
OVER 50

THE **Copper**
infusion
SOLUTION

YOU'RE EATING
ROTTEN
FOOD
AND LOVING IT!





electronic cigarettes

clouded in controversy

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VAPING. YOU MIGHT HEAR YOUNG PEOPLE USING THIS TERM on the weekend, as in “let’s go vaping tonight.” Celebrities like Jenny McCarthy and Johnny Depp have also been spotted vaping in advertisements and on the movie screen, adding to the trend’s growing popularity.

While it could almost be another Internet dance craze or illegal street drug, vaping has little to do—at least directly—with shaking your butt on YouTube. And as far as drugs go, the one that is used for vaping is one hundred percent legal.

Vaping refers to inhaling the vapors from an electronic cigarette, a battery-powered device that delivers a dose of

nicotine, flavoring and other chemicals. Marketed as a healthy alternative to smoking regular cigarettes—and even as a tool to help people quit smoking—electronic cigarettes, like their traditional counterparts, are clouded in controversy.

With a shortage of scientific evidence and federal regulation of these devices, questions remain about their safety and effectiveness. In addition, health professionals increasingly express concern that electronic cigarettes may lead young people toward a lifetime of addiction by encouraging them to smoke regular cigarettes.

NOW IN FRUIT LOOP FLAVOR!

Electronic cigarettes, also known as e-cigarettes or e-cigs, come in many shapes and sizes, including conventional cigarettes, cigars and pipes. Some even look like pens or USB memory sticks.

When a person inhales on the mouthpiece of an electronic cigarette—which is powered by a rechargeable or disposable battery—liquid inside a cartridge is heated and turned into a vapor that is delivered to the lungs. The vapor resembles cigarette smoke, but lacks many of the toxic chemicals and odor found in regular second-hand smoke.

The liquids—known as juices or e-juices—vary across brands, but contain a mixture of nicotine, flavoring and other chemicals. They also come in a wide range of flavors, from tobacco or campfire, to more fun ones like gummy bear or Fruit Loops.

These kinds of personal stories no doubt help sell electronic cigarettes, but when it comes to smoking cessation programs, health professionals prefer science to fun flavors.

When Heath is asked by her students why she recommends nicotine gum or lozenges, but not electronic cigarettes—which also contain nicotine—she often responds, “It comes down to two things. Number one, do we have science to show the safety and the efficacy of those products? And number two, are they FDA-regulated?”

Many health policy experts expect the U.S. Food and Drug Administration (FDA) to bring electronic cigarettes under the same manufacturing, marketing and age restrictions as tobacco products, but the agency’s recently proposed rule covering these devices is still pending.

Electronic cigarettes are also so new that few large studies have been published about their use as a tool to quit smoking. That is starting to change.

In a recent small study, the medical journal *Lancet* found that

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BIG MARKET IN QUITTING

With their hip designs and fun flavors, electronic cigarettes exude a certain amount of style, which sets them apart from other tools used to help people quit smoking.

You would never find a boutique shop selling only nicotine patches or nicotine gum, but stores that specialize in electronic cigarettes, vapor cartridges and accessories are popping up across the country—part of an estimated \$2 billion market.

“You know as well as I do that the sales [of electronic cigarettes] have just gone through the roof,” says John Espinosa, owner of Pioneer Vapes, an electronic cigarette store and lounge in Virginia Beach, Va.

Espinosa is a strong advocate for electronic cigarettes as a tool for quitting smoking. He started smoking when he was 14 and was finally able to quit a few years ago using electronic cigarettes.

Starting his business, then, was a way for him to reach out to other smokers.

“As a long-time user, I thought that it was just the right time,” he says. “It was something that I wanted to do. I feel that we can make a big impact in smokers’ lives by selling electronic cigarettes.”

HIP DESIGNS, LITTLE SCIENCE

Espinosa is not alone in using electronic cigarettes to quit smoking.

“I have patients who have been successful in quitting and they have used the electronic cigarette” says Dr. Janie Heath, associate dean and professor of nursing at the University of Virginia School of Nursing. “Either completely dropping their cigarettes and picking up the electronic cigarettes, or alternating, meaning they’ll use a traditional cigarette, and then next time they’ll use their electronic cigarette—so that they taper themselves off.”

electronic cigarettes—with or without nicotine—were “modestly effective at helping smokers to quit smoking, with similar results as nicotine patches.”

Before Heath accepts electronic cigarettes as safe and effective, though, she would need to see “large, randomized, controlled trials,” like the kind used to test new medications.

A SAFER ALTERNATIVE?

For anyone who has ever sat in a smoky bar, it’s clear that cigarette smoke is much different from the quickly dissipating vapor given off by electronic cigarettes.

“Second-hand vapor is nowhere near as bad in comparison to second-hand smoke from a regular cigarette,” says Espinosa.

Health professionals are likely to agree, although lack of FDA oversight means that the chemicals used in e-juice varies from company to company.

“It’s intuitive, obviously, that smoking an electronic cigarette does not have those 4,800 toxins that we know one cigarette has,” says Heath. “But what we still don’t know is what is exactly in them.”

