



Virulent vaping

The rapid rise in teens taking to vaping is leading to serious health issues. Considering that these poisonous pipes are easily accessible, how can we help kids to resist peer pressure, conquer cravings and escape vaping?

Words CAROLINE ROBERTSON

Adolescents are naturally curious to try the latest craze. Minecraft, popping candy, slime ... parents witness a world of fading fads. Often adolescent exploits are a passing exploration driven by peer pressure and promotions. However, the rising popularity of vapes has parents and teachers seriously concerned. The issue is so serious that some schools are warning that any student caught selling, using or possessing a vape could be suspended. Many students have been suspended in Australia, such as the Waverley College student who ran a vape pen network selling to students, Queensland kids caught smuggling asthma puffer-style vapes to school and five students sprung vaping at a Canberra Catholic school. The problem is so pervasive that many schools including Knox Grammar have installed vape detectors in their bathrooms.

America's silent vaping epidemic has over 3.6 million kids vaping, says the Surgeon General, and its incidence has risen from 1.5 per cent to 21 per cent in

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high school students over seven years according to the US Centers for Disease Control and Prevention. According to the Australian Secondary School Students' Alcohol and Drug Survey, 13 per cent of 12- to 17-year-old students have vaped at least once and of these 32 per cent used it in the past month. AMA's South Australian president Michelle Atchison told ABC Radio Adelaide, "There's been an about 1000 per cent increase in the use of disposable vaping products amongst high school e-cigarette users in 2020."

Health repercussions of vaping can be fatal, with teens falling victim to vape-related disorders such as e-cigarette or vaping product use-associated lung injury (EVALI). For those who are unaware of this relatively new menace, it's imperative to know what vapes are, their hazards and how to steer kids clear of them.

Stigs

Vaping ignited in 2003 when Chinese inventor Hon Lik invented the original e-cigarette. Ironically, he devised the e-cigarette to evade the lung cancer that killed his father, yet Hon came to smoke both cigarettes and vapes. Today the e-cigarette manufacturing industry is poorly regulated, with an estimated 90 per cent of all e-cigarettes produced in China too cheaply to ensure safe standards or to comply with quality control standards of other countries. They're so dodgy that devices have been known to explode, with uncertified exploding e-cigarette lithium-ion batteries often to blame. Unfortunately, so-called "nicotine-free" vapes aren't reliable; a NSW Health study found that 70 per cent of e-cigarettes contained high levels of nicotine despite its omission from the label list. Vapes also contain carcinogenic chemicals and flavours according to the US Food and Drug Administration, and a 2021 study of 65 vape ingredients by Curtin University respiratory physiologist Alexander Lacombe.

The difference between e-cigarettes and vapes is negligible, as they share the same function in varying forms. They are both electronic battery-powered devices that heat a cartridge containing various ingredients which convert to an inhalable aerosol vapour. E-cigarettes tend to look more like cigarettes or cigars, whereas vapes come in a myriad of forms. They can contain nicotine or be nicotine-free.

Colloquial terms for vapes are "stigs" or "shisha pens". The Urban Thesaurus states slang words for vaping are "vooping", "cloud chasing" and "skitzin"; however, according to my 14-year-old daughter, these terms are more American than Australian.

Though nicotine e-cigarettes are only available to adults with a prescription and vapes are illegal for under-18s in Australia, they are clearly marketed to the youth demographic. Popular vapes for teens include vape juice, Cuvies and Puff Bars. As evidence, Tik Tok's top 10 videos with Puff Bars received up to 42.4 million views in September 2020. Colourful vapes are available in the kind of flavours that make kids drool — banana split, bubblegum, cotton candy (fairy floss), chocolate, Froot Loops, gummy bears, KitKat, lemonade and orange twist. They are also easy to disguise as camouflaged JUUL flash drives, pens, lip gloss watches and medical devices are standard. Queensland's *Courier Mail* reported in October 2021 that kids were smuggling vapes into school that looked like asthma puffers. Vapes are also easily concealed in pencil cases, clothing, headbands and jewellery. Being smoke-free, indulging in vapes is easy in discreet places like bedrooms or bathrooms. Despite their

ban for kids it's simple to purchase them through online stores and social media. A Sydney school revealed that students were easily accessing vapes under the counter at convenience stores and tobacconists despite heavy penalties involved.

