

# VAPING EVIDENCE SUMMARY

This table describes the evidence for the statements in the ‘Do you know what you’re vaping?’ campaign and the *Anti-vaping toolkit*.

As more evidence comes available, this table will be revised. Further evidence is available on the [Tobacco in Australia](#) website.

KEY MESSAGE	FACTS	REFERENCE	NOTES
<b>Chemicals in vapes</b>			
<b>Acetone (found in Nail polish remover)</b>	Acetone reported in reaction products in e-cigarette emissions (highest reported amount 1.4mg/mL liquid).	Australian Government, National Industrial Chemicals Notification and Assessment Scheme (NICNAS), <a href="#">Non-nicotine liquids for e-cigarette devices in Australia: chemistry and health concerns report</a> , Department of Health, 2019.	Table 7 p.28. Australia
<b>Acetone (found in nail polish remover)</b>	Acetone was found in ACCC 2016 sample testing of emissions of e-liquids.	<a href="#">Australian Government, NICNAS, 2019.</a>	p.36
<b>Acetone (found in nail polish remover)</b>	Acetone is identified in scientific literature as being of concern to human health due to the carbonyl reaction products in e-cigarette emissions.	<a href="#">Australian Government, NICNAS, 2019.</a>	p.49
<b>Acetone (found in nail polish remover)</b>	Acetone was detected in 13 brands of Japanese e-cigarettes.	<a href="#">National Academy of Sciences 2018</a> cites Uchiyama S, Ohta K, Inaba Y, Kunugita N. Determination of carbonyl compounds generated from the e-cigarette using coupled silica cartridges impregnated with hydroquinone and 2,4-dinitrophenylhydrazine, followed by high-performance liquid chromatography. <i>Analytical Sciences</i> . 2013;29(12):1219–1222.	
<b>Hydroxyacetone (consists of a primary alcohol substituent on acetone)</b>	Hydroxyacetone was identified as a chemical ingredient in e-cigarette liquids.	<a href="#">Australian Government, NICNAS, 2019</a> cites Sleiman, M, Logue, JM, Montesinos, VN, Russell, ML, Litter, MI, Gundel, LA & Destailats, H 2016, ‘Emissions from Electronic Cigarettes: Key Parameters Affecting the Release of Harmful Chemicals’, <i>Environ Sci Technol</i> , vol. 50, no. 17, pp. 9644-51.	Appendix Table A2 p.66
<b>Acetone (found in nail polish remover)</b>	Acetone is identified as a chemical contaminant in e-cigarette liquids.	<a href="#">Australian Government, NICNAS, 2019</a> cites Sleiman et al. 2016.	Table 9 p.32, Appendix Table A3 p.74
<b>Acetone (found in nail polish remover)</b>	Acetone is a chemical reaction product in e-cigarette emissions during e-cigarette use	Farsalinos, Voudris, and Poulas 2015; Geiss et al. 2015; Jensen, Strongin, and Peyton 2017; Kosmider et al. 2014; Lee et al. 2017; Margham et al. 2016; Ogunwale et al. 2017; Garcia-Gomez et al. 2016; Uchiyama et al. 2016 cited by <a href="#">Australian Government, NICNAS, 2019.</a>	Appendix Table A5 p.86.

KEY MESSAGE	FACTS	REFERENCE	NOTES
<b>Acetone (found in nail polish remover)</b>	Acetone found in JUUL e-cigarette emissions. Acetone is one of the chemicals associated with some of the same diseases as nicotine, formaldehyde and particulate matter, but also show direct relationships with 39 unique diseases including diabetes mellitus type 1 and amyotrophic lateral sclerosis.	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. <i>Current Research in Toxicology</i> . 2021;2:272-81	p.276-278.
