

Core Knowledge Content

What is an Electronic Cigarette/Vape?

Electronic cigarettes (e-cigarettes), commonly referred to as “vapes”, use a battery, a heating element and a liquid containing cartridge (e-liquid or e-juice) to create an aerosol or vapour that is inhaled. There are [several different types](#) and generations of vapes including small disposable devices that resemble cigarettes, larger “mods” that are customizable and refillable and newer, sleek designs that resemble flash drives. E-cigarette products do not contain tobacco although many contain nicotine, the addictive component in tobacco.

The Appeal to Youth

Vape devices and e-liquids appeal to youth. Colourful packaging and designs with fun flavours (fruit, candy, etc.) are clearly marketed towards children. Youth are exposed to these products through media when they see celebrity figures using them. Vape culture on social media and cloud competitions among peers is common. The marketing and appeal of these products to young people is similar to what has been done by the tobacco industry when they market their products to children. In Niagara, 63.3% of students in grades 7 and 8 and 52.7% of students in grades 9 to 12 vaped for the first time in the past 12 months (Report on Health Behaviours and Perceptions of Niagara Students 2019 OSDUHS).

JUUL

JUUL is a brand of e-cigarette that is shaped like a USB flash drive. It is a battery-powered device that heats a nicotine-containing liquid to produce an aerosol that is inhaled. All JUUL e-cigarettes have a high level of nicotine and a single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes. JUUL is one of a few e-cigarettes that use nicotine salts, which allow particularly high levels of nicotine to be inhaled more easily and with less irritation than the free-base nicotine that has traditionally been used in tobacco products, including e-cigarettes.

<https://www.cdc.gov/tobacco/infographics/youth/pdfs/e-cigarettes-usb-flash-508.pdf>

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What's the Risk?

Electronic cigarettes may be perceived as being less harmful than cigarettes but there are still risks. Long-term effects of the use of e-cigarettes remain largely unknown, however [health risks](#) have been linked to chemicals in e-juice as well as the aerosol emitted from e-cigarettes. E-liquid cartridges contain varying amounts of nicotine (which have led to cases of nicotine poisoning), aerosol contains other chemicals that are harmful and injuries have been reported from exploding batteries in electronic cigarettes. According to OSDUHS, a significantly lower proportion of grade 7 and 8 Niagara elementary students in 2019 (32.8%) believe there is no risk or a slight risk of vaping on a regular basis compared to almost half (49%) of grade 7 and 8 students in 2015 (Report on Health Behaviours and Perceptions of Niagara Students 2019 OSDUHS).

[CDC-Quick Facts on the Risks of E-cigarettes for Kids, Teens and Young Adults](#)

Nicotine

Nicotine is found naturally in the tobacco leaf. It is the chemical that makes tobacco products so addictive. Nicotine can also be found in electronic cigarettes (vapes). In Ontario, nicotine is a legal drug but you must be 19 years of age or older to purchase tobacco products or e-cigarettes.

When smoked, nicotine is absorbed through the lungs and into the bloodstream and to other organs in the body. It can take as little as 10 seconds for nicotine to reach the brain after it is inhaled. Initially, nicotine may cause you to feel good or energized, or alert and calm. Nicotine causes blood vessels to constrict (narrow) which increases blood pressure. It also increases heart rate, decreases body temperature, alters brain waves and relaxes muscles. Nicotine affects the lungs by paralyzing cilia (tiny hair-like structures in the lungs), which are responsible for cleaning dirt and germs out of the lungs. This in turn makes smokers more vulnerable to colds, flu, bronchitis and other diseases. In large doses (two drops on your tongue), nicotine is poisonous and can cause death. New smokers may experience coughing, dizziness and dry/irritated throat. They may also have nausea, weakness,

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stomach cramps and headache. These symptoms may decrease once a tolerance to nicotine is developed.

Chronic exposure to nicotine affects brain development. This is particularly harmful during periods when the brain is developing, such as in young people (especially before the age of 25) or during fetal development (pregnancy). These lasting changes can negatively affect a person's thinking, reasoning and/or behaviour, including memory and attention.

Nicotine is addictive. Young people may become more easily addicted because their brains are rapidly growing and developing. Nicotine can also train the adolescent brain for addiction to other drugs.

When some people go for more than a few hours without nicotine they may experience withdrawal symptoms. These symptoms may include dizziness, shakiness, headaches, anxiety and irritability, nervousness and restlessness, difficulty concentrating or sleeping, increase appetite, slight depression, cravings (for a cigarette/e-cigarette). Many people continue to smoke or vape to avoid these feelings.

Addiction

The term addiction can be described by the presence of the cravings, loss of control, and compulsion to use despite consequences. Often the urge is so powerful that despite the risk, people continue to use the drug(s).

People never start using drugs with the intention of becoming addicted. However, the changes that occur in the brain make it challenging to quit using the drug. The best way to avoid becoming addicted to a drug is to not start using the drug.

Are Nicotine-Free E-juice Cartridges Safe?

Even cartridges that are in fact nicotine-free present health risks. It is more than just a water vapour that is being inhaled. There are a number of chemicals (e.g. diacetyl and acetyl propionyl) and heavy metals (e.g. lead and cadmium) in e-juice that are linked with respiratory disease and/or cancer. Some ingredients in e-juice may be safe to ingest, but it is not known if those same substances are safe to inhale.