Breathless

You don't have to be a doctor to suspect that inhaling chemicals is bad for you — especially chemicals that are not approved for inhalation by the US Food and Drug Administration (FDA) or the Therapeutic Goods Administration (TGA) in Australia. Apart from their chemical cocktail, vapes are also a gateway activity to tobacco smoking, as a study in *Pediatrics* suggested that vaping teens are six times more likely to smoke cigarettes later in life. Though kids often think vaping is a harmless hobby, some experts say it's worse than cigarettes, with many vapes containing hidden tobacco sometimes double the level of cigarettes. A 2018 Truth Initiative study showed that 66 per cent of JUUL users from 15 to 22 years old were unaware that they contained nicotine. Vapes are also unfiltered as WHO's Dr Florante Trinidad says, "While regular cigarettes have a filter, [with] this delivery device the electronic cigarette, the nicotine goes directly to the lungs."

The injurious ingredients in vapes can include benzaldehyde, inflammatory diacetyl, diethylene glycol, formaldehyde, propylene glycol, cadmium, chromium, nickel, lead, tin, microplastics, TGA-banned trans-cinnamaldehyde, pesticides, carcinogenic pulegone, cleaning agents, 2-chlorophenol and nicotine.

Medical research is still discovering the long-term effects of vaping. Evidence suggests the use of e-cigarettes can increase the incidence of airway injury, asthma, bronchitis, cough, high blood pressure, impaired immunity and lung cancer. Johns Hopkins University lung cancer surgeon Stephen Broderick states on the Johns Hopkins website, "We do know that smoking tobacco forces tiny particles to be deposited deep in the bronchial tree and can lead to the development of cancer. The same may be true for vaping."

Nicotine is highly addictive and increases the likelihood of lung cancer, impaired cognition, anxiety, ADHD, foetal

abnormalities, stillbirths and preterm delivery. Vape users are also twice as likely to suffer depression according to the American Brain Society.

Seizures and neurological symptoms may be connected to vaping according to the FDA, who are investigating 127 vape-related reports until 2019. Vapers who are 13 to 24 years old have a 500 per cent increased incidence of COVID-19 according to a 2020 study. Vapes can also be used to get high when they contain THC from cannabis.

Second-hand smoke also produces particles and air droplets that increase the risk of asthma and heart disease, plus polycyclic aromatic hydrocarbons (PAHs), all of which have been linked to lung, bladder and gastrointestinal cancers.

Child check

Chatting to a child about vaping is tricky. You don't want to scare them off the topic but it's essential to convey the pitfalls of vaping. Try to bring it up in a natural way with facts rather than exaggerated explanations. Turn down the lecturing tone to keep it an open dialogue exploring the issues. Ideally, you've already established a relationship that engenders trust and mutual respect so the child feels safe to share.

Ask if they know what vaping is, if they've ever seen someone do it and how they feel about it. Tie it into a general chat about substance abuse including smoking. Explore the legal, health and financial ramifications. Also mention that passive smoking or vaping can adversely affect health. Another way of communicating is to watch a video or movie and discuss it afterwards. Alternatively, enlist a healthcare provider, friend, counsellor or teacher to explain the issue. Many schools also offer presentations on vaping. It's best to set an example by not vaping or smoking. Kids tend to do as we do, not as we say.

Telltale signs of vaping

Since teens are often secretive and scared of punishment, they're unlikely to admit that they've tried vaping. Before you go on a snooping spy mission, watch out for these possible vaping signs.