<b>Acrolein (found in herbicide)</b>	Acrolein reported in reaction products in e-cigarette emissions (highest reported amount 10mg/ml liquid).	<u>Australian Government, NICNAS, 2019.</u>	Table 7 p.28
<b>Acrolein (found in herbicide)</b>	Acrolein identified as a contaminant chemical in e-liquids.	<u>Australian Government, NICNAS, 2019.</u>	Table 9 p32
<b>Acrolein (found in herbicide)</b>	Acrolein reported in the scientific literature at levels above cut-offs specified in the schedule (and relevant to e-cigarette liquids) (CAS number 107-02-8).	<u>Australian Government, NICNAS, 2019.</u>	p.35
<b>Acrolein (found in herbicide)</b>	The National Academy of Sciences conducted a comprehensive scientific review to inform understanding of the public health impact of nicotine containing e-cigarette devices (National Academies of Sciences 2018). "There is substantial evidence that some chemicals present in e-cigarette aerosols (e.g. formaldehyde, acrolein) are capable of causing DNA damage and mutagenesis. This supports the biological plausibility that long-term exposure to e-cigarette aerosols could increase risk of cancer and adverse reproductive outcomes. Whether or not the levels of exposure are high enough to contribute to human carcinogenesis remains to be determined."	National Academies of Sciences, E, and Medicine 2018, Public Health Consequences of E-Cigarettes, ed. Kathleen Stratton, Leslie Y. Kwan and David L. Eaton, The National Academies Press, Washington, DC, p. 774. Cited by <u>Australian Government, NICNAS, 2019.</u>	p.44
<b>Acrolein (found in herbicide)</b>	Acrolein is associated with irreversible lung damage, and irritation.	Allen et al. 2016; Clapp and Jaspers 2017 cited by <u>Australian Government, NICNAS, 2019.</u>	
<b>Acrolein (found in herbicide)</b>	Research confirms the presence of diacetyl and other flavouring chemicals in flavoured e-cigarettes, of concern due to the association between diacetyl and bronchiolitis obliterans and other severe respiratory diseases among workers inhaling heated vapours containing diacetyl.	Allen, JG, Flanigan, SS, LeBlanc, M, Vallarino, J, MacNaughton, P, Stewart, JH & Christiani, DC 2016, 'Flavoring Chemicals in E-Cigarettes: Diacetyl, 2,3-Pentanedione, and Acetoin in a sample of 51 Products, Including Fruit-, Candy-, and Cocktail-Flavored E-Cigarettes', <i>Environ Health Perspect</i> , vol. 124, no. 6, pp. 733-9.	
<b>Acrolein (found in herbicide)</b>	Common flavouring agents, which are often present at high concentrations in e-liquids and e-cig aerosols, are chemically similar to known airway irritants and sensitizers, and have been reported to cause occupational asthma. Moreover, e-cig exposures of some of these chemicals may exceed workplace exposure standards. & There is no data on the potential long-term effects of e-cig use and incidence or exacerbation of asthma.	Clapp, PW & Jaspers, I 2017, 'Electronic Cigarettes: Their Constituents and Potential Links to Asthma', <i>Curr Allergy Asthma Rep</i> , vol. 17, no. 11, p. 79.	
<b>Acrolein (found in herbicide)</b>	Acrolein is a carbonyl reaction product found in e-cigarette emissions identified in the scientific literature as being of concern to human health.	<u>Australian Government, NICNAS, 2019.</u>	p.49
<b>Acrolein (found in herbicide)</b>	Acrolein a chemical contaminant in e-liquids.	Fagan et al. 2017; Sleiman et al. 2016 cited by <u>Australian Government, NICNAS, 2019</u>	p.74

<b>KEY MESSAGE</b>	<b>FACTS</b>	<b>REFERENCE</b>	<b>NOTES</b>
<b>Acrolein (found in found in herbicide)</b>	Acrolein listed as a chemical ingredient in e-cigarette emissions.	Beauval et al. 2017; Farsalinos et al. 2018; Farsalinos and Voudris 2018; Farsalinos, Voudris, and Poulas 2015; Flora et al. 2017; Geiss et al. 2015; Hutzler et al. 2014; Jensen, Strongin, and Peyton 2017; Khlystov and Samburova 2016; Laugesen 2015; Margham et al. 2016; Ogunwale et al. 2017; Sala et al. 2017; Sleiman et al. 2016; Uchiyama et al. 2013; Uchiyama et al. 2016; Wang et al. 2017 cited by <a href="#">Australian Government, NICNAS, 2019</a> .	Appendix Table A5 p. 86
<b>Acrolein (found in found in herbicide)</b>	There is concern regarding the production of toxic aldehydes including acrolein, formaldehyde, and acetaldehyde during the heating of the e-liquid, but the clinical importance of this is not yet known.	Daniel Overbeek, Alexandra Kass, Laura Chiel, Edward Boyer, Alicia Casey 'A review of toxic effect of electronic cigarettes vaping in adolescents and young adults' <i>Critical Reviews in Toxicology</i> 50:6 531-538.	p.533
