

Move over e-cigarettes, meet heat-not-burn tobacco

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Dunhill Early Morning Pipe Tobacco, 1990's Murray. Credit: Sjschen/Wikipedia

If you haven't heard of heat-not-burn tobacco, you're not alone, but a new study published today in *PLOS ONE* from San Diego State University Graduate School of Public Health Associate Research Professor John W. Ayers suggests this new method for consuming tobacco is poised for explosive growth.

What is heat-not-burn tobacco?

One of the newest [tobacco](#) products on the market heats leaf tobacco to approximately 500 degrees Fahrenheit (260 C) using battery power to produce an inhalable tobacco aerosol.

Heat-not-burn tobacco is being introduced into markets around the world to appeal to trendy or potentially health-conscious consumers, Ayers said, who still demand the "throat-hit" delivered by combustible cigarettes, but not by most e-cigarettes. The first heat-not-burn device to enter the FDA-approval process in the United States did so in May.

Identifying trends

Because heat-not-burn tobacco products have only been sold in a handful of places around the world, little is known about their popular appeal or how they might fare in future markets such as the United States. How worried should tobacco control leaders be about this potential new fad?

Ayers and colleagues turned to Google search trends to understand the devices' appeal in Japan, the first country with nationwide availability. Popular devices there include Japan Tobacco's "Ploom TECH" released in March 2016, Philip Morris International's "iQOS" released in April 2016, and British American Tobacco's "Glo" released in December 2016. The team focused on internet searches for heat-not-burn tobacco, including generic terms and major brands, analyzing their relative popularity to all searches from 2015 through August 2017.

The team then compared the fraction of all Google queries for heat-not-burn tobacco in Japan to the fraction of all Google queries for e-cigarettes in the United States.

The total number of heat-not-burn queries in Japan grew by 1,426 percent their first year on the market in 2015. Between 2015 and 2017, the number of queries grew by 2,956 percent. Projections based on forecasts from the observed trends suggest that heat-not-burn queries will continue to grow at a similar rate through 2018.

"Heat-not-burn products have quickly become insanely popular," said study coauthor Mark Dredze, professor of computer science at Johns Hopkins University. "Two years ago, there were essentially no queries in Japan for heat-not-burn tobacco, but now there are between 5.9 and 7.5 million each month."

Moreover, the team found that interest in heat-not-burn tobacco in Japan is growing more rapidly than past interest in e-cigarettes when they were first introduced to market. This suggests that as heat-not-burn tobacco is introduced in new markets, its popularity may even eclipse e-cigarettes.

A public health challenge

Millions are seeking out heat-not-burn tobacco in Japan each month and demand is poised to surge across the globe as products are introduced into new markets, Ayers said. It's not clear if searches translate into actual demand, he said, but the team's previous studies of e-cigarettes first predicted the eventual rise of actual vaping rates.

"Tobacco companies try to outmaneuver [public health](#) protections by creating new products that make tobacco appear less dangerous and more appealing," said Theodore Caputi, an undergraduate researcher at the University of Pennsylvania and the study's first author. "People were caught off guard by e-cigarettes, for example. Our study is an early warning and a call to action for public health professionals to address heat-not-burn products now."

The team noted that tobacco control researchers might already be behind the figurative eight ball. "In the entire PubMed database—which catalogs millions of public health studies—just 26 studies even mention heat-not-burn tobacco," said Eric Leas, an alumnus of SDSU's Graduate School of Public Health alum and currently a postdoctoral fellow at Stanford. "There is a tremendous amount we need to learn about heat-not-burn tobacco."

Joanna Cohen, Bloomberg Professor at the Johns Hopkins Institute for Global Tobacco Control, added that many questions remain about the products' potential for harm. "Given heat-not-burn is a tobacco product, all existing policies to protect the public from other [tobacco products](#) should be enforced," she said.

It is incumbent that [tobacco control](#) leaders appreciate the potential demand for new products like these and respond proactive, Ayers concluded.

"Tobacco control is at a new crossroads," he said. "Leaders can reasonably respond to these new data and ready themselves by setting an agenda or wait for big tobacco to set the heat-not-burn agenda for them."

Provided by San Diego State University

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