

# New 'heat-not-burn' cigarettes harm blood vessels: study

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(HealthDay)—Heat-not-burn "cigarettes" could be as harmful to your

blood vessels as traditional smokes, a new animal study suggests.

Tobacco giant Philip Morris is seeking U.S. approval for one of these smoking alternative products, called iQOS. The company claims it's safer than regular cigarettes.

But rats exposed to vapor from the device experienced the same decrease in blood vessel function as those exposed to [cigarette smoke](#), said study senior researcher Matthew Springer.

Impaired blood vessel function increases the risk of heart attack or stroke, and can contribute long-term to hardening of the arteries, said Springer, a professor of cardiology with the University of California, San Francisco School of Medicine.

"I would be frankly amazed if these products were just as harmful as cigarettes in every single way, but less harmful does not equal harmless," Springer said.

The iQOS—pronounced eye-kose—is being test marketed in several countries. It also has been submitted for U.S. Food and Drug Administration approval.

The idea is that heating tobacco is safer for users than burning it. Cigarettes burn at temperatures of 1,112 degrees Fahrenheit, creating [tobacco smoke](#) that contains harmful chemicals. The iQOS heats tobacco sticks to much lower temperatures— up to 662 degrees Fahrenheit—releasing a nicotine aerosol but not actually causing combustion, according to Philip Morris.

The research team decided to test claims that the device is a less harmful way to enjoy tobacco. How? By exposing lab rats to iQOS vapor and measuring their blood vessel function.

Blood vessels are normally able to respond and open wide when the body requires more blood flow, such as at times of great exertion, Springer said.

"Impaired blood vessel function means the blood vessels don't have their natural ability to expand or contract," said Dr. Nieca Goldberg, a cardiologist and medical director of NYU Langone's Center for Women's Health.

The researchers were "surprised" to find that exposure to heat-not-burn vapor reduced blood vessel function on a par with cigarette smoke, Springer said.

Specifically, they found that ten 15-second exposures over five minutes to the vapor reduced blood vessel function by 58 percent, compared with 57 percent for cigarette smoke.

And 10 five-second exposures over five minutes decreased blood vessel function by 60 percent, compared with 62 percent with cigarette smoke.

The circulatory systems of humans and rats have been shown to respond very similarly to tobacco smoke, meaning these findings likely apply to people, Springer said.

People using heat-not-burn tobacco devices still could face the same sort of heart health problems linked to cigarettes, the researchers concluded.

Although there's no smoke, the vapor produced by these devices contains a lot of chemicals that could impair blood vessel health, Springer explained.

"It's not really clear which of these chemicals is causing the problem," Springer said. "I would say nicotine is not the main baddie," he added,

noting their research with marijuana and rats has shown a similar effect on [blood](#) vessels.

It might be that breathing in any kind of aerosol containing tiny particles will cause this reaction in [blood vessels](#), Springer said.

Springer and Goldberg said they hope this new study will be weighed as part of the approval process for the iQOS.

"To me, the most important thing is that any decisions are based on independently validated studies, and any claims of reduced harm are confirmed," Springer said. "They shouldn't be making claims of reduced harm that are not backed up by the facts."

In the meantime, people who want to quit smoking should use proven methods, Goldberg said. Proven methods include smoking cessation counseling and use of nicotine replacement products under supervision.

The U.S. National Institutes of Health and the FDA funded the study. The findings were to be presented Tuesday at the American Heart Association annual meeting, in Anaheim, Calif. Research presented at meetings is usually considered preliminary until published in a peer-reviewed medical journal.

**More information:** Matthew Springer, Ph.D., professor, cardiology, University of California, San Francisco School of Medicine; Nieca Goldberg, M.D., cardiologist and medical director, NYU Langone Joan H. Tisch Center for Women's Health, New York City; Nov. 14, 2017, presentation, American Heart Association annual meeting, Anaheim, Calif.

For more on the iQOS, visit the [U.S. Food and Drug Administration](#).

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