



Department of **Education**

Department of **Health**

HEALTH RELATED FREQUENTLY ASKED QUESTIONS

WHAT DO VAPES LOOK AND SMELL LIKE?

Vapes come in many shapes and sizes and can be made to look like everyday items including highlighters, pens, or USB memory sticks.

The vape aerosol inhaled and exhaled by the user does not usually have a strong odour but they may have a sweet smell depending on the flavour.

WHAT IS IN A VAPE?

Vape aerosol is not water vapour. The main ingredient in vapes is propylene glycol, vegetable glycerine or glycerol.

Vapes and e-liquids can contain a range of chemicals such as acetone found in nail polish remover, acrolein found in weed killer and 2-chlorophenol found in cleaning products and bug spray.

Vapes come in a number of flavours such as blueberry or bubble gum that make them appealing to young people.

Many vapes also contain nicotine, the same highly addictive substance found in tobacco cigarettes.

Testing vapes has shown that those labelled 'nicotine-free' can still contain high nicotine levels. People can think they are using nicotine-free vapes and can unknowingly quickly develop a nicotine addiction.

While some chemicals in vapes are also used in food production and are generally considered safe when eaten, this does not mean they are safe when they are inhaled directly into the lungs.¹

DO VAPES LIST ALL THE INGREDIENTS THEY CONTAIN ON THE PACK?

Vapes are often labelled incorrectly and can contain nicotine, even when they claim not to. The ingredients listed on vape packaging are commonly inaccurate and/or incomplete.

Although vape packaging might list some ingredients, it may not include all chemicals in the aerosol. Researchers have found that many of the substances identified in vapes were contaminants from either the e-liquid, the device itself, or emissions following heating of the e-liquid.^{2,3}

Below are some of the chemicals that have been found in vapes. These chemicals are not listed on the pack:

- 2-chlorophenol used in disinfectant/cleaning products and insecticide^{3,4}
- Acetone used in nail polish remover^{3,5,6}
- Pulegone used in insecticide^{3,6,7}
- Acrolein used in herbicides^{3,8}

Australian research has examined vapes to determine their content^{4,9}. Researchers have found a range of chemicals – many of them harmful.

ABC News published a story about the 'suite of chemicals' in the liquids used in vapes, some at 'dangerously high' levels.¹⁰

2021 Australian research⁴ analysed 65 samples of Australian e-liquids labelled as 'non-nicotine'. Every sample contained at least one potentially harmful chemical and all samples were mislabelled, highlighting concerns that consumers are misinformed. Six of the samples contained nicotine, despite being marketed as nicotine-free. They found most of the substances found in vapes are not identified on the pack, raising concerns about what people are inhaling.

For more information visit [Tobacco in Australia: Safety and health risks of e-cigarettes](#).

HOW BIG IS THE PROBLEM?

As you may be aware, the uptake of vaping by young people is increasing. Research shows that in WA, 1 in 3 (32.2%) school students aged 12 to 17 years have tried an e-cigarette. Of those who had tried, almost 1 in 5 (18.4%) had vaped in the past month. Young people who vape are 3 times as likely to take up smoking cigarettes.²¹

WHAT ARE THE SHORT-TERM RISKS OF YOUNG PEOPLE WHO VAPE?

Short-term health effects of vaping include nausea, vomiting, mouth and airway irritation, chest pain and palpitations.¹²

Vaping can increase the odds of being diagnosed with asthma.¹³

Nicotine vapes can weaken the immune system.¹⁴

Regular nicotine use can also worsen stress and anxiety and can make you more susceptible to depressive symptoms.¹⁴ Conversely, quitting nicotine can lead to reduced stress, anxiety and depression.¹⁵

WHAT IS NICOTINE POISONING?

Too much nicotine from vapes can cause nicotine poisoning. Symptoms can vary, but can include sweating, racing heart rate and increased blood pressure, shaking and vomiting.

If you think someone has been poisoned by liquid nicotine, please call the WA Poisons Information Centre on **13 11 26** immediately or **000** if it is an emergency. For more information see the WA Poisons Information Centre.

WHAT ARE THE LONG-TERM HEALTH RISKS FOR YOUNG PEOPLE WHO VAPE?

Vapes can contain cancer-causing agents, toxins, heavy metals, and very fine particles that can cause adverse health effects, including links to lung disease¹

Vapes can contain high levels of nicotine. Adolescence is a critical period for brain development and exposure to nicotine can have long-term health consequences, impacting memory, attention and learning.¹⁶

Vapes that do not contain nicotine can still contain many harmful chemicals that cause negative health effects. Importantly, many of the long-term harms of vaping are still unknown.¹⁸

DO PEOPLE WHO USE VAPES GO ON TO USE TOBACCO CIGARETTES?

Most adults who smoke cigarettes became addicted to nicotine as teenagers.¹⁸

Nicotine is highly addictive and research suggests that young people can become more easily addicted to nicotine than adults.¹⁹

Research indicates that young people who vape may be three times as likely to go on to use regular cigarettes.^{20,17}

WHAT CAN YOU DO AS A PARENT OR CARER?

