

# Vaping nicotine to quit smoking

## Everything a GP needs to know

### Executive summary

- Vaping nicotine is an approved second-line quitting aid for smokers who are unable to quit
- Vaping is the most popular quitting aid and is more effective than other pharmacotherapies
- Long-term use is likely to be at least 95% less harmful than smoking
- The RACGP guidelines now support the use of vaping for smokers who have failed to quit with other treatments and who raise the subject with their GP
- Patients should be informed about the risks and benefits of vaping
- Only short-term use is recommended but long-term use is safer than relapsing to smoking
- Australian vape shops can provide expert advice and other supplies except nicotine
- Patients need a prescription from their GP to import and use nicotine legally
- It is legal and simple for GPs to write nicotine prescriptions

### RACGP supports vaping

The recently updated [Royal Australian College of General Practitioners](#)' smoking cessation guidelines [1] state:

"...for people who have tried to achieve smoking cessation with approved pharmacotherapies but failed, but who are still motivated to quit smoking and have brought up e-cigarette usage with their healthcare practitioner, nicotine containing e-cigarettes may be a reasonable intervention to recommend"

### What is vaping?

Vaping is a less harmful alternative for smokers who are unable to quit smoking or nicotine with the available treatments. For many it is a long-term substitute. For others it is a stepping stone to quitting nicotine altogether.

Personal vaporisers (e-cigarettes) heat a liquid nicotine solution into an aerosol which is inhaled and exhaled as a visible mist (known as 'vaping'). Vaping delivers nicotine and replicates smoking behaviour, with the familiar hand-to-mouth action, 'throat hit' and the physical sensation of 'smoke' going into the lungs.

All vaporisers consist of a battery (usually rechargeable), a tank or reservoir to hold the e-liquid and a coil or heating element to heat the liquid to create the vapour.

### Is vaping safe?

Vaping is not risk-free, but there is overwhelming scientific agreement that it is far less harmful than smoking. The UK Royal College of Physicians [2] and Public Health England [3] have concluded that the long-term health risk from vaping is unlikely to exceed 5% of the harm from smoking tobacco.

This is because vaping products do not contain tobacco or produce smoke and it is the thousands of toxic chemical and carcinogens in smoke from burning tobacco which cause almost all the death and disease from smoking.

Nicotine has relatively minor adverse health effects. It does not cause cancer or lung disease and is not a major cause of cardiovascular disease.

### Is vaping an effective quitting aid?

There is now convincing scientific evidence that vaping can help people quit smoking. [4] Two large randomised trials found that vaping was nearly twice as effective as nicotine patches and gums in helping smokers to quit. Large population studies have found that vaping is associated with greater quitting success and falling smoking rates.

## How much does it cost?

Vaping is about 90% cheaper than smoking. This is especially important for low socio-economic and vulnerable groups that suffer considerable financial stress from smoking.



## Is vaping legal?

It is legal to possess and use liquid nicotine for vaping if the user has a prescription from a registered Australian medical practitioner. The sale of nicotine liquid is banned in Australia. However, under the [TGA Personal Importation Scheme](#), vapers can legally import up to 3-months' supply of nicotine liquid at a time for a therapeutic purposes, such as to quit smoking or to avoid relapse. It is legal for GPs to write prescriptions for nicotine liquid if clinically appropriate.

## Use in clinical practice

### 1. Select a vaping device

There are 4 main types of vaporiser. Selection is generally based on ease of use, similarity to a cigarette, nicotine delivery, size and cost.

<h4>'Cigalikes'</h4>  <p>Cigalikes are designed to look and feel like a cigarette. They consist of a battery and a prefilled cartridge of e-liquid.</p> <p>Some models are disposable. Others use a rechargeable battery and replaceable cartridges. Cigalikes do not deliver as much nicotine as other models.</p>	<h4>Pod models</h4>  <p>Pod models are easy to use and can deliver high levels of nicotine. Most have no buttons and are breath activated. All use a rechargeable battery. They generally do not create large clouds.</p> <ul style="list-style-type: none"><li>• Prefilled models use sealed pods prefilled with nicotine e-liquid. Pods are replaced when empty.</li><li>• Refillable models use refillable pods. When empty, the pod is refilled by the user.</li></ul> 
 <p>Mouthpiece</p> <p>Tank and coil</p> <p>Fire button</p> <p>Rechargeable battery</p> <h4>Pen-style tank models</h4> <p>These devices are more complex to use and maintain than cigalikes and pod models. They can deliver high levels of nicotine and create larger clouds.</p> <p>The tank is refilled as required and the heating coil needs to be replaced every 2-3 weeks when it produces a burnt taste and reduced vapour.</p> <p>Tank models are best purchased from a local vape shop where you will get advice on correct use and ongoing support.</p>	 <h4>Advanced tank models</h4> <p>More advanced models or 'mods' are larger and more complex to use.</p> <p>They have larger batteries with LED screens, replaceable parts and adjustable settings.</p> <p>Advanced models are not generally recommended for new vapers.</p>

## 2. Select a nicotine concentration

E-liquids generally consist of nicotine and flavouring dissolved in propylene glycol (PG) and vegetable glycerin (VG).