<b>2-chlorophenol (found in disinfectant/ cleaning products/ insecticide)</b>	Identified 2-chlorophenol as a contaminant in testing of 10 e-liquids (maximum concentration 0.47%).	<a href="#">Australian Government, NICNAS, 2019</a> .	Table 12 p. 38
<b>2-chlorophenol (found in disinfectant/ cleaning products/ insecticide)</b>	2-chlorophenol was identified in all 10 e-liquids tested.	Chivers E, Janka M, Franklin P, Mullins B, Larcombe A. Nicotine and other potentially harmful compounds in "nicotine-free" e-cigarette liquids in Australia. <i>Medical journal of Australia</i> . 2019;210(3):127-8.	Table p. 127
<b>2-chlorophenol (found in disinfectant/ cleaning products/ insecticide)</b>	Found 2-chlorophenol in 27 fresh and 30 aged samples, at concentrations of up to 206 mg/L. Similar chemicals have been identified as pesticide or herbicide residues or decomposition by-products in canola oil, from which glycerol is derived. While not as ubiquitous as in our earlier study, this acutely toxic chemical, used in disinfectants and insecticides, remains a problem for the e-liquid manufacturing process.	Alexander Larcombe, Sebastien Allard*, Paul Pringle, Ryan Mead-Hunter, Natalie Anderson, Benjamin Mullins/ Chemical analysis of fresh and aged Australian e-cigarette liquids. <i>Med J Aust</i> 2022; 216 (1): 27-32	Box 2 and p. 31
<b>2-chlorophenol (found in disinfectant/ cleaning products/ insecticide)</b>	Of the other chemicals detected, 2-chlorophenol, classified as acutely toxic by the Globally Harmonized System of Classification and Labelling of Chemicals, was identified in all e-liquids. Probably an excipient contaminant, 2-chlorophenol is commonly used in insecticides, herbicides, and disinfectants. There is no Safework Australia exposure standard for 2-chlorophenol, but it is known to be a respiratory and dermal irritant.	Chivers E, Janka M, Franklin P, Mullins B, Larcombe A. Nicotine and other potentially harmful compounds in "nicotine-free" e-cigarette liquids in Australia. <i>Medical journal of Australia</i> . 2019;210(3):127-8.	p.127, 128
<b>Pulegone (found in insecticide)</b>	Pulegone was identified as a Chemical from the scientific literature as present in e-cigarette liquids and also listed in the Poisons Standard. Pulegone identified as a chemical ingredient in e-cigarette liquids.	<a href="#">Australian Government, NICNAS, 2019</a> .	Table 9 p.32, Appendix Table A2 p.71
<b>Pulegone (found in insecticide)</b>	Mint flavour was one of the most abundant volatile compounds identified in the selected refill liquids – pulegone was one of main compounds in mint flavoured e-cigarettes.	Geiss O, Bianchi I, Barahone F, Barrero-Moreno J, 'Characterisation of mainstream and passive vapours emitted by selected electronic cigarettes' <i>International Journal of Hygiene and Environment Health</i> Vol 218, issue 1, January 2015:169-180.	p.172 Table 2
<b>Pulegone (found in insecticide)</b>	One "menthol" e-liquid contained no menthol and may have instead contained potentially carcinogenic analogues such as pulegone, or synthetic 'coolants' such as N-ethyl-p-menthane-3-carboxamide.	Larcombe A, Allard S, Pringle P, Mead-Hunter R, Anderson N, Benjamin Mullins/ Chemical analysis of fresh and aged Australian e-cigarette liquids. <i>Med J Aust</i> 2022; 216 (1): 27-32	p.30

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<b>Pulegone (found in insecticide)</b>	This research found e-cigarettes expose users to pulegone, which is a concern because of its known carcinogenicity.	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.	
<b>Chemicals/flavourings in vapes - rare earth elements (REE)</b>	Use of e-cigarettes is a potential source of -rare earth elements REE. However, these elements were detected at low concentrations.	Badea M, Luzardo OP, González-Antuña A, Zumbado M, Rogozea L, Floroian L, Alexandrescu D, Moga M, Gaman L, Radoi M, Boada LD, Henríquez-Hernández LA. Body burden of toxic metals and rare earth elements in non-smokers, cigarette smokers and electronic cigarette users. Environ Res. 2018 Oct;166:269-275. doi:10.1016/j.envres.2018.06.007. Epub 2018 Jun 13. PMID: 29908458.	
