

In secondhand vape, scientists smell risk

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Available in an enticing array of flavors, electronic cigarettes have exploded in popularity since they hit the market about 15 years ago, particularly among middle and high school students. But research

indicates that e-cigarettes—even just being around their use—may not be as "safe" as some people believe.

While the dangers of breathing in secondhand cigarette smoke are well-understood, the science is still unfolding on how inhaling secondhand vapor, or aerosol, affects the body. And people may be underestimating the health risk, said Dr. Talat Islam, an assistant professor of research population and public health sciences at the University of Southern California in Los Angeles.

Islam and his research colleagues have found that exposure to secondhand aerosols from e-cigarettes is associated with increased risk of bronchitis symptoms and shortness of breath among [young adults](#), especially among those who don't smoke or vape themselves, the team reported last year in the journal *Thorax*.

"Aerosols from vaping contain heavy metals and ultrafine particles," Islam said. "If somebody else is vaping in the same area, you're breathing it—those particles are entering your lungs, where they can do damage."

In addition to nicotine, the aerosols include [heavy metals](#) such as lead, nickel and zinc, cancer-causing substances such as benzene, and diacetyl, which has been linked with a condition nicknamed "popcorn lung" in people who vape.

A 2021 study in New York, published in the journal *Tobacco Control*, found the use of e-cigarettes increased the number of fine particles in the surrounding room. Exposure to fine particles, or microscopic particles capable of reaching deep into the lungs, can worsen heart and [lung disease](#), and even lead to premature death.

E-cigarettes were the most commonly used tobacco product among U.S.

middle and [high school students](#) in 2021, government research shows. And while about 1 in 4 students between 2015 and 2017 were exposed to secondhand [e-cigarette](#) aerosols, that figure grew to 1 in 3 students in 2018, according to a 2019 study in JAMA Network Open.

"There's a perception as a whole that vaping is not as harmful as smoking," Islam said. "I think that's why we see such high levels of secondhand exposure."

By the time the [health impacts](#) are fully understood, it may be too late, said Dr. Ellen Boakye, a postdoctoral research fellow at the Johns Hopkins Ciccarone Center for the Prevention of Cardiovascular Disease in Baltimore.

"When people started smoking, the [health effects](#) were not known until years later, and that's the same thing we're seeing with [e-cigarettes](#)," said Boakye, who is also a fellow with the American Heart Association's Tobacco Center for Regulatory Science.

"There is evidence to suggest that e-cigarette use is associated with respiratory conditions and cardiovascular diseases," she added. "As more evidence becomes available, we may see that this association is causal, both for e-cigarette use and for exposure to secondhand vapor."

Boakye said people should minimize their exposure to vaping, ideally by leaving the area. And she urged people who vape to quit, noting that more funding is needed for vaping cessation programs.

"Some of the work we are currently doing shows that a lot of ([young people](#)) are making attempts to quit, and there isn't a lot of support for them," she said, noting most nicotine replacement products are intended for adults. "I think this is an area where a lot of focus should be placed." For help quitting, call 800-QUITNOW (784-8669), text "QUIT" to

47848 or visit smokefree.gov.

Whether inhaling traffic exhaust, [cigarette smoke](#) or e-cigarette aerosols, experts say the message is the same. "We want to breathe in that clean air," Islam said. "Anytime you add things there, we know that has an effect."

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