

# Vaping in Aotearoa: Understanding the Science and Unpacking the Key Ethical Issues

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Aotearoa New Zealand is recognised as leading the world in its response to the use of tobacco, encompassed in its bold “Smokefree Aotearoa 2025” Action Plan which aims for 95% of New Zealanders being smokefree by 2025.

The Smokefree New Zealand website notes that this will be achieved by:

- protecting children from exposure to tobacco marketing and promotion
- reducing the supply of, and demand for, tobacco
- providing the best possible support for quitting

In 2017, the Ministry of Health recognised that vaping products have the potential to make a positive contribution to the cessation of tobacco smoking.

In the past 5 years, however, as a result of a lack of legislation on vaping products, the existence of an appealing aesthetic achieved by aggressive and effective marketing aimed specifically at young persons, and a proliferation of outlets making vape products readily and easily available, we have seen a significant and worrying increase in vaping, including youth vapers. A recent study estimates that one-in-five teens now use an e-cigarette daily (see <https://www.stuff.co.nz/life-style/wellbeing/300812433/why-do-kiwis-vape-so-much-compared-to-the-rest-of-the-world>). In the wake of perceptions that vaping is a “clean alternative”, it is increasingly becoming normalised and regarded as a “social activity” at school or parties, leading the Ministry of Health to take “extra steps in 2022 to make sure rangatahi understand that the best choice for their health is to be vape free”. (See <https://www.health.govt.nz/our-work/preventative-health-wellness/tobacco-control/vaping-smokefree-environments-and-regulated-products>)

This article has been written to offer an information guide about vapes and vaping in order to promote more informed discussions about this growing practice as we seek to grapple with the issue in our own country.

The article is not intended as a review of the effectiveness of vapes as an aid to quitting smoking, or as a comparison between conventional cigarettes and vapes. Those who are interested in quitting nicotine should seek professional medical guidance and support from their healthcare provider for a tailored response suited to their personal situation.

## What is a vape?

Vapes, vaporisers, vape pens, hookah pens, electronic cigarettes (e-cigarettes), e-cigs and e-pipes are some of the terms used to describe the ‘electronic nicotine delivery systems (ENDS)’ produced by tobacco companies such as Philip Morris International (PMI), British American Tobacco (BAT), Altria, Imperial Brands Plc, and Japan Tobacco International (JTI) to deliver nicotine to their customers without the need to burn tobacco<sup>1 2 3 4 5 6</sup>.

ENDS products differ from conventional cigarettes because, instead of combusting tobacco to release nicotine, they heat a pod of nicotine-infused e-liquid or ‘vape juice’ that is placed inside them. This process produces a nicotine infused vapour that the customer inhales<sup>7 8</sup>. Unlike conventional cigarettes, ENDS do not contain or use tobacco – they only use nicotine. ENDS are battery-operated appliances that either require regular charging to power their heating elements or are ‘single use disposable’ designed to be thrown away after use.

As well as ENDS, there are other e-devices on the market that heat rather than burn tobacco<sup>9 10 11 12</sup>. These products, also produced by the same companies that produce conventional cigarettes and ENDS, are sometimes referred to as ‘heated tobacco products’. They are different to ENDS because they do use tobacco to deliver nicotine to customers. However, these

products differ from conventional cigarettes because they produce a vapour rather than smoke for customers to inhale. The products do this by heating the tobacco inside them to a high temperature, rather than combusting it<sup>13 14 15</sup>.

ENDS fall into one of two categories – ‘mouth-to-lung’ devices, where the person holds the vapour in their mouth first before inhaling it into their lungs (as with a conventional cigarette), or ‘direct-to-lung’ devices, where the person inhales the vapour straight into their lungs (as with an asthma inhaler)<sup>16</sup>.

Some ENDS look like conventional cigarettes, cigars or pipes, whilst others look like pens or USB sticks. Larger devices, such as tanks or mods, bear no resemblance to conventional combustible cigarettes. Some non-disposable ENDS may have replaceable parts, such as mouth-pieces, e-juice containers, or heating coils. There are a range of products available, described in a variety of ways, that come in a variety of styles and colours, and they can vary in price from \$9.99 to \$165<sup>17 18 19 20 21</sup>.