<b>Formaldehyde, heavy metals, particulate matter and flavouring chemicals</b>	“E-cigarettes may expose users to chemicals and toxins such as formaldehyde, heavy metals, particulate matter and flavouring chemicals, at levels that have the potential to cause adverse health effects.”	<u>NHMRC. CEO Statement: Electronic cigarettes</u> : National Health and Medical Research Council; 2017	Australia
<b>Various chemical substances and ultrafine particles</b>	Various chemical substances and ultrafine particles known to be toxic, carcinogenic and/or to cause respiratory and heart distress have been identified in e-cigarette aerosols, cartridges, refill liquids and environmental emissions.  Wide ranges in the levels of chemical substances such as tobacco-specific nitrosamines, aldehydes, metals, volatile organic compounds, phenolic compounds, polycyclic aromatic hydrocarbons, flavours, solvent carriers, tobacco alkaloids and drugs have been reported in e-cigarette refill solutions, cartridges, aerosols and environmental emissions.	Cheng T. Chemical evaluation of electronic cigarettes. Tobacco Control. 2014; 23:ii11–ii17. Bein K, Leikauf GD. Acrolein—a pulmonary hazard. Molecular Nutrition & Food Research. 2011;55(9):1342-1360.	
<b>E-cigarette aerosol is not harmless ‘water vapor’.</b>	The e-cigarette aerosol that users breathe from the device and exhale can contain harmful and potentially harmful substances, including: <ul style="list-style-type: none"> <li>• Nicotine</li> <li>• Ultrafine particles that can be inhaled deep into the lungs</li> <li>• Flavourings such as diacetyl, a chemical linked to a serious lung disease</li> <li>• Volatile organic compounds</li> <li>• Cancer-causing chemicals</li> <li>• Heavy metals such as nickel, tin, and lead</li> </ul> The aerosol that users inhale and exhale from e-cigarettes can expose both themselves and bystanders to harmful substances.	Centre for Disease Control and Prevention <u>CDC</u> Daniel Overbeek, Alexandra Kass, Laura Chiel, Edward Boyer, Alicia Casey ‘A review of toxic effect of electronic cigarettes vaping in adolescents and young adults’ Critical Reviews in Toxicology, 50:6 531-538.	USA
<b>Nicotine</b>			
<b>Nicotine</b>	Six out of 10 ‘non-nicotine’ liquids tested contained nicotine. Of particular concern is the frequency with which nicotine is detected in e-liquids labelled “nicotine-free”.	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.	p.127
<b>Nicotine</b>	TGA Laboratories are conducting compliance testing of available and imported products to assess if they meet the requirements specified in the TGO 110.	<u>TGA testing</u>	Australia
<b>Nicotine (addiction)</b>	The risks to the paediatric population are especially important as many adolescents who vape are nicotine-naïve and are not using e-cigarettes as smoking cessation devices, as they were originally marketed.	Daniel Overbeek, Alexandra Kass, Laura Chiel, Edward Boyer, Alicia Casey ‘A review of toxic effect of electronic cigarettes vaping in adolescents and young adults’ Critical Reviews in Toxicology 50:6 531-538.	p.531/532

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<b>Nicotine (addiction)</b>	Adolescents exposed to nicotine display increased effects of drugs of abuse, decreased attention and other learning/memory deficits, and emotional dysregulation.	Michelle Ren, Shahrdad Lotfipour, Frances Leslie 'Unique effects of nicotine across the lifespan', <i>Pharmacology, Biochemistry and Behaviour</i> 214 (2022) 173343.	
