

# Cigarette alternatives may not be 'safe' tobacco

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Cigarette alternatives, widely perceived to be safe, are often addictive and can be stepping stones to cigarette smoking, according to a scientific review published online in the journal *Clinical Reviews in Allergy and Immunology*.

The evaluation—which focused on electronic [cigarettes](#), cigars, [smokeless tobacco](#) and hookahs—was conducted by UC Davis pulmonary physicians hoping to guide health-care providers in helping patients reduce, or eliminate altogether, their nicotine consumption.

"I talk with patients all the time who want to quit cigarettes or who want the stimulant effects of nicotine while avoiding the harmful effects of cigarettes, and they think these alternatives can help," said Michael Schivo, assistant professor of internal medicine at UC Davis and the lead author of the review. "No tobacco or nicotine product should ever be considered safe, but we wanted to know if four of the more popular cigarette alternatives were safer than cigarettes."

## E-cigarettes and snus: Unclear risks compared to cigarettes

Based on current research, [electronic cigarettes](#) (or e-cigarettes) and snus (pronounced "snoose"), a form of smokeless tobacco made in Sweden, have been suggested to have lower health risks than cigarettes. That's because there is no tobacco (but there typically is nicotine) in e-

cigarettes and the tobacco used in snus is not cured, leading to fewer carcinogens and other compounds linked with cancer, chronic obstructive pulmonary disease (COPD), heart disease and other smoking-related conditions.

E-cigarette use is rapidly increasing, especially among youth. Research from the U.S. Centers for Disease Control and Prevention (CDC) indicates that e-cigarette use doubled among students in grades 6 to 12 from 2011 to 2012. Part of the attraction, according to Schivo, is the lower cost of e-cigarettes and belief that they are less toxic than cigarettes.

If a patient asked for help kicking his or her cigarette habit, however, Schivo said he would likely recommend snus over e-cigarettes. Most snus users—unlike users of American smokeless tobacco—tend to be non-smokers. In addition, snus use is increasing in Sweden, while the country's rates of lung cancer and cardiovascular disease are not.

"There isn't enough research yet on the comparative risks or benefits of e-cigarettes, making it difficult to have meaningful conversations with patients about whether or not they are appropriate alternatives to conventional cigarettes," he said. "There is compelling data, however, showing that snus is not as harmful as cigarettes."

One problem with snus, Schivo said, is that it is not widely available in the U.S., where smokeless tobacco has higher levels of carcinogens than the Swedish version.

## **Cigars: Just as bad as cigarettes**

Based on their review, Schivo and his colleagues regard cigar smoking as just as dangerous as cigarette smoking.

"There are abundant data to strongly suggest that cigar smoking confers substantial health risks," he said. "Like cigarettes, cigars contain over 3,000 compounds, many of which are capable of causing cancer."

Another troubling fact is that cigar smoking is increasing among the educated and affluent, which has also made it more attractive to youth. The 1999 National Youth Tobacco Survey showed that while cigarette smoking decreased by 18 percent among adolescents, their cigar smoking increased by 115 percent.

## **Hookahs: Worse than cigarettes**

The team's top concern was waterpipes - also called hookahs - which are gaining in popularity around the world, especially among young people. The CDC estimates that 17 percent of high school seniors and up to 40 percent of young adults in the U.S have used hookahs.

"Waterpipe smoking is an increasingly appealing social practice," said Schivo. "It involves cheaper and more flavorful forms of tobacco than cigarettes, and it is becoming more convenient, especially around universities where hookah bars are often located."

In waterpipes, smoke produced by burning tobacco with coal or embers is drawn through a pipe connected to a liquid-filled base. The smoke passes through the liquid before being inhaled through a hose and mouthpiece into the lungs. The result is a smooth and easy-to-tolerate smoking experience, leading users to assume it is also safe. Research included in the review, however, showed that the effects could actually be worse than cigarettes.

## **Deeper inhalation of tobacco toxins**

Waterpipe users inhale tobacco smoke more deeply and longer than other types smoking, exposing them to noxious particles in lower portions of the lungs. Although nicotine content in waterpipe smoke is reduced, levels of arsenic, chromium and lead are higher. Contrary to common belief, the liquid through which the smoke passes does not serve as a filter and, in fact, the combustion process adds many of the toxins found in [cigarette smoke](#).

While the health effects of waterpipe smoking have not been well researched, there is growing evidence that it has negative cardiovascular effects and the same risks as cigarettes for lung cancer, COPD and chronic bronchitis. The communal nature of waterpipe smoking may also lead to infectious disease transmission.

Despite these concerns, the government does not currently regulate waterpipe [smoking](#).

"It doesn't make sense that a package of cigarettes has warning labels regarding their harmful effects, yet none of the same warnings apply to hookah tobacco," said Schivo. "Given that waterpipe use has the potential to be the next big [tobacco](#) epidemic, education efforts should focus on informing the public of its harms and reducing access among minors."

Schivo's collaborators on the review, titled "Non-Cigarette Tobacco and the Lung," were his UC Davis colleagues Mark Avdalovic, assistant professor, and Susan Murin, chair of the Division of Pulmonary Medicine.

Provided by UC Davis

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