## What is in a vape?

ENDS contain an e-liquid or vape juice comprised of a **solvent base, sweeteners, flavours, and nicotine**<sup>22 23 24 25</sup>.

The **solvent base** helps to dissolve the other ingredients in the e-juice so they can be heated and inhaled. Most solvents are made of vegetable glycerine and propylene glycol. Vegetable

glycerine is a liquid that is extracted from plant oils. It is a common ingredient in cosmetic products and in pharmaceutical products, and it is responsible for producing the vapour cloud associated with ENDS. Propylene glycol is a synthetic, petroleum-based compound that is often used in cosmetic products such as deodorants and fragrances. It is the ingredient in the e-liquid that creates a throat sensation (throat hit) similar to smoking<sup>26</sup>.

Varying the mix of propylene glycol and vegetable glycerine can alter the strength of the throat hit produced by the e-juice and the size of the vapour cloud that is created. For example, higher levels of propylene glycol give a stronger throat hit, whilst higher levels of vegetable glycol create bigger clouds<sup>27 28 29 30</sup>.

**Sweeteners** are added to make the vape juice more palatable. The sweeteners that are usually used are sucralose and / or ethyl maltol. Sucralose is an artificial sweetener that is often used as a zero-calorie sugar replacement. Ethyl maltol is another synthetic compound that is often used in sugar free lollies<sup>31 32 33 34</sup>.

Alongside the sweeteners, **flavours** are added to make the e-juice more palatable. There are a range of flavours available, such as berry, nutty, dessert, fruity, creamy, candy, cola, iced pop, zesty lemon, sour apple, cherry, mint, choco-chesnut, peach, melon, banana, menthol, tobacco<sup>35 36</sup>.

The **nicotine** in e-juices come as one of two types – either freebase nicotine or nicotine salts, also known as nic salts<sup>37</sup>. Freebase nicotine is manufactured to create a stronger throat hit and it can feel harsher on the throat<sup>38</sup>. Nicotine salts are manufactured to make vaping smoother on the throat as they have been pH balanced<sup>39</sup>. Freebase nicotine is marketed by some companies as “purer” than other nicotine derivatives, whilst nicotine salts are marketed as “easier to vape in high quantities” because they are pH balanced, and “more easily absorbed by the body”<sup>40</sup>.

Freebase nicotine and nicotine salts come in different strengths – 0mg, 6mg, 18mg, and 20mg for freebase nicotine, and 0mg, 36mg, and 50mg for nicotine salts<sup>41</sup>. In comparison, conventional cigarettes contain an average of 22-36mg of nicotine per packet<sup>42</sup>. Nicotine replacement products, such as gum, lozenges, inhalators, and patches vary in strength from 2mg to 25mg per dose of the product<sup>43</sup>.

In Aotearoa New Zealand, by law, freebase nicotine must not exceed 20mg per millilitre of e-juice, and nicotine salts must not exceed 50mg per millilitre of e-juice. The total nicotine content in a container of e-juice sold must not exceed 1800mg, regardless of whether it is present as freebase nicotine or nicotine salts<sup>44 45 46 47</sup>.

Under the Medicines Act 1981, nicotine is classed as a scheduled substance<sup>48</sup>. This means it is illegal to sell an ENDS product while making a therapeutic claim about its use unless the product has been approved by Medsafe<sup>49</sup>. To date, no manufacturer or importer of ENDS products has sought to do this<sup>50</sup>. ENDS products in Aotearoa New Zealand are classed as commercial products rather than pharmaceutical / therapeutic products<sup>51</sup>.