<b>Nicotine (impact on developing adolescent brain)</b>	Nicotine can harm the developing adolescent brain. The brain keeps developing until about age 25. Using nicotine in adolescence can harm the parts of the brain that control attention, learning, mood, and impulse control. Each time a new memory is created, or a new skill is learned, stronger connections – or synapses – are built between brain cells. Young people's brains build synapses faster than adult brains. Nicotine changes the way these synapses are formed. Using nicotine in adolescence may also increase risk for future addiction to other drugs.	Centre for Disease Control and Prevention (CDC)	USA
<b>Nicotine (impact on developing adolescent brain)</b>	Nicotine – the addictive substance in cigarettes and in most vapes – alters your brain and can lead to changes in mood. Because addiction is a form of learning, adolescents can get addicted more easily than adults. Brain changes caused by nicotine include long lasting effects on attention, learning and memory. Nicotine changes the way synapses are formed, which can harm parts of the brain that control attention and learning. During teenage years, the part of the brain that's responsible to decision making	<a href="#">U.S Surgeon General 2016 report 'E-cigarette Use Among Youth and Young Adults'</a>	USA
<b>Nicotine (impact on developing adolescent brain)</b>	For children and young people, vaping nicotine can have long-lasting, damaging effects on brain development and there is risk of nicotine addiction which could result in becoming a life-long smoker	<a href="#">World Health Organisation</a>	Global
<b>The nicotine in 1 vape can equal 50 cigarettes</b>	Many vapes have 50mg nicotine which is equivalent to roughly 50 cigarettes. Nicotine concentration can vary widely and depend on how many puffs you get.  Newer devices on the market in NSW have up to 4,000 puffs on the device and high nicotine concentrations which can equate to up to 20 packs of cigarettes nicotine equivalent.	Prochaska JJ, Vogel EA, Benowitz Nicotine delivery and cigarette equivalents from vaping a JUULpod <a href="#">Tobacco Control</a> Published Online First: 24 March 2021. doi: 10.1136/tobaccocontrol-2020-056367, <a href="#">Stanford University</a> infographic	USA
<b>Health effects</b>			
<b>Vaping is not safe</b>	Even though scientists are still learning about vapes, they do not consider them safe.	<a href="#">Australian Government Department of Health</a>	Australia
<b>We don't know the long-term health effects of vaping</b>	It took decades to understand the damage smoking was causing to health.	<a href="#">Australian Government Department of Health</a>	Australia
<b>The aerosol from e-cigarettes is not harmless.</b>	It can contain harmful and potentially harmful chemicals, including nicotine; ultrafine particles that can be inhaled deep into the lungs; flavouring such diacetyl, a chemical linked to a serious lung disease; volatile organic compounds such as benzene, which is found in car exhaust; and heavy metals, such as nickel, tin, and lead.	<a href="#">U.S Surgeon General 2016 report 'E-cigarette Use Among Youth and Young Adults'</a> cited by CDC	USA
<b>The harmful effects of flavourings</b>	While some of the chemicals in e-liquid are also used in food production and are generally considered safe when eaten, this does not mean that these chemicals are safe when inhaled as a vapour directly into the lungs. Several studies have reported harmful effects when certain flavourings that are approved for use in food production, including cherry, cinnamon and popcorn flavours, are inhaled.	<a href="#">NHMRC. CEO Statement: Electronic cigarettes: National Health and Medical Research Council; 2017</a>	Australia

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<b>People who vape are more likely to smoke</b>	Vaping among young people is strongly linked to the use of other tobacco products such as regular cigarettes, cigars, hookah and smokeless tobacco.	<a href="#">U.S Surgeon General 2016 report 'E-cigarette Use Among Youth and Young Adults'</a>	USA
<b>People who vape are more likely to smoke</b>	People who vape are three times as likely to take up smoking than those who have not used e-cigarettes	Banks E, Beckwith K, Joshy G. <a href="#">Summary report on use of e-cigarettes and impact on tobacco summary report on use of e-cigarettes and relation to smoking uptake and cessation, relevant to the Australian context.</a> Commissioned Report for the Australian Government Department of Health, September 2020.	Australia
<b>Impact on mental health and anxiety</b>	Regular nicotine use can worsen stress and anxiety and can make you more susceptible to depressive symptoms.	<a href="#">U.S Surgeon General 2016 report 'E-cigarette Use Among Youth and Young Adults'</a>	USA
