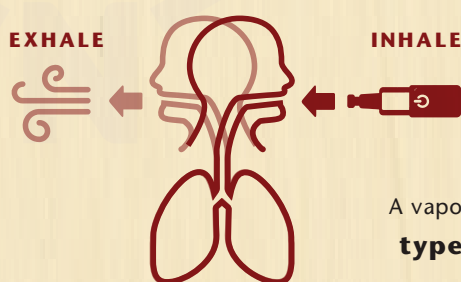


# VAPING

A COMPILATION OF RESEARCH



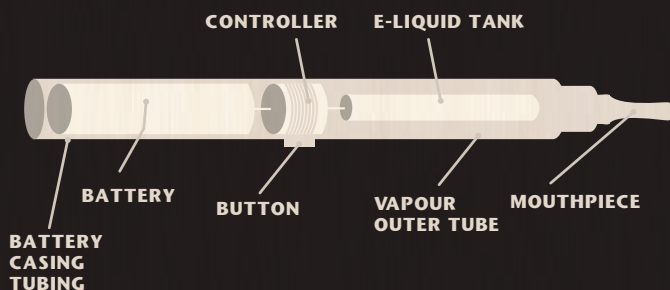
## VAPOUR PRODUCTS



A vapour product, **also known as an e-cigarette, is a type of nicotine delivery system.** Vapour products come in a variety of shapes and sizes. These products do not contain tobacco and involve no combustion.

## HOW DOES IT WORK?

"In contrast with cigarettes, which involve tobacco combustion, [vapour products] use **heat from an electric heating element to transform e-liquid into a vapour.** When the consumer inhales the vapour, nicotine is absorbed into the blood stream via the respiratory tract."<sup>1</sup>



### DIFFERENCES IN HOW E-LIQUIDS ARE CONTAINED:



OR



#### OPEN SYSTEM REFILLABLE

There are many specifically formulated e-liquid flavours that can be mixed in different ways.

#### CLOSED SYSTEM NON-REFILLABLE

Cartridges can be replaced anytime - either when the cartridge is finished or to enjoy different flavours.



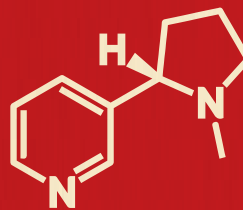
GLYCEROL



PROPYLENE GLYCOL



FLAVOURS



NICOTINE



GLYCEROL<sup>2</sup>

NATURALLY OCCURS IN:



COMMERCIALY  
DERIVED FROM



VEGETABLE  
MATTER

Commonly used in the food industry



FLAVOURS

Flavours used in e-liquids are generally the same as those approved for use in food products.

Flavours play an important part in attracting smokers to potentially reduced risk alternatives, such as vaping.



PROPYLENE GLYCOL<sup>3</sup>

NATURALLY OCCURS IN:

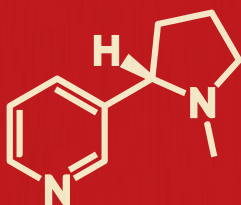


COMMERCIALY  
DERIVED FROM



SYNTHETICALLY  
DERIVED

Commonly used in the food industry



NICOTINE



CONTAINS NO TOBACCO

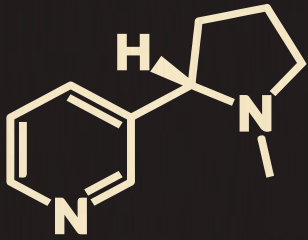
The nicotine that is used in e-liquids is extracted from tobacco leaf or synthetically made. **E-liquids do not contain tobacco.**

"Nicotine inhaled from smoking tobacco is highly addictive. But it is primarily the **toxins and carcinogens in tobacco smoke – not the nicotine – that cause illness and death.**"<sup>5</sup>

The International Agency for Research on Cancer does not identify nicotine as a carcinogen.

**"There is no evidence that sustained human use of nicotine alone increases the risk of cancer."**<sup>6</sup>

# HARM REDUCTION



The British Medical Association recently stated that  
**"there is a growing consensus that using an e-cigarette is significantly less harmful than smoking tobacco."**<sup>7</sup>



Independent studies demonstrate that products that involve no combustion are likely to emit far **fewer and lower levels of toxicants** compared to conventional cigarettes and have the potential to be less harmful to health.<sup>8</sup>

