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# Vaping 101: How Do E-Cigarettes Work?

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The FDA proposed new regulations on e-cigarettes on Thursday, including rules that would make them off-limits to children under 18 years old. Electronic cigarettes have become big business over the last year, with sales reaching an estimated \$2 billion in 2013.

Despite the size of the market, the battery-powered puffers are relatively new to many people. In case you have not seen people "vaping" near you, here are the basics.

## What exactly is an e-cigarette?

Some of them look like normal cigarettes, others like the Sonic Screwdriver from "Doctor Who." They all basically have the same components:

- A rechargeable lithium battery. Some can even be charged with a USB cord connected to your computer.
- A cartridge containing nicotine, flavoring and chemicals like glycerin or polyethylene glycol. Since they are not regulated, they often don't list all of their ingredients.
- An atomizer, which consists of a heating coil.
- An LED light to simulate a burning cigarette.
- A sensor that registers when you take a drag and activates the atomizer and LED light.

## How do they work?

Basically, an atomizer heats the liquid (often called "e-juice") to its boiling point and that becomes vapor you can inhale. That is why smoking e-cigarettes is often called "vaping." Remember the cheesy fog machine you had at your prom? It's the same principle.

You can still get three-piece e-cigarettes with a separate battery, atomizer and refillable cartridge. Most popular brands of e-cigarettes, however, combine the atomizer and cartridge into one "cartomizer." These have the advantage of being disposable, so you don't have to spend time cleaning or refilling your cartridge. The cartridges also last longer because the polyfoam surrounding the heating coil limits the amount of liquid that is vaporized at once.

## So, does it produce smoke or what?

It produces a big cloud of vapor, which dissipates very quickly and has the subtle smell of whatever flavor cartridge you buy, like mint, tobacco or raspberry. E-cigarette users can certainly stand out in no-smoking establishments, which is why some businesses have banned them. But there is no lingering, heavy cloud of smoke like with tobacco cigarettes.

Will e-cigarettes make me poor?

Each cartridge will hold a smoker over for about as long as a pack of cigarettes. That means they are relatively cheap, especially if you live in a city like New York, with a pack of five flavor cartridges costing about the same (\$12) as a pack of tobacco cigarettes. Starter kits, which usually include batteries, a charger and a few cartridges, range from \$30 to \$100.

How long have they been around?

Since 2003, when Hon Lik, a pharmacist in China, developed a version to help him stop smoking. E-cigarettes starting appearing in the United States and Europe around 2006 to 2007, but most people had no idea they were around.

Over the last couple of years, they began to become the subject of countless trend pieces in the media. You can totally blame hipsters in bars, who, no longer allowed to light up American Spirits or "rollie" cigarettes indoors, turned to e-cigarettes.

Do e-cigarettes have a negative health impact?

It's complicated.

Can I hook one up to my iPhone?

Yes, you can. The Supersmoker has Bluetooth connectivity and a speaker, so you can take phone calls or blast Spotify tunes without ever taking a break from vaping. The future is now, people.

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