<b>Impact on mental health and anxiety</b>	Increased symptoms of depression are linked to vaping nicotine. Research shows a link between increased nicotine use and depression, meaning the more you use nicotine, the higher your risk of depression. Nicotine – which is in most vapes – can amplify depression symptoms and can make anxiety symptoms worse.	Lechner, W. V., Janssen, T., Kahler, C. W., Audrain-McGovern, J., & Leventhal, A. M. (2017). Bi-directional associations of electronic and combustible cigarette use onset patterns with depressive symptoms in adolescents. <i>Preventive medicine</i> , 96, 73–78, doi: <a href="#">10.1016/j.ypmed.2016.12.034</a>	USA
<b>Impact on mental health and anxiety</b>	Quitting nicotine can lead to reduced stress, anxiety, and depression.	Taylor G, McNeill A, Girling A, Farley A, Lindson-Hawley N, Aveyard P et al. <a href="#">Change in mental health after smoking cessation: systematic review and meta-analysis</a> <i>BMJ</i> 2014; 348 :g1151 doi:10.1136/bmj.g1151	
<b>Lung health and asthma</b>	Vaping can increase the risk of lung infections and heart disease, including worsening obstructive lung diseases and increasing the odds of being diagnosed with asthma.	<a href="#">World Health Organisation European Public Health Association's summary of the science on e-cigs</a>	Global
<b>Lung disease and Diacetyl</b>	Vaping can increase the risk of lung disease, including worsening obstructive lung diseases and increasing the odds of being diagnosed with asthma.  Diacetyl is an organic compound used in the food industry and has been possibly linked to bronchiolitis obliterans.	Daniel Overbeek, Alexandra Kass, Laura Chiel, Edward Boyer, Alicia Casey 'A review of toxic effect of electronic cigarettes vaping in adolescents and young adults' <i>Critical Reviews in Toxicology</i> 50:6 531-538.	
<b>Immune system</b>	Nicotine in vapes can weaken the immune system.	<a href="#">U.S Surgeon General 2016 report 'E-cigarette Use Among Youth and Young Adults'</a>	USA
<b>Immediate health effects</b>	Short term health effects of vaping include nausea, vomiting, mouth and airway irritation, chest pain and palpitations.	Cantrell FL. Adverse effects of e-cigarette exposures. <i>Journal of Community Health</i> , 2014; 39(3):614–6. <a href="https://www.ncbi.nlm.nih.gov/pubmed/24338077">https://www.ncbi.nlm.nih.gov/pubmed/24338077</a>	
<b>Second-hand vapour</b>	Vaping can expose the people around you to toxic chemicals.	<a href="#">World Health Organisation</a>	
<b>Impact of physical and sporting ability</b>	Vaping can negatively impact your respiratory function.	US FDA <a href="#">video</a>	
<b>Risk of poisoning and EVALI</b>	Exposure of children or young people to vaping liquids pose a serious health risk. There is a risk of the devices leaking, or of children swallowing the liquid. Vapes have been known to cause serious injuries including burns through fires and explosions. There is growing evidence that vaping could be associated with lung injuries known as 'e-cigarette or vaping associated lung injury' (EVALI).	World Health Organisation Chan BS, Kiss A, McIntosh N, Sheppard V, Dawson AH. <a href="#">E-cigarette or vaping product use-associated lung injury in an adolescent.</a> <i>Med J Aust.</i> 2021 Oct 4;215(7):313-314.e1. doi: 10.5694/mja2.51244. Epub 2021 Sep 6. PMID: 34490629.	Global; Australia

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<b>Risk of burns</b>	Vaping waste contains chemicals that can burn or explode.	Yogi Hale Hendlin, 2018, <a href="https://doi.org/10.2105/AJPH.2018.304699">Alert: Public Health Implications of Electronic Cigarette Waste</a> , American Journal of Public Health 108, 1489_1490, <a href="https://doi.org/10.2105/AJPH.2018.304699">https://doi.org/10.2105/AJPH.2018.304699</a>	
<b>Vaping is not safer than smoking</b>	Because vapes are relatively new and haven't been studied over a long period of time, it is impossible to say they are safer than cigarettes. The health risks associated with vaping remain uncertain, but they cannot be considered safe. Both vapes and cigarettes have health risks. The safest approach is to not use either.	<a href="#">World Health Organisation</a>	
<b>Signs of addiction</b>	<ul style="list-style-type: none"> <li>• Cravings, or feeling like you really need to vape</li> <li>• Going out of your way to get a vape</li> <li>• Feeling anxious or irritable</li> <li>• Continuing to vape because you find it hard to stop</li> <li>• Having trouble sleeping</li> </ul>	<a href="#">NSW Health Quitline - iCanQuit</a>	
<b>Context</b>			