In fact, a 2009 FDA test of some electronic cigarettes showed the presence of several unpleasant ingredients—including cancer-causing nitrosamines and a toxic chemical found in anti-freeze—diethylene glycol.

“So what else is in there?” asks Heath. “That’s just problematic for me. Ethically, I would not recommend that for anyone to consume—consume themselves or to expose others to it.”

If the FDA were to bring electronic cigarettes under the same oversight as tobacco products, e-juice would likely face more stringent testing and packaging guidelines, including listing the ingredients.

Until then, says Heath, “what we’re going through is like the wild, wild west, because there’s so much we don’t know.”

THE NEXT GENERATION

Stores that specialize in electronic cigarettes exude hipness. Their display cases are filled with colorful electronic cigarettes, containers of e-juice with fun flavors and a wide range of accessories.

This youthful attitude worries many health officials. They say that the marketing and flavors—similar to what was banned in 2009 by the FDA for regular cigarettes—are aimed at encouraging a new generation of vapers.

This concern was heightened recently by a Centers for Disease Control and Prevention (CDC) report released in September which found that the use of electronic cigarettes doubled in young people between 2011 and 2012—increasing to 10 percent for high school students and 2.7 percent for middle schoolers.

Health officials are worried that electronic cigarettes may act as a gateway drug for cigarettes, cigars and other tobacco products. Unfortunately the CDC report doesn't show whether or not teens who vape grow up to become chain smokers.

Still, when it comes to youth and tobacco, health officials are cautious, with good reason. Nicotine, which is highly addictive, is

vary with manufacturer, whether it is made in the U.S., China or even at home. E-juice often includes propylene glycol, vegetable glycerin, water and flavoring, but can potentially contain harmful substances.

SHOULD THEY BE REGULATED?

FDA regulation of electronic cigarettes could make it more difficult for companies and businesses to market these devices to minors—through restrictions on purchases by minors, advertising and certain flavors of e-juice.

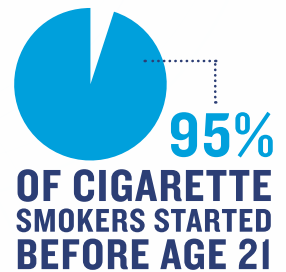
The specifics, however, will have to wait until the FDA's proposed rule about electronic cigarettes winds its way through the approval process.

In the absence of clear guidelines from the federal government, state officials have begun tackling the problem on their own. According to an Oct. 29 story by the Washington Post, Utah, North Dakota, Arkansas, New Jersey and the District of Columbia have all included electronic cigarettes in their current bans on indoor cigarette smoking. Twenty-five states, plus the District of Columbia, also restrict the sale of these devices to minors.

A FEW FACTS ABOUT TRADITIONAL CIGARETTES



ONE CIGARETTE
CONTAINS
4,800
KNOWN TOXINS



present in all tobacco products and most electronic cigarettes.

"It's harder to help an individual quit smoking than it is to get them off of crack cocaine, heroin or any of the other drugs," says Heath.

Additionally, the use of youth-oriented marketing by tobacco companies—such as cartoon characters like Joe Camel and the now-banned flavored cigarettes—has colored the debate over electronic cigarettes.

"When we look at 95 percent of individuals that smoke cigarettes," says Heath, "they all started that initiation before age 21. So there's that likelihood of these younger ones starting on electronic cigarettes, and wanting to have more and more of a hit."

This extra hit could, in fact, mean trying traditional cigarettes. And once a teenager becomes addicted to nicotine—either from electronic or traditional cigarettes—the chance of quitting successfully is very low.

Not every electronic cigarette store, though, shares the philosophy of "hooking" new users at a young age.

"Ninety percent of people who come into my store are smokers," says Espinosa, who credits electronic cigarettes for helping him quit. And as for the other 10 percent—the non-smokers who want to try something cool and hip?

"We try and deter those types of customers as much as possible," he says, "and usually what we will do with them is offer them electronic cigarettes that do not contain nicotine, because nicotine is the addictive agent. We don't want to get them hooked on a habit that they don't already have."

As with regular e-juice, the ingredients in nicotine-free versions

Virginia is not one of them, which means people are free to vape during dinner without having to leave the restaurant. Also, minors are allowed to purchase electronic cigarettes in Virginia. Unless, of course, a business decides to impose its own restrictions on purchasing or the indoor use of these devices.

While the FDA and local governments slowly clear away the cloud of issues surrounding electronic cigarettes, Heath continues to help people quit smoking—using methods that are proven to be effective, such as counseling and FDA-approved nicotine replacements or drugs.

If larger, high-quality studies are ever published that show that electronic cigarettes are as effective as the nicotine patch, she will gladly add these hip and fun devices to her collection of smoking cessation tools. Still, science should come before flavor.

"Until we find out what the short-term and long-term health consequences of electronic cigarettes are, if any," she says, "let's put time behind the science." ■



Meet the Author

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Shawn is a science writer and yoga instructor with over 15 years' experience writing about science, health and medicine.

In addition to *The Health Journal*, his work has appeared on Men's Fitness, Greater Good and other consumer health and medical websites.