It is important to note that the list of ingredients on the packets/webpages of e-juices show the ingredients of the e-juices

before they are heated<sup>52</sup>. The heating process breaks down these ingredients – the flavours, sweeteners and solvent bases – into other components. It is these *heated* ingredients that are then inhaled into the lungs as fine-grained particles alongside the nicotine. Research is still being carried out to determine exactly what these heated ingredients are<sup>53 54</sup>. To date, some research has found formaldehyde, acetaldehyde, nickel, lead, chromium, tin, aluminium, cadmium, and manganese in heated vape juices<sup>55 56 57 58</sup>. Research in this area is ongoing<sup>59</sup>.

Although the word ‘vapour’ in vaping suggests ‘water vapour’, there is no water in e-juices<sup>60 61 62 63</sup>.

## What is nicotine?

Nicotine is a naturally occurring alkaloid that is produced by plants in the nightshade family. The plants produce nicotine as an insecticide to protect themselves from predation, killing the insects that ingest it<sup>64</sup>. Due to this property, nicotine has been explored for use as an ingredient in industrial insecticides<sup>65 66</sup>.

Because of its toxic nature, nicotine is listed by the Environmental Protection Agency (EPA) in the USA as a hazardous waste<sup>67</sup>. This means it is known to have properties that make it dangerous to, or capable of having a harmful effect on, human health and / or the environment and is therefore subject to ‘cradle-to-grave’ waste management regulations<sup>68</sup>.

If ingested in high enough concentrations, nicotine can lead to poisoning and death in humans, as well as other animals: 60-90mg of nicotine in its liquid form is lethal for adults, and 10mg is lethal for young children. Less than this is lethal for babies<sup>69 70</sup>. Symptoms of nicotine poisoning include confusion, rapid or irregular heart rate, high blood pressure, respiratory failure, seizures, convulsions, tremors, nausea, and vomiting<sup>71</sup>.

However, at the dosages that are typically ingested through commercial products such as conventional cigarettes, ENDS, and heated tobacco products, the most prominent effect of nicotine on the body is its addictiveness: nicotine is very addictive<sup>72</sup>.

Nicotine acts in the body by attaching to neurotransmitter receptors in the brain<sup>73</sup>. This triggers a series of fight-flight chain reactions in the body, stimulating the adrenal glands to release adrenaline<sup>74</sup>. This, in turn, elevates heart rate, blood pressure and breathing, preparing the body for fight-flight<sup>75 76</sup>. The increase in adrenaline also stimulates the body to release sugar which, under survival circumstances, provides the fuel for the body’s flight-flight response<sup>77</sup>. However, because the body is not under actual threat, the fuel is not used up, so the body’s blood sugar levels are elevated unnecessarily<sup>78</sup>. Because nicotine also suppresses insulin, the body’s blood sugar levels remain elevated. This is one of the reasons why nicotine can lower appetite<sup>79</sup>. Once ingested, it takes between one hour and four hours for nicotine to be processed and removed from the body<sup>80</sup>.

Nicotine has a short half-life of approximately two hours<sup>81</sup>. This means that withdrawal symptoms occur swiftly once biological addiction has been established. Withdrawal symptoms include irritability, difficulty concentrating, restlessness, anxiety, difficulty sleeping, increased appetite, strong cravings, lowering

of heart rate, dizziness, light-headedness, blurry vision, coughing, nausea, constipation, and diarrhoea<sup>82 83 84</sup>. These symptoms are calmed by ingesting more nicotine. However, because the body can build up a resistance to nicotine, higher concentrations of nicotine can be needed to relieve further withdrawal symptoms<sup>85</sup>.

Nicotine can be passed to infants through breastmilk<sup>86</sup>. It can also pass to unborn babies, causing pre-natal dependence on nicotine; newborn babies may show withdrawal symptoms after birth if they have been exposed to nicotine in-utero<sup>87</sup>.

## Do vapes pose a health risk?

ENDS pose a risk to health<sup>88</sup>. The consensus across health-oriented agencies and organisations is: if you do not already use nicotine, do not take up vaping and if you do vape, you should look to eventually stopping<sup>89 90</sup>.

