

# Reddit users concerned by health risks of vaping, according to AI analysis

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A new artificial intelligence analysis of thousands of posts from the popular online discussion forum Reddit reveals that vapers are concerned about e-cigarettes' possible impact on everything from their

respiratory, gastrointestinal, and cardiovascular systems to their mental and sexual health and sleep patterns. They also worry about the possibility of addiction, cancer, and dental problems.

"Our goal is to shed light on how the public, in their natural conversations, describe [health concerns](#) associated with vaping e-cigarettes," said Alexandra DeLucia, a doctoral candidate in computer science at Johns Hopkins University's Whiting School of Engineering.

DeLucia was part of a multi-institution team that conducted the research as part of the JHU's Center of Excellence in Regulatory Science and Innovation. The team included colleagues from the FDA's Center for Tobacco Products, or CTP.

"The FDA CTP's mission is to protect Americans from tobacco-related diseases and death," DeLucia said. "Our hope is that hearing what 'real voices' are saying will significantly enhance understanding of how people think about e-cigarettes."

The researchers believe this information has the potential to inform new, more effective public health research and media campaigns by leveraging the voices and experiences of ordinary people who use e-cigarettes.

DeLucia worked on the analysis with Mark Dredze, an associate professor of computer science at Johns Hopkins and director of research (foundations of AI) at the university's AI-X Foundry; Adam Poliak, an assistant professor of [computer science](#) at Bryn Mawr College; and John W. Ayers, associate adjunct professor of medicine at University of California San Diego.

To find detailed discussions about e-cigarettes, the team turned to Reddit, with its 55 million daily users and about 10 million daily posts.

Reddit was preferred over Twitter and other [social media platforms](#) because of its long, conversational format.

"Tweets are great for learning what restaurants someone went to last night or what [political party](#) they support," DeLucia said, "but when it comes to complex issues, we need richer data that goes beyond Twitter's social media character limits. Reddit gives us that."

In addition, Reddit conversations are conveniently organized into smaller communities called "subreddits," allowing the researchers to identify conversations related to vaping and to have confidence that the conversations being analyzed were relevant. To further focus their data, the team included only discussion threads and posts that contained the phrase "does \_\_\_\_ cause," DeLucia said.

"That allowed us to capture questions such as 'Does e-juice cause X' or 'Does vaping cause X?'" she said.

"What we learned was that people posting in discussion threads about e-cigarette use on Reddit primarily describe respiratory, gastrointestinal, and cardiovascular concerns," DeLucia said. "Less-cited concerns were neurological, dermatology, oral health, and [sexual health](#). Additionally, psychiatry, oncologic, addiction, and sleep concerns were raised by posters."

Next steps for this research include applying this method to additional Reddit communities to discover perceived health outcomes of other products.

DeLucia and the team presented their findings at the [annual meeting of the Society for Research on Nicotine and Tobacco](#), held in early March in San Antonio.

Provided by Johns Hopkins University

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