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How Vaping Nicotine and THC May Increase Depression, Anxiety in Teens and Young Adults

By [Tony Hicks](#) on February 28, 2023 — [Fact checked](#) by Jennifer Chesak



Experts say there are a number of health concerns related to vaping. Jenny Jungle/Stocksy

- In a recent survey, researchers say teens and young adults appear to have more symptoms of depression and anxiety.
- Experts also note that these substances can have effects on the brain, especially among younger people.
- They say the effects are different for each person and many times depend on frequency and dosage.

The American Heart Association surveyed more than 2 500 teens and
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depression and anxiety.

The study's preliminary [findings](#) ✓ will be presented at the [Association's Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Scientific Sessions 2023](#) ✓ in Boston this week.

The research hasn't been published yet in a peer-reviewed journal.

The researchers reported that previous studies have identified links between vaping and symptoms of both anxiety and depression among young adults.

They also said the use of pod-based e-cigarettes has [surged](#) ✓ among youth and young adults in recent years.

"Younger people have long been vulnerable to tobacco use [and] may experience greater harm from nicotine and other drugs and may be targeted by tobacco advertisers and marketers," said [Joy Hart](#), PhD, a study author and a professor of communication at the University of Louisville in Kentucky.

"E-cigarette devices are still relatively new compared to other tobacco products, such as combustible cigarettes and pipes, so more research is needed to try to better understand the popularity of e-cigarettes, including reasons for vaping and the associated health risks among youth," she added.

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Details from the teen vaping study

Researchers surveyed 2,505 teens and young adults, ages 13-24, to measure the mental health differences among nicotine-only vapers, THC-only vapers, dual vapers of both, and people who have never vaped.

The study focused on 1,921 people who had never vaped or were current vapers (vaping within the past 30 days). Of those, 562 participants said they never vaped, 370 had vaped only nicotine, 159 had vaped only THC, and 830 were dual vapers.

About 70% of the THC-only vapers and 60% of the nicotine-only vapers and dual vapers reported experiencing anxiety symptoms such as worries, flashbacks, panic attacks, and situational anxieties over the previous week. That compared to about 40% of those who never vaped.

More than half of nicotine-only vapers, THC-only vapers, and dual vapers reported depression, such as difficulty doing activities they normally enjoyed – whether it was work or school activity or in their social lives – within the past week. That compared to 25% of non-vapers.

More than 50% of people in all vaping groups reported having suicidal thoughts within the past year, compared to about one-third of the non-users.

Why teens, young adults vape

About a quarter of the dual vapers and nicotine-only vapers started vaping nicotine to calm down or feel less stressed.

About one-third of the participants in both groups reported they vaped nicotine to cope with anxiety.

In contrast, about half of THC-only vapers did so to relieve anxiety symptoms.

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nearly half currently vape TCH, to feel less depressed.

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Vaping and addiction

The study said dual vapers were significantly more likely than nicotine-only vapers to indicate addiction to nicotine.

Dual vapers of nicotine and THC were also significantly more likely to say they felt less depressed after they started vaping, whereas nicotine-only vapers were more likely to report that vaping had no impact on their feelings of depression. The researchers said that might be related to dual users' stronger addiction to these products, rather than any positive impacts from the products.

"Although we knew that THC was commonly vaped, we were surprised to have so many dual vapers — more than double the nicotine-only vapers," Hart said.

"Dual use may either compound the addictive nature of vaping or attract people who are more prone to addiction, as well as have an impact on symptoms of depression," she added.

The effects of nicotine and THC

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on the brain.

Much of the effect depends on the person and the dosage related to how it's being ingested.

"In many cases, THC is shown to help with reducing depression and anxiety, but this greatly depends on the individual circumstances," Spielberg said. "Vaping is just a way of consuming THC or nicotine, so whatever an individual is likely to experience from smoking, be it with cannabis or tobacco, is also likely to be experienced when vaping the related chemical, assuming the dosage is the same."

He added that it's possible people with depression are simply more likely to dual vape.

"I think actionable conclusions would depend on the study's ability to account for this," Spielberg said. "Increased substance misuse, with multiple substances, across the board trends with mental illness. Treatment for depression, especially when addiction comes into play, greatly depends on the individual's needs."

[Dr. Michael McGrath](#), the medical director of Ohana Luxury Alcohol Rehab in Hawaii, told Healthline that THC and nicotine do have important factors in common.

"THC (tetrahydrocannabinol) and nicotine have been both associated with anxiety and depression in studies," McGrath said. "They both cause activation of pleasure centers in the brain, but the effects are short-lived and eventually can deplete the pleasure center's ability to respond to normal pleasures."

"People who vaped both had higher rates of depression. Studies have suggested that inflammation might trigger depression among people who vaped," he added.

[Marta De la Cruz](#) is a clinical psychologist for Balance Luxury Rehab. She

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“Parents, teachers, and healthcare professionals must inform young people about the dangers of vaping and give them good coping skills for handling stress and anxiety,” De la Cruz said. “THC and nicotine are psychoactive drugs that change the chemistry of the brain and can impact one’s mood and degree of anxiety.”

“Nicotine is a stimulant that may heighten alertness and arousal but also cause agitation, impatience, and anxiety. THC, on the other hand, is a cannabinoid that can trigger anxiety, paranoia, and panic attacks, in addition to relaxation and bliss. Teenagers and young adults may use vaping as a coping mechanism, but doing so can deteriorate mental health and lead to addiction,” De la Cruz added.

The research on vaping

Spielberg said consumers often forget the “myriad” of other substances found in vapes, such as “heavy metals and harmful additives, which can present health issues beyond those associated with nicotine, alone.”

Spielberg said for years people underestimated vapes because they were originally marketed as healthier alternatives to traditional forms such as cigarettes.

“Vape smoke is less obtrusive, and the liquids were thought to have less harmful additives and by-products than tobacco leaves when smoked.,” Spielberg said.

“Research takes time, and we’re still learning about vaping. With companies changing their products, and governments trying to better regulate them, the environment around vapes is volatile and difficult to keep track of,” he added.

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HISTORY

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