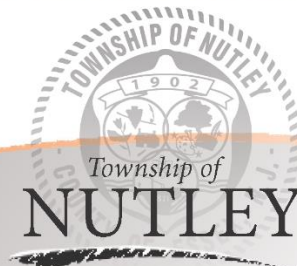


NEWSLETTER



HOPE Newsletter - Issue 73 Teenagers: Vaping and Juuling

Teen develops 'wet lung' after vaping for just 3 weeks

By Susan Scutti, CNN

Story highlights

- An 18-year-old experienced difficulty breathing and chest pains after using an e-cigarette
- Her doctors diagnosed hypersensitivity pneumonitis, or "wet lung"

(CNN)An 18-year-old woman working as a hostess in a rural Pennsylvania restaurant decided to try e-cigarettes, perhaps another of the innumerable bistro workers hoping to calm frayed nerves with a smoke -- or in this case, a vape.

This hostess, though, paid an unusual price for her e-cig use, according to a case study published Thursday in the medical journal *Pediatrics*. As usual for a patient report, the authors did not disclose the young woman's name to protect her privacy.

E-cigarettes heat liquid and turn it into vapor, which a user inhales and then exhales in a large puffy cloud. The liquid is known as e-juice, and it contains flavorings, propylene glycol, glycerin and often nicotine -- though many users are unaware of this final addictive ingredient.

The hostess had been vaping for only about three weeks last year when she developed symptoms bad enough to send her to the emergency room of the University of Pittsburgh Medical Center.

There, doctors recorded her issues: cough, difficulty breathing that was worsening by the minute, and sudden stabbing pains in the chest with every inhalation and exhalation. Not yet feverish, she showed no upper respiratory symptoms such as a

runny nose or nasal congestion. In the past, she said, the only lung problems she had were from mild asthma, which rarely required the use of an inhaler.

When her coughing became more frequent, the ER doctors admitted her to the pediatric intensive-care unit and started her on antibiotics. But her condition rapidly worsened.

Soon, the young woman experienced what is commonly known as respiratory failure, said Dr. Daniel Weiner, one of the patient's doctors, a co-author of the new report and a medical director at Children's Hospital of Pittsburgh at UPMC.

"She was unable to get enough oxygen into her blood from her lungs and required a mechanical ventilator (respirator) to breathe for her until her lungs recovered," Weiner said.

Not only did the hostess require a breathing machine, she needed tubes inserted on both sides of her chest to drain fluid from her lungs.

Her doctors diagnosed hypersensitivity pneumonitis, sometimes called wet lung, an inflammation of the lungs due to an allergic reaction to chemicals or dust.

Dr. Casey Sommerfeld, the patient's pediatrician and lead author of the study, said chemicals in the e-cigarettes led to lung damage and inflammation, which triggered the woman's body to mount an immune response.

"This immune response can lead to increased inflammation and 'leaky' blood vessels, which can lead to fluid accumulation in the lungs," said Sommerfeld, now a general pediatrician at Children's Healthcare of Atlanta.

'More case reports and side effects'

The woman was treated with an IV of methylprednisolone, a drug used to treat severe allergic reactions.

She improved swiftly and was weaned off the mechanical support system five days after being admitted to the hospital.

"It is difficult to speculate on how frequently this could happen; however, there are a few case reports involving adults that developed respiratory distress following electronic cigarette use," Sommerfeld said. "As electronic cigarette use increases, we will be seeing more case reports and side effects."

Ilona Jaspers, a professor in the Departments of Pediatrics and Microbiology and Immunology at the University of North Carolina at Chapel Hill, said the case study

suggests that e-cigarettes will cause negative health consequences that had not been seen with conventional cigarettes.

Jaspers, who was not involved in the study, added that even though it describes just one patient, it "highlights the importance of potential adverse health effects associated with e-cigarette use."

Additionally, the diagnosis of symptoms related to a number of serious lung conditions suggests that the negative health effects of e-cigarettes may "manifest in several different ways," she said.

Her research has shown that certain e-cigarette flavor chemicals significantly reduce the function of immune cells.

'Risky behavior'

Sommerfeld noted that, as vaping products contain nicotine, "vaping can cause side effects including dizziness, headaches, nausea, racing heart, anxiety and difficulty with sleep. Nicotine is known to be addictive, and children can become hooked on electronic cigarettes."

Jaspers said that, "in addition to nicotine addiction, which by itself will have effects on the adolescent brain, we just do not know yet what the long term health effects of exposure to e-cigarettes may be. We also do not know whether potential health effects caused by using e-cigarettes are more pronounced" in teens.

The rapid spread of vaping was highlighted by a 2016 report from the US surgeon general that cited a 900% increase in e-cigarette use by high school students from 2011 to 2015. Meanwhile, the 2016 National Youth Tobacco Survey noted that 1.7 million high school students said they had used e-cigarettes in the previous 30 days.

"I hope we can find a way to quickly reverse this trend," Jaspers said.