- Breathlessness on exertion
- Chest infections
- Chest pain
- Chewing gum often
- Coughing
- Disturbed sleep
- Dry mouth, throat and nose
- Hiding their bag
- Locking their room
- Items such as pods for the e-liquid, atomisers, coils, lithium-ion batteries and chargers

- Mood swings
- Mouth sores
- Shortness of breath
- Unusual sweet or fruity fragrances
- Poor concentration
- Raspy voice
- Secretive behaviour
- Seizures
- Throat clearing
- Weight loss
- Red eyes

Advanced symptoms occur when oil or white blood cells accumulate in the lungs. Any of these signs call for immediate medical care: breathing difficulties, coughing, diarrhoea, nausea and vomiting.

Quit tips

When there's a why, the how becomes easier. Ask the vaper to write down why they vape and why they're quitting. Address underlying drives for vaping such as peer pressure, anxiety, depression and stress. Explore healthy alternatives to overcome these issues.

Select a quitting date as soon as possible before motivation wanes. For leverage suggest they tell everyone they are quitting. Identify triggers and avoid them such as vaping paraphernalia and other vapers. Seek professional help and instigate the following tips to manage cravings.

- Change the environment and activity
- Switch up the normal routine
- Exercise
- Pause and breathe slowly in and out the nose
- Communicate with a support person
- Engage in a hobby
- Play a game
- Prioritise healthy eating
- Get sufficient sleep
- Manage stress with meditation, mindfulness, breathing and affirmations
- Set up a reward for milestones along the way
- Find a substitute tool to fiddle with such as an empty biro, toothpick or water bottle
- If there is nicotine addiction then consider nicotine replacement therapies such as patches, gum, lozenges or sprays
- Surround yourself with positive people and phrases such as Nasio Davos' words, "You are greater than your addiction"
- Create a quit plan through smokefree.gov/vaping-quit-plan

Respiratory repair

Damage done by vaping can potentially be healed if caught early enough. The focus needs to be on restoring areas affected by vaping which can include the adrenals, brain, nervous system and respiratory

Vaping dangers

Sydney student Dakota Stephenson got a painful lesson about vaping dangers. After vaping three times a week for seven months to soothe her anxiety, Stephenson suffered vomiting, a rapid heartbeat and a high temperature. She was rushed to hospital and diagnosed with the lung disease EVALI. While in intensive care she narrowly survived as her lungs filled with fluid. Stephenson was one of the lucky casualties of vaping. Up until February 18, 2020, 2807 EVALI cases have been reported to the US's CDC with 68 resulting in deaths. Though vitamin E acetate is strongly linked to EVALI, other chemicals are likely contributors.

system. General cellular repair with antioxidants is also vital to reverse free radical damage. Consider these remedial measures for vaping recovery.

- Antioxidants, vitamins A, C and E, zinc, astaxanthin, resveratrol and turmeric are all useful for lung repair.
- Lung tonics tailored to the individual may include elecampane, holy basil, ginger, ivy, liquorice, mullein, pelargonium, red sage and thyme.
- Nerve herbs such as catnip, green tea, holy basil, lemon balm, oat seed, oatstraw, passionflower and St John's wort can assist recovery.
- Steam inhalation with essential oils such as eucalyptus, clove and tea tree oil can cleanse the respiratory tract. If there is mucous accumulation, percussion on the back can help to expel it.
- Saunas, whether they be infrared, dry or wet, can cleanse the lymphatics and lungs. Research suggests saunas can reduce and prevent respiratory problems such as asthma and congestion.
- Breathing techniques such as pranayama or Buteyko breathing technique (BBT) can increase energy and balance breathing patterns.
- Meditation has been successfully used to help smokers quit in multiple studies. A study published in the *Proceedings of the National Academy of Sciences of the United States of America* showed that two weeks of meditation training significantly reduced smoking.
- Therapies such as hypnotherapy and NLP can assist to uproot the core subconscious calls to vape.

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