The level of risk from using ENDS is context dependent and varies depending on a range of factors, such as: the type of product that is used; how the product is used; how often it is used; how long it has been used for / will be used for; the quality of the product, how it has been sourced, and to what quality control processes it has been subjected; who is using the product and their personal health profile / health-risk profile; whether the person using the product already ingests nicotine through other products<sup>91</sup>.

ENDS are still a relatively new product<sup>92</sup>. Because of this, it is not yet possible to establish a full and detailed picture of the long-term impacts of using them or being exposed to them<sup>93 94</sup>. For example, it can take years, or even decades, for conditions such as lung cancer, chronic bronchitis, chronic obstructive pulmonary disease (COPD), and other lung and heart conditions, to show themselves once they have begun<sup>95</sup>. However, there are concerns that ENDS can impact negatively on cardiovascular health and respiratory health<sup>96 97 98</sup>. More research, and more time, is needed to discern the effects ENDS products have for different people in different situations at different points in their lives<sup>99 100</sup>.

Compared to the extensive and conclusive literature about the negative health effects of smoking conventional cigarettes, the pool of research into the health and wellbeing effects of using ENDS is currently small<sup>101</sup>. As a result, there are multiple cross-references to the same, relatively small pool of studies across different platforms and agencies, and in different forms of media.

The following sections of this article are an attempt to briefly outline the concerns raised about ENDS to date.

### *(i) Safety of inhaling the ingredients in the e-juices:*

In New Zealand, flavours in e-juices other than tobacco extract must meet the standards of the Australia New Zealand Food Standards Code 2002<sup>102</sup>. However, as has been highlighted by a range of agencies, food standards are only relevant to eating the products to which they apply, not breathing them in<sup>103 104 105</sup><sup>106</sup>. The hydrochloric acid environment of the stomach is very different to the environment of the lungs<sup>107</sup>. Little is known about the effects of inhaling the flavouring and sweetening ingredients of e-juices (heated or unheated) into the lungs, even when the listed ingredients meet the required food standard

codes<sup>108 109</sup>. This means that, in this regard, there are in effect no current consumer safety requirements for ENDS products as they pertain to the respiratory system<sup>110</sup>. This area of research is still developing<sup>111 112 113</sup>.

Studies to date indicate that some flavours that are safe to eat are toxic to lung cells, for example chocolate and berry<sup>114</sup>. Other studies have found that, when heated, vanilla flavour and cinnamon flavour both turned into ingredients that can cause lung damage<sup>115 116</sup>. In the case of cinnamon flavour, one of these compounds was known to cause cancer<sup>117</sup>. Other research has found that high levels of exposure to the ingredient diacetyl in buttery flavoured e-juice can cause a chronic lung disease called bronchiolitis obliterans (this same ingredient is also used to flavour popcorn, which has led to this condition being known informally as 'popcorn lung')<sup>118 119</sup>. Additional research has found that heating sucralose to high temperatures may lead to it breaking down into harmful components<sup>120</sup>.

With regards to the unheated solvent ingredients in e-juices, the safety profiles for propylene glycol and vegetable glycerine are associated with their use in the cosmetics industry and the pharmaceutical industry. It is not clear how this translates to the use of these ingredients in ENDS products<sup>121</sup>.

### *(ii) Working out exactly what is being inhaled in the e-juices:*

Because the heating process breaks the listed ingredients of e-juices down into other components, it is not yet completely clear what ingredients are being inhaled once the e-juices have been heated, and whether these ingredients are safe<sup>122 123 124</sup>.

Research to date has found various toxic chemicals in ENDS vapour known to cause serious health problems<sup>125 126</sup>. For example, some research has found that ENDS vapour contains formaldehyde and acetaldehyde, both of which can cause damage to the lungs and can cause cancer<sup>127 128 129 130 131 132</sup>. Some studies found that ENDS vapour had higher levels of formaldehyde and acetaldehyde than conventional combustible cigarettes<sup>133</sup>.