Sommerfeld agreed. Using e-cigarettes "normalizes" smoking, she said, and is linked to an "increased likelihood of using typical cigarettes or tobacco products." For this reason, vaping and electronic cigarette use should be included in discussions of "risky behavior" with teens, she said.

"As a pediatrician, I am always a child advocate and seeking to speak out on the best interest of children."

Teens Are 'Juuling' At School. Here's What That Means

By Jamie Ducharme

Updated: March 27, 2018 3:51 PM ET

TIME Health

The most popular product in the booming e-cigarette market doesn't look like a cigarette at all.

The Juul, a trendy vape that resembles a flash drive and can be charged in a laptop's USB port, accounted for 33% of the e-cigarette market as of late 2017, according to Wells Fargo data. The product is made for and legally available only to adults 18 and older, and its "growth appears to be due to growth with the 18 to 24 year old age group," according to a Wells Fargo report.

But in many cases, media reports suggest, these devices are being used by kids and teenagers even younger than that — which has some parents, educators and medical professionals concerned. Each Juul cartridge—which lasts about 200 puffs—has as much nicotine as an entire pack of cigarettes. Here's what to know about "Juuling," the trend sweeping schools nationwide.

What do parents need to know about Juuling?

Although Juul products, like most e-cigarettes, are made and marketed as smoking alternatives, the device is increasingly popping up on high school and college campuses. The term "Juuling" usually refers to this recreational use.

Because of their sleek design and resemblance to USB drives, Juul products are easy for students to conceal and use in school — sometimes even in the middle of class. (Juuls also produce less smoke than many similar devices, making them even more discreet.) The problem has grown widespread enough that school districts in states including Kentucky, Wisconsin, California and Massachusetts have voiced their concerns and, in some cases, begun amending school policy to address the issue. Some college publications, including those at New York University and the University of Illinois, have also reported on the trend.

Ashley Gould, chief administrative officer at Juul Labs, says that the product was created by two former smokers specifically and solely to help adult smokers quit, and that the company has numerous anti-youth-use initiatives in place because "we really don't want kids using our product." Gould also notes that Juul uses age authentication systems to sell only to adults 21 and older online, though most of its sales take place in retail stores, where state laws may allow anyone 18 and older to purchase the devices.

The design, she adds, was not meant to make the device easier to hide.

“It was absolutely not made to look like a USB port. It was absolutely not made to look discreet, for kids to hide them in school,” Gould says. “It was made to not look like a cigarette, because when smokers stop they don’t want to be reminded of cigarettes.”

Are e-cigs safe?

While e-cigarettes contain fewer toxic substances than traditional cigarettes, the CDC warns that vaping may still expose people to cancer-causing chemicals. (Different brands use different formulations, and the CDC’s warning did not mention Juul specifically.)

It’s not clear exactly how e-cigarettes affect health because there’s little long-term data on the topic, says Dr. Michael Ong, an associate professor of general internal medicine and health services at the David Geffen School of Medicine at the University of California Los Angeles. “We just don’t have a lot of information as to what the harms potentially are going to be,” he says. “There likely would be health risks associated with it, though they’re not going to be the same as a traditional cigarette.”

Doctors do know, however, that each Juul pod contains nicotine equivalent to a pack of cigarettes. That’s troubling, because nicotine is “one of the most addicting substances that we know of,” Ong says. “Having access to that is certainly problematic,” Ong adds, because it may get kids hooked, which could potentially lead them to later take up cigarettes.

Juul’s products come in flavors including mango, fruit medley and creme brûlée — and the chemicals used to flavor vaping liquid may also be dangerous, Ong adds. “Even if the manufacturer doesn’t intend it to be something that’s kid-friendly, it’s kid-friendly,” he says. A 2016 study suggested that these flavoring agents may also cause popcorn lung, a respiratory condition first seen in people working in factories that make microwave popcorn.

Does Juuling help you quit smoking?

It’s not yet clear. Gould acknowledges that Juul doesn’t have great end-user data since its products are mostly sold in retail stores, but she says the company is actively researching the effectiveness of its devices.

Research about the efficacy of nicotine replacement therapy using tools such as e-cigarettes and nicotine gum is relatively inconclusive. A new study published in the *Annals of Internal Medicine* even found that smokers trying to quit may actually have less success if they use e-cigarettes.

“The literature has suggested that when you have nicotine replacement therapies, they work best if [people are] being advised by a professional,” Ong says. “When we provide things over the counter, we don’t see the benefits of cessation that we would have

expected by making it widely available, and that's probably the reason why: because people aren't actually getting professional help.”

Correction: The original version of this story misstated the legal purchasing age for Juul. It is 18 in some states, not 21. The original version of this story also misstated Juul's marketing strategy. The product is marketed as a smoking alternative, not a smoking cessation tool.

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1 Kennedy Drive - Nutley, New Jersey 07110 - (973) 284-4951

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