## Hazardous compounds in cigarette smoke



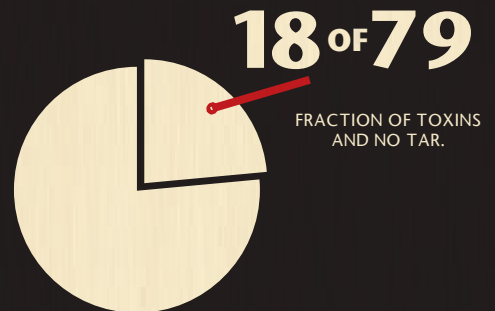
**7,357** Estimated number of chemical compounds in cigarette smoke

**70** Number of these compounds with confirmed carcinogenic activity<sup>24</sup>

In a 2017 survey of the academic and scientific literature on vapour products, the BC Centre for Addictions concluded that

**"Vapour from e-cigarettes contains only a fraction of the toxins (18 of 79) found in tobacco cigarettes**

and generally in substantially lower levels. E-cigarettes also do not deliver tar."<sup>10</sup>



A report released in February 2018 by Public Health England reviewed all of the published scientific literature, survey data and other reports and databases made available since 2015. The researchers echoed earlier findings that

e-cigarettes are 95% less harmful and added that **thousands of smokers incorrectly believe vaping is as harmful as smoking**; and that the evidence does not support e-cigarettes are a gateway to smoking, but rather an important tool to help people quit.<sup>11</sup>

According to recent research, there is a discrepancy between current evidence and public perceptions of relative risk of various tobacco/nicotine products. To address these misperceptions health researchers have argued for "public health education efforts to increase understanding of basic harm reduction principles."<sup>12</sup>



# WHAT TO LOOK FOR IN A VAPING PRODUCT

Consumers should ensure that their e-liquid contains pharmaceutical grade nicotine and food grade flavourings.



Products should comply with product standards like the ones being developed by national and international standard organizations. Topics covered include:

**Design Safety**  
**Quality of Ingredients**  
**Strict Manufacturing Processes**  
**Testing**  
**Labeling**  
**Packaging**



Compliance with Federal and Provincial laws and regulations.

## SECOND HAND VAPOUR

"Although research in this area is limited, there is a lack of evidence that exposure to the constituents of e-cigarette vapour poses specific health risks to bystanders... **Any second-hand exposure would be less than 1% of the threshold limit value that is placed on workplace air quality.**"<sup>13</sup>



CIGARETTE SMOKE  
AIRBORNE VAPOUR

### REDUCED SECONDHAND EXPOSURE

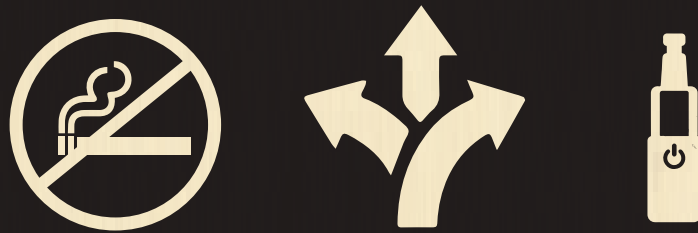
**"Vapour is airborne for only 30 seconds,** compared to 18-20 minutes for cigarette smoke, thereby greatly reducing second-hand exposure."<sup>14</sup>



### CARBON MONOXIDE AND VOC FREE

"Tests confirmed that second hand vapour is far less toxic than cigarette smoke often **by several orders of magnitude,** and that it does not contain carbon monoxide or volatile organic compounds."<sup>15</sup>

# GATEWAY HYPOTHESIS



The “gateway” hypothesis claims that people who vape are more likely to **smoke in the future**. However, these findings are in contrast to those published by a number of prominent public health groups, academics and health officials.<sup>16,17,18,19,20,21</sup> A 2017 systematic review of the evidence conducted by the University of Victoria, Canada, found that **“there is no evidence of any gateway effect whereby youth who experiment with vapour devices are,** as a result, more likely to take up tobacco use. The available evidence is that tobacco use by youth has been declining while use of vapour devices has been increasing.”<sup>22</sup>

*It is important to remember that, vaping is legal in Canada, companies are regulated to prevent the sale of vapour products to those under the age of majority. Federal and Provincial legislation makes it illegal to market to youth, to advertise close to schools and prohibits the use of people or characters.*

## NEED FOR FURTHER EVIDENCE

Further clinical studies are needed to comprehensively address the long-term risks of these products in absolute terms. In the interim, however, **inertia should not be allowed to waste an opportunity to potentially improve public health.**



## REGULATION



As Jeff Stier, a prominent harm reduction advocate, articulates, we must **“make sure that these products are appropriately regulated and stay out of the hands of kids. We also mustn’t limit access, affordability or innovation - all necessary elements to effective harm reduction strategies.”**<sup>23</sup>



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