Other research has found unsafe levels of heavy metals in ENDS e-juice and vapour, such as nickel, lead, chromium, tin, aluminium, cadmium, and manganese<sup>134 135 136 137</sup>. These substances can also cause damage to the lungs and to other organs, as well as cancer and other serious health conditions<sup>138 139 140 141 142 143 144</sup>. Some research has found that these metals were present in the e-juice itself, whilst other studies suggest that these metals may have leached from the heating elements inside the ENDS products<sup>145 146 147</sup>.

### *(iii) Safety of inhaling nicotine:*

As well as being very addictive, nicotine affects all parts of the body. Ingesting nicotine can cause nausea, vomiting, abdominal pain, increased salivation, diarrhoea, sweating, headache, dizziness, hearing disturbances, increased heart rate, abnormal beating of the heart, chest palpitations, shortness of breath, and allergic reactions<sup>148 149 150</sup>.

Ingesting nicotine over a prolonged time can lead to hardening of the arterial walls and raised blood pressure, which can alter the heart's functioning and can raise the risk of heart attacks<sup>151 152 153 154</sup>. To date, research indicates that ENDS may increase the risk of heart disease<sup>155 156</sup>.

Research indicates that nicotine exposure in-utero may harm the developing foetus and may affect foetal brain development<sup>157 158 159 160</sup>. Other studies suggest that nicotine consumption in children and teenagers may also affect brain development<sup>161 162 163</sup>.

**(iv) Safety of inhaling high concentrations of nicotine:**

In high concentrations, nicotine is toxic and it is possible to overdose with it<sup>164 165</sup>. Nicotine poisoning can be fatal: depending on body weight, 60-90mg of nicotine in its liquid form is lethal for adults, 10mg is lethal for young children, and less than this is lethal for babies<sup>166 167 168 169 170</sup>.

Symptoms of nicotine poisoning include confusion, rapid or irregular heart rate, high blood pressure, respiratory failure, seizures, convulsions, tremors, nausea, and vomiting<sup>171</sup>. There have been reports of people experiencing seizures as a result of nicotine overdose through using ENDS, particularly amongst teenagers and young adults<sup>172</sup>.

Specialists in respiratory health have expressed concerns about the safety of ingesting very high doses of nicotine deeply into the lungs through ENDS products<sup>173</sup>. Anything over 18mg per millilitre is considered a high strength ENDS product<sup>174</sup>. Although other products, such as nicotine replacement therapies like patches, can also deliver high doses of nicotine through other routes such as the skin, the consensus following years of pharmaceutical testing, research and monitoring is that these products are considered safe to use with guidance<sup>175 176</sup>. However, the same cannot yet be concluded about ENDS products, as the products are still too new<sup>177 178</sup>.

**(v) Safety of the ENDS devices themselves:**

There have been reports of ENDS products catching fire and/or exploding, causing injuries to the person using them and to others<sup>179 180 181</sup>. The causes of these incidents are not yet clear. They may be related to electrical safety, malfunctions in the chargers of the products, the batteries of the products, the heating elements of the products, tampering with the products, and/or poor quality-control production methods<sup>182 183 184</sup>.

**(vi) Safety of passive inhalation of ENDS vapour:**

As it is not yet clear what is being inhaled in ENDS vapour, and whether these ingredients are safe to inhale, is it also not yet clear what ingredients are being inhaled passively by others and whether passive inhalation is safe<sup>185 186</sup>. However, there are concerns that second-hand inhalation of ENDS vapour may be exposing others to harmful ingredients, although there is not yet research in this area<sup>187 188</sup>. Vaping in confined spaces would raise the concentration of any harmful ingredients present in vapour clouds<sup>189</sup>.

## Does Big Tobacco have a role in vaping?

Despite declines in the sales of conventional cigarettes in some countries, such as the USA and Aotearoa New Zealand, and declines in the number of people who smoke conventional cigarettes in various countries, the tobacco industry has shown an upward trajectory in profits over the last twenty years – for example, generating USD 10 billion in 2005 and USD 18.4 billion in 2016 in the USA<sup>190</sup>.