Nicotine strength is measured either in mg/ml (usually) or as a percentage: 12mg/ml = 1.2%. Not all users need nicotine. For some, the 'smoking' ritual is sufficiently satisfying. Over time, vapers usually reduce their nicotine concentration.

There are two types of nicotine used for vaping:

- 'Freebase nicotine'. Used in tanks models and cigalikes, typically in a range of 3-24mg/ml. The concentration used depends on the battery power (bigger batteries, lower concentration) and nicotine dependence.
- 'Nicotine salts'. Used in pod models, typically in the range of 20-50mg/ml. Nicotine salts are less harsh on the throat and are delivered faster to the brain. Stronger concentrations are needed due to the small battery size of pod devices.

Beginners usually purchase pre-mixed nicotine e-liquids. Experienced users often mix their own, using concentrated nicotine with locally-sourced flavourings.

### Choosing the right nicotine concentration

The initial concentration of nicotine depends on 4 factors:

- How heavily the patients smokes
- The type of device used
- The puffing technique and frequency
- Whether freebase nicotine or nicotine salt are used

Selecting a starting concentration is not an exact science and is often a matter of trial and error. Beginners will often start with a higher nicotine concentration to avoid nicotine withdrawal and may reduce later. Here are some guidelines:

#### Pod models

Pods models use higher nicotine concentrations because they have small batteries and release small amounts of vapour.

Range	Heavy smoker	Lighter smoker
20-50mg/ml nicotine	50mg/ml nicotine	20-30mg/ml nicotine

#### Refillable tank models

Tank models generally have a more powerful battery and use lower concentrations of nicotine. As a rough guide:

Range	Average smoker	Heavier smoker
3-24mg/ml nicotine	6-12 mg/ml nicotine	18-24mg/ml nicotine

If in doubt, it is generally better to use a stronger nicotine concentration to provide adequate nicotine replacement. If you are not sure whether to recommend the 6 or 12mg/ml, go with the 12mg/ml. If it is too strong, the user can adjust by puffing less often and less deeply.

You can specify a range of concentrations on the prescription, for example **6-18mg/ml** prn, so the patient can experiment to find their preferred concentration. This also allows the patient to gradually reduce nicotine concentrations to wean off nicotine at a later time.

## 3. Where to buy vaping products

### Hardware and nicotine-free liquids

Australian vape shops sell vaporisers, coils, spare parts and nicotine-free liquids. They are mostly staffed by experienced vapers and are a valuable source of advice and support for new vapers and health professionals. Lists of Aussie vape shops are available at [www.aussievapestores.com](http://www.aussievapestores.com) and [www.vapetrotter.com](http://www.vapetrotter.com).

### Nicotine liquid

Nicotine liquid must be purchased from overseas. Popular and reliable websites in New Zealand include

[www.mixologyvape.co.nz](http://www.mixologyvape.co.nz) | [www.vapoureyes.co.nz](http://www.vapoureyes.co.nz) | <https://soulblu.co.nz> | [www.nzvapor.com](http://www.nzvapor.com) | [www.wickandwireco.com](http://www.wickandwireco.com)

A popular nicotine cigalike model can be purchased from [www.vaperempire.com.au](http://www.vaperempire.com.au)

## 4. How to write a nicotine prescription

Under the [TGA Personal Importation Scheme](#), it is legal for your patients to import and use nicotine liquid if they have a nicotine prescription. The Scheme allows the importation of 3 months' supply at one time for personal use for a therapeutic purpose (to quit smoking or to prevent relapse) with a maximum of 15 months' supply imported in a 12 month period (ie up to 3 repeats).

Prescriptions are non-PBS and can be written by hand. If using medical software, you can create a template for computer scripts eg for Best Practice: setup - custom preparations - add.

There is no requirement to present the prescription to the retailer when ordering. Prescription should be kept in a safe place in case requested by authorities. It is a good idea to keep a photo of the prescription on a smartphone.

All prescriptions need to include

1. Nicotine concentration (other ingredients such as flavouring, PG, VG not required)
2. Volume of liquid (or number of pods) for 3 months supply
3. Number of repeats (up to 3)

### Prescriptions for specific models




#### Tank models

- Nicotine concentration typically 3-24mg/ml (0.3-2.4%)
- Typical daily volume used: 2-5ml
- Example: a user of 12mg/ml nicotine, using 5ml per day requires 450 ml + 3 repeats for 1 year

#### Prescription

- Nicotine liquid