<b>Tobacco industry Vapes use flavours to make them appealing.</b>	<p>"Tobacco and related industries' tactics to market to children and adolescents include:</p> <ul style="list-style-type: none"> <li>• Over 15,000 flavours, most of which attract children and adolescents</li> <li>• Social media influencers and marketing</li> <li>• Sponsored events and parties</li> <li>• School scholarships</li> <li>• Sleek, sexy designs</li> <li>• Product placement in entertainment media</li> <li>• Free product samples</li> <li>• Single stick cigarettes make addiction more affordable</li> <li>• Selling products at eye level for children</li> <li>• Product placement and advertising near schools</li> </ul>	<a href="#">World Health Organisation</a>	Global
<b>Access to vapes is easy for young people</b>	Nearly 80% of young people say it is easy to get a vape.	Cancer Council NSW's Generation Vape study (no formal reference yet) 2021.	NSW
<b>Access to vapes is easy for young people</b>	While it is currently illegal to buy or sell nicotine e-liquids in Australia, some are imported or sold online and these refills and disposable vaporisers may contain nicotine, sometimes at high levels.	<a href="#">NSW Education</a>	NSW
<b>Vapes are not a legal product</b>	It is illegal to buy vaping products unless you have a prescription from a medical professional. In Australia, all e-cigarettes that contain nicotine require a prescription. Australians will need a prescription to legally access nicotine containing e-cigarette products for any purpose. This includes importing these products from overseas	<a href="#">Australian Department of Health Therapeutic Goods Administration Public Health (Tobacco) Act 2008</a>	Australia
<b>Most young people do not vape</b>	Four out of five young people have never vaped. In 2019-2020, 21.4 per cent of 16 to 24 year olds reported having used an e-cigarette.	<a href="#">NSW Population Health Survey (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health, 2020</a>	NSW

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<b>Labelling often incorrect</b>	<p>Vaping products are often incorrectly labelled with many vapes which claim to be nicotine free actually containing high levels of nicotine.</p> <p>Testing conducted by the New South Wales Ministry of Health in the course of compliance activity since late 2015 found that of 929 samples of e-liquids tested, 567 (61%) contained nicotine. The samples tested were a mix of those labelled as containing nicotine and those labelled as containing no nicotine; 54% of the positive samples returned a nicotine concentration greater than or equal to 2,500 mg/L.</p> <p>Parents should be particularly mindful of children and young people accessing vapes and the liquids used in them which are often enticing because of the fruit or lolly flavourings.</p> <p>Vaping e-liquid packaged often do not accurately detail the ingredients of the liquids and do not have any child resistant enclosures.</p> <p>Each of the test samples tested were labelled incorrectly, did not list all ingredients, and contained at least one potentially harmful chemical.</p>	<p><u>Policy and regulatory settings of e-cigarettes in Australia</u> Australian Department of Health 28 November 2019</p> <p><u>NSW Health, 2013</u></p> <p>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.</p>	<p>Australia, NSW</p> <p>Australia</p>
<b>Vapes hidden in plain sight</b>	<p>Vapes can look like common objects like highlighters, USB's and pens.</p>	<p>Stanford Medicine's <u>Tobacco Prevention Toolkit</u></p>	
<b>Support a friend/your child/student to quit vaping</b>	<ul style="list-style-type: none"> <li>• Talk about why vaping is harmful. It's never too late to have the conversation.</li> <li>• Know the facts about vaping and the risks associated with vaping products</li> <li>• Set a good example by living tobacco and vape free</li> <li>• If you suspect someone is selling vapes or e-cigarettes you or your parents can report it to the Department of Health by emailing <a href="mailto:TobaccoPolicy@health.wa.gov.au">TobaccoPolicy@health.wa.gov.au</a>.</li> </ul>	<p><u>NSW Health</u></p>	
<b>How to have positive conversations with young people</b>	<p><b>K</b> – Know the facts and where to find them.</p> <p><b>E</b> – Engage in the topic in a relaxed easy-going way, perhaps taking the cue from around you, a note from school, a news story on it, seeing people vaping on the street.</p> <p><b>Y</b> – You know best how to speak to your child, and in ways that work for you, and provide them with the right information to make a healthy choice.</p>	<p><u>NSW Education</u></p> <p>Centre for Disease Control and Prevention (<u>CDC</u>)</p>	