Big Tobacco, or 'Big Nicotine', companies such as Philip Morris

International (PMI), British American Tobacco (BAT), Altria, Imperial Brands Plc, and Japan Tobacco International are invested in the production and marketing of ENDS products<sup>191 192 193 194 195</sup>. In 2018 in the USA, the top twenty-five ENDS product manufacturers earned USD 2.5 billion in sales, with 96% of these sales made from brands owned in whole or in part by Big Tobacco/Big Nicotine<sup>196</sup>. Altria, the producer and marketer of the conventional cigarette brand Marlboro, invested a USD 12.8 billion stake in ENDS products and, in 2019, made an Altria executive a CEO of their production<sup>197</sup>.

Big Tobacco / Big Nicotine have a business presence in Aotearoa New Zealand. Imperial Brands Plc is registered to a Petone-based address in Lower Hutt; British American Tobacco (BAT) to Parnell, Auckland; Phillip Morris International (PMI, which has connections to Altria) to CBD, Auckland<sup>198 199 200</sup>. Japan Tobacco International indicates that it also has a business presence in Aotearoa New Zealand<sup>201</sup>.

The use of underhand and unethical business strategies by Big Tobacco in the production, marketing and sales of their products and the generation of their profits is documented, for example: their role in the spread of scientific misinformation and disinformation about the safety of smoking conventional cigarettes, and the systematic covering up of unfavourable research findings about smoking conventional cigarettes, defrauding consumers about their health risks; the recruitment of PR firms to aid the strategy of establishing sophisticated "narratives of doubt" about the safety of smoking; undermining the integrity of scientific research, for example by funding research groups, sponsoring issues of high-impact research journals, and displaying a lack of transparency regarding conflicts of interest; incentivising people to use their products, for example, by offering health insurance; offering services to major healthcare providers, such as the National Health Service in the UK; implementing manipulative, socially exploitative media / social media campaigns designed to undermine informed decision making in parliament and communities; lobbying and donating to groups and politicians who would oppose greater regulations on the sale of conventional cigarettes; targeting geo-politically unstable and vulnerable countries and states in order to grow profits, such as Somalia, South Sudan, Democratic Republic of Congo, Iraq, and Syria; allegations of serious fraud and intimidation; targeting and exploiting resource-poor communities, such as the British American Tobacco built-and-funded town of Auzi in DRC in the 1950s; being implicated in child labour in the production and cultivation of tobacco<sup>202 203 204 205 206 207 208 209 210 211 212 213 214</sup>.

There are concerns that underhand and unethical strategies may be repeated, or already are being repeated, by Big Tobacco/Big Nicotine in the production and marketing of ENDS products, under the guise of refreshed PR narratives<sup>215</sup>.

## What is the current law regulating ENDS products?

Manatū Hauora Ministry of Health Vaping Regulatory Authority is responsible for the regulation of ENDS products and retailers<sup>216</sup>.

ENDS products and their supply and use are regulated under

the Smokefree Environments and Regulating Products (Vaping) Amendment Act 2020<sup>217</sup>. The Act requires all workplaces, including restaurants and bars, to be smoke-free and vape-free, as well as all buildings and grounds of schools, early childhood education centres, and care centres<sup>218</sup>. The Act prohibits the direct or indirect supply of ENDS products to anyone under 18 years of age. It also sets the safety standards that ENDS products must meet before sale<sup>219</sup>.

Recent changes to the Act stipulate that new specialist vape shops cannot be set up within 300 metres of schools and marae; that ENDS products must have bland packaging and bland descriptions, in contrast to the current evocative packaging and descriptions that are available; that the maximum strength in single-use ENDS products be reduced; that the maximum nicotine salt strength be reduced; that all ENDS products have removable batteries and child-safety mechanisms<sup>220 221 222</sup>.