There are ways you can help protect your children from vaping:

- Whether you suspect your child is vaping or not, take the time to talk to them about it and help them understand all of the risks. It is never too late to have the conversation.
- Learn about the different types of vapes available and the risks associated with using these products.
- Try to start the conversation with your child in a relaxed easy-going way, perhaps taking the cue from around you, such as a note from school, a news story about vaping, or seeing people vaping on the street.
- If your child is vaping, encourage them to stop and let them know that help is available and you are there for them. Stopping vaping can sometimes be hard and your child may need advice from a doctor (or GP).
- Call the Quitline (13 7848) for confidential advice and information. Quitline counsellors can answer any questions you may have about vaping and help you think of ways to approach conversations with your child.
- Set a good example by being tobacco or vape free.
- Help your child prepare for pressure to vape and how to respond. Vaping may seem popular, but in fact, most young people do not vape.
- If you suspect someone is selling vapes or e-cigarettes and their components, you can report it to the Department of Health by emailing TobaccoPolicy@health.wa.gov.au

REFERENCES

1. Australian Government NH&MRC. NHMRC CEO Statement: Electronic Cigarettes (E-Cigarettes). Australian Government; 2017.
2. Zhao D, Aravindakshan A, Hilpert M, Olmedo P, Rule AM, Navas-Acien A, et al. Metal/ Metalloid Levels in Electronic Cigarette Liquids, Aerosols, and Human Biosamples: A Systematic Review. *Environmental health perspectives*. 2020;128(3):36001.
3. Department of Health National Industrial Chemicals Notification and Assessment Scheme. Non-nicotine liquids for e-cigarette devices in Australia: chemistry and health concerns. 2019.
4. Larcombe A, Allard S, Pringle P, Mead-Hunter R, Anderson N, Mullins B. Chemical analysis of fresh and aged Australian e-cigarette liquids. *Medical journal of Australia*. 2021.
5. Grondin CJ, Davis AP, Wieggers JA, Wieggers TC, Sciaky D, Johnson RJ, et al. Predicting molecular mechanisms, pathways, and health outcomes induced by Juul e-cigarette aerosol chemicals using the Comparative Toxicogenomics Database. *Current Research in Toxicology*. 2021;2:272-81.
6. Sleiman M, Logue JM, Montesinos VN, Russell ML, Litter MI, Gundel LA, et al. Emissions from Electronic Cigarettes: Key Parameters Affecting the Release of Harmful Chemicals. *Environmental science & technology*. 2016;50(17):9644-51.
7. Omaiye EE, Luo W, McWhirter KJ, Pankow JF, Talbot P. Flavour chemicals, synthetic coolants and pulegone in popular mint-flavoured and menthol-flavoured e-cigarettes. *Tobacco control*. 2021;tobaccocontrol-2021-056582.
8. Kuntic M, Oelze M, Steven S, Kröller-Schön S, Stamm P, Kalinovic S, et al. Short-term e-cigarette vapour exposure causes vascular oxidative stress and dysfunction: evidence for a close connection to brain damage and a key role of the phagocytic NADPH oxidase (NOX-2). *European heart journal*. 2020;41(26):2472-83.
9. Chivers E, Janka M, Franklin P, Mullins B, Larcombe A. Nicotine and other potentially harmful compounds in “nicotine-free” e-cigarette liquids in Australia. *Medical journal of Australia*. 2019;210(3):127-8.
10. Alison Branley. New Australian vaping research finds ‘suite of chemicals’ in liquids used in vapes, some at ‘dangerously high’ levels. ABC News. 11 October 2021.
11. Centre for Epidemiology and Evidence. NSW Population Health Survey (SAPHaRI). St Leonards: NSW Ministry of Health.; 2019.
12. Gotts JE, Jordt S-E, McConnell R, Tarran R. What are the respiratory effects of e-cigarettes? *BMJ*. 2019;366:l5275-l.
13. Byrne S BE, Williams G, Anastasiou KM, Tonkin A, Battams S and Riley MD,. E-cigarettes, smoking and health. A Literature Review Update. Australia: CSIRO; 2018.
14. Christensen D. 6.9 Predictors of nicotine dependence. 2018. In: *Tobacco in Australia: Facts and issues* [Internet]. Melbourne: Cancer Council Victoria.
15. Greenhalgh E, & Scollo, MM;. InDepth 18B: Electronic cigarettes (e-cigarettes). In Scollo, MM and Winstanley, MH (editors) *Tobacco in Australia: Facts and issues*. Melbourne: Cancer Council Victoria; 2021.
16. Gotts JE, Jordt S-E, McConnell R, Tarran R. What are the respiratory effects of e-cigarettes? *BMJ*. 2019;366:l5275-l.
17. Byrne S BE, Williams G, Anastasiou KM, Tonkin A, Battams S and Riley MD,. E-cigarettes, smoking and health. A Literature Review Update. Australia: CSIRO; 2018.
18. Christensen D. 6.9 Predictors of nicotine dependence. 2018. In: *Tobacco in Australia: Facts and issues* [Internet]. Melbourne: Cancer Council Victoria.
19. Greenhalgh E, & Scollo, MM;. InDepth 18B: Electronic cigarettes (e-cigarettes). In Scollo, MM and Winstanley, MH (editors) *Tobacco in Australia: Facts and issues*. Melbourne: Cancer Council Victoria; 2021.
20. Baenziger O, Ford L, Yazidjoglou A, Joshy G, Banks E. E-cigarette use and combustible tobacco cigarette smoking uptake amongst non-smokers, including relapse in former smokers: umbrella review, systematic review and meta-analysis. *BMJ Open* 2021;11:e045603
21. Chronic Disease Prevention Directorate. Australian Secondary Students’ Alcohol and Drug Survey 2022/23: Western Australian results – Tobacco and e-cigarette use. Perth: Department of Health, Western Australia; 2024. Australian Secondary Students’ Alcohol and Drug Survey 2022/23 (health.wa.gov.au)