Positive Choices
Drug and Alcohol Information
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The environmental impacts of e-cigarettes/vaping explained

What are e-cigarettes?

Electronic cigarettes, also known as e-cigarettes or vapes, are battery-operated devices that heat e-liquids which can contain chemicals such as nicotine, propylene glycol, and ethylene glycol. When the e-liquids are heated, they create an aerosol (or vapour) which is then breathed in, carrying the chemicals to the user's lungs. Learn about how e-cigarettes can affect your body in the Electronic Cigarettes and Vaping factsheet.

The 2019 National Drug Strategy Household Survey found that 1 in 10 young people aged 14 to 17 (9.6%) had used an e-cigarette at least once in their lifetime. More recently, the 2021 *Generation Vape* study surveyed young people in New South Wales aged 14 to 17 years old about their e-cigarette use. They found that almost one third (32%) of their sample had tried an e-cigarette. School staff, health and youth workers, and parents across Australia have also reported growing concern about e-cigarette use among young people.

Disposable e-cigarettes

E-cigarettes come in different forms, including disposable devices, refillable pod devices, and refillable liquid devices. The *Generation Vape* study found that of the young people who said they had ever used an e-cigarette and reported the type they used, 86% used disposable devices. These devices are hard to dispose of safely and can harm the environment and human health.

Environmental impacts

The plastic packaging and devices, the electronic components (known as e-waste), and the hazardous e-liquids that come from e-cigarettes are all threats to the environment. In the below sections we go into more detail on each of these issues:

Plastic

Littered e-cigarette packaging and devices are a growing environmental concern in Australia. As concerns about the devastating effects of plastics on the environment grow, it is important to know that disposable e-cigarettes are mostly non-biodegradable and made from plastics that are hard to recycle.

In 2018-19, Australians used 3.4 million tonnes of plastics – over 100kg per person. Every year, roughly 130 000 tonnes of plastic go into the ocean. Only 13% of plastic gets recycled, so even if you do try to recycle an e-cigarette, there is no guarantee it won't end up in landfill or the environment.

Plastics take hundreds of years to decompose, so they pile up in landfill and waterways and harm the environment. Animals end up eating plastics, which can lead to injury and death. Plastics also break apart over time into microplastics and end up in our food. Researchers are worried that these tiny pieces of plastic could damage our cells and tissues or expose us to harmful chemicals.

E-waste

E-cigarettes also create electronic waste (known as e-waste) including circuit boards and lithium-ion batteries. If you litter e-cigarettes or put them in normal waste or recycling bins, the electronic components can cause fires. E-cigarette batteries can also pollute the environment with heavy metals, which seep into the soil and can enter groundwater, rivers, and lakes. Research has shown that this harms both the environment and human health, with children even more at risk than adults. There are also environmental harms associated with obtaining the lithium to produce lithium-ion batteries, including water, air and soil contamination.

E-liquids

E-liquids can also leak out of disposed e-cigarettes and harm the environment. Nicotine and nicotine salts are poisonous to fish and other aquatic life and can contaminate drinking water. It is important to remember that labelling is not always correct on e-cigarettes. This means they may have nicotine in them, even if this isn't on the label.

E-cigarette resources

If you would like to learn more about the impacts of e-cigarettes on your body, or are looking for prevention resources, there are a range of free resources available:

- Factsheet: Electronic Cigarettes and Vaping
- Webinar: E-cigarettes and vaping in young people – where to from here?
- Webinar: E-cigarettes and vaping – what you need to know
- Quick activity: E-cigarettes/vaping – recognising tobacco industry manipulation
- Game: SmokeSCREEN
- NSW Education vaping toolkit: https://www.health.nsw.gov.au/tobacco/Pages/vaping.aspx
- Lung Foundation Australia: https://lungfoundation.com.au/lung-health/protecting-your-lungs/e-cigarettes-and-vaping/

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