## Conclusion

The consensus across health-oriented agencies and organisations is if you do not already use nicotine, do not take up vaping and if you do vape, you should look to eventually stopping. ENDS are not risk-free. The risk they pose is context-dependent and is likely to vary from person to person. In contrast to conventional cigarettes, ENDS are a relatively new product and research into them is still being carried out. It is not yet clear exactly what ingredients are being inhaled in ENDS vapour, and what effect these ingredients may or may not have on health and wellbeing. Because conditions such as respiratory and heart diseases can take many years to show themselves, more research, and more time, is needed to discern, in detail, the effects ENDS products have for different people in different situations at different points in their lives.

## Endnotes

1. <https://www.who.int/news-room/questions-and-answers/item/tobacco-e-cigarettes>
2. <https://www.pmi.com/smoke-free-products>
3. [https://www.bat.com/group/sites/UK\\_9D9KCY.nsf/vwPagesWebLive/DOAWUGND](https://www.bat.com/group/sites/UK_9D9KCY.nsf/vwPagesWebLive/DOAWUGND)
4. <https://www.altria.com/moving-beyond-smoking/smoke-free-product-platforms?src=topnav>
5. <https://www.imperialbrandspc.com/brands-of-choice>
6. <https://www.jti.com/about-us/what-we-do/our-reduced-risk-products>
7. <https://vapingfacts.health.nz/the-facts-of-vaping/what-is-vaping/>
8. It is possible to vape without nicotine, as some vapes are marketed as nicotine-free. However, although marketed as nicotine-free, some vapes have been found to contain nicotine.
9. <https://www.pmi.com/smoke-free-products/heated-tobacco-products>
10. [https://www.bat.com/group/sites/UK\\_9D9KCY.nsf/vwPagesWebLive/DOAWUGNJ](https://www.bat.com/group/sites/UK_9D9KCY.nsf/vwPagesWebLive/DOAWUGNJ)
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15. <https://www.imperialbrandspc.com/brands-of-choice>
16. <https://vapingfacts.health.nz/the-facts-of-vaping/what-is-vaping/>
17. Such as: "Geekvape has taken direct-to-lung (DTL) vape devices to a whole new level with the release of the T200 Vape Kit. Heralded as 'the smartest touch vape device yet', the T200 boasts an array of industry-leading technology including a 2.4-inch touch screen display, equipped with four dynamic user interfaces. Navigating your device and adjusting your settings has never been so easy; with the touch of a finger, you can now customise your T200 precisely to suit your vaping preferences." Or "Indulge in the tantalising combination of sweet and sour with solo Sour Apple. With every puff, sour apples' crisp and tangy flavour delivers a delightful balance of tartness and sweetness. Immerse yourself in the mouthwatering juiciness of freshly picked apples as the sour notes awaken your taste buds. Solo is a lightweight, disposable vape device that comes fully charged and has up to 1000 puffs in the regular size solo and 2800 puffs in solo Plus. For a pod-free, hassle-free vaping experience that works with your lifestyle for easy vaping anywhere, any time."
18. <https://www.fda.gov/tobacco-products/products-ingredients-components/e-cigarettes-vapes-and-other-electronic-nicotine-delivery-systems-ends>
19. <https://vapingfacts.health.nz/the-facts-of-vaping/what-is-vaping/>
20. <https://www.asthmafoundation.org.nz/your-health/e-cigarettes-and-vaping/vaping-some-more-facts>
21. <https://www.vapo.co.nz/>
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35. <https://www.vapo.co.nz/collections/all-e-liquid>
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37. <https://dontgetsucked.in.co.nz/whats-in-a-vape/>
38. <https://vapingfacts.health.nz/vaping-to-quit-smoking/what-vape-should-i-get/what-vape-liquid-should-i-get.html>
39. <https://vapingfacts.health.nz/vaping-to-quit-smoking/what-vape-should-i-get/what-vape-liquid-should-i-get.html>
40. <https://www.blu.com/en-GB/blog/liquids-and-flavours/freebase-vs-salt-nic-whats-the-difference>
41. <https://vapingfacts.health.nz/the-facts-of-vaping/what-is-vaping/>
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43. <https://www.nicorette.co.nz/products>
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