Popularity of vaping grows as more studies reveal health risks

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E-cigarette use is rising, putting more Americans at risk of blood vessel damage and heart disease, according to three new studies.

In the first study, researchers found that nearly 1 in 20 adults use e-cigarettes.

"Our study may have important public health implications and ramifications for educational strategies aimed at targeting various population segments to inform them of the health effects and risks associated with the use of e-cigarettes," said lead author Dr. Mahmoud Al Rifai, a cardiology fellow at Baylor College of Medicine in Houston.

His findings are based on a government survey of more than 930,000 adults. Of those, nearly 29,000 said they were current e-cigarette users, which translates to nearly 11 million American adults overall.

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Overall, vaping rose from 4.3 percent in 2016 to 4.8 percent in 2018.

The increase was striking among women, with their current e-cigarette use rising from 3.3 percent to 4.3 percent. It also rose from 3.9 percent to 5.2 percent among 45- to 54-year-olds, and from 5.2 percent to 7.9 percent among former smokers.

Vaping is also growing in popularity among users of smokeless tobacco. Their use of e-cigarettes rose from 9.2 percent in 2016 to 16.2 percent in 2018, the study found. Al Rifai suspects the trends reflect manufacturers' efforts to market e-cigarettes as products for smoking cessation.

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Meanwhile, two studies from the University of California, Los Angeles, found that vaping might not be as harmless as some people think. In fact, it may increase heart disease risk by causing oxidative stress, a process that can trigger cell damage, researchers said.

"Elevated oxidative stress in otherwise healthy young people who vape may predict increased risk for premature cardiovascular disease," said Dr. Holly Middlekauff, a UCLA cardiologist who led both studies.

"Although the levels were lower than in smokers, it is unknown if there is a safe level of oxidative stress," she said. "If you do not smoke tobacco cigarettes, you should not start using electronic cigarettes."

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In the UCLA studies, researchers compared blood samples from nonsmokers, tobacco smokers and e-cigarette users. The aim was to look for differences in immune cells and markers of oxidative stress linked to buildup of plaque in arteries.

They found that vaping caused the same cell changes and increases in oxidative stress as cigarette smoke. The findings from these studies are scheduled to be presented Wednesday during an online meeting of the American College of Cardiology. Research presented at meetings is typically considered preliminary until published in a peer-reviewed journal.

Dr. Eugenia Gianos is director of Women's Heart Health at Lenox Hill Hospital in New York City. "We never thought that vaping was safe, but we have a lot of suggestion that there could be more harm than we anticipated," said Gianos, who wasn't involved with the studies.

Specifically, she suspects vaping can cause heart disease, because oxidative stress causes inflammation, which can damage heart cells.

Although e-cigarettes haven't been around long enough for us to know their long-term consequences, Gianos said there's no need to wait 20 years to recognize the potential dangers.

"We have evidence of concern that there are major hazards with e-cigarettes," she said. "And there could be far more negative effects that we don't even know about."

Vaping has caused lung damage that has hospitalized and killed people in recent months. Gianos added that ingredients in e-cigarettes may cause cancer and possibly lead to worse outcomes from the current coronavirus pandemic.

More information

For more on smoking and heart disease, head to the U.S. National Heart, Lung, and Blood Institute.