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Teenagers that vape may be more likely to transition to smoking cigarettes, which is known to be dangerous to one's health. There are also questionable and potential second hand exposures risks. Vapes are still fairly new and the long term effects are not yet fully known.

Legislation

In Canada, e-cigarettes with and without nicotine are legal; however this does not mean they are safe. Sale and supply of electronic cigarettes or any components (e.g. e-liquid) is illegal to those under 19. Anyone who sells or supplies a minor with a vaping device or e-liquid can be charged. This applies not only to stores but also individuals (e.g. if students sell or supply to another student who is under 19 could be charged). [Under the Smoke-Free Ontario Act](#), vaping is prohibited in the same places tobacco is prohibited including on school property, indoor public places and some outdoor public places.

In Niagara, there is bylaw that prohibits the use of tobacco, cannabis and vaping products from being smoked or vaped in the following public spaces in the Niagara region::

- Beaches
- Recreation trails
- Within nine metres of an entrance or exit of a publicly accessible building or workplace
- Parks, playgrounds and sports fields
- Splash pads and outdoor pools
- Arenas and recreation centres
- Outdoor areas of municipal and regional buildings
- Bus shelters

Refusal skills

- Say “no”. Be assertive and clear.
- Walk away
- Broken record – You may be asked several times - keep repeating “no”.
- Say “no” different ways. For example, “I’m not interested” or “I don’t want to.”

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- Give an excuse or explanation if you want. For example, “I don’t want to vape because I don’t want to become addicted.” Or “I don’t want to vape because I don’t know what is in that cartridge.”
- Offer an alternative activity. For example, “I don’t want to vape; how about we go to the mall?”
- Reverse the pressure. For example, “Why are you pressuring me?”

Using Vapes to Quit Smoking Cigarettes

Some people who smoke cigarettes may choose to use vapes as part of their quit attempt. However, at this time there is no clinical evidence to indicate that they are a proven cessation aid.

Vapes may be used as a harm reduction strategy for adults who do already smoke. However, the message to youth and those who do not currently smoke is to not start vaping.

Where to get help

- Public Health Tobacco Hotline 905-688-8248 ext. 7393
- [Community Addictions Services of Niagara](#) (CASON) (905) 684-1183
- Teacher/Principal/VP
- Child and Youth Worker
- Public Health Nurse
- Doctor
- Parents

Supplemental Knowledge

Other Drugs

Vaping of cannabis and other drugs is an emerging issue. It is unclear how much this is happening, but it is apparent that individuals are experimenting with vaping devices. Vape manufacturers are selling attachments and accessories to better vaporize these substances.

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Youth may be drawn to vaping as a method to use cannabis because it does not give off as much odour as smoking. Since cannabis use is and will remain illegal for individuals under 19, hiding one's cannabis use may be appealing. Also, vaping cannabis may be perceived as less harmful compared to smoking cannabis. However, the use of vapes for cannabis is unregulated and the contents and safety of e-liquid are questionable. THC, the active ingredient in cannabis, tends to be consumed in higher amounts when vaped compared to smoking. THC has negative consequences on the brain, especially for those under 25.

Dripping

Dripping is a method of vaping that involves putting the e-liquid directly onto the coils of the device. This creates a larger cloud of vapour and may enhance the flavour of the e-liquid. This is a fairly new trend and not much is known about it, including how popular it may or may not be. By using this method the e-liquid is heated at a higher temperature and may therefore, increase exposure to chemicals.

[Vaping products visual dictionary](#)

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Resources

Additional Teaching Resources

| Websites | Videos |
|---|---|
| <p>Notanexperiment.ca Information, videos, and escape room game created by Simcoe Muskoka District Health Unit (SMDHU)</p> <p>Unfilteredfacts.ca Focused on educating the public on health related issues like substance use prevention. Check out the Use Your Instincts Campaign!</p> <p>Smokershelpline.ca Smokers helpline offers a text messaging program, as well as online live chat and can offer support for quitting vaping</p> <p>Truthinitiative.org Truth Initiative: This is Quitting: US Based Youth Text Messaging Quitting Program (text messaging support works in Canada)</p> <p>Mylifemyquit.com Free help for youth about quitting vaping</p> <p>Drug Free Kids Canada Downloadable workbook on vaping</p> <p>REACT Instagram Various types of health messaging from Niagara Region Youth Group</p> | <ul style="list-style-type: none">• Not An Experiment #1• Not An Experiment #2• Not An Experiment #3• Electronic Cigarettes and Vaping• Real California Teens Talk About Vaping• Trash Talking Trash |

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[Niagara Region: E-cigarettes and Vaping](#)

[Ontario Student Drug Use and Health Survey \(OSDUHS\) 2019](#)

[Ontario Tobacco Research Unit](#)

[Smoke-Free Ontario Act](#)

[Life-threatening bronchiolitis related to electronic cigarette use in a Canadian youth | CMAJ](#)

<http://davidhammond.ca/projects/e-cigarettes/itc-youth-tobacco-ecig/>

[Health Canada Vaping tip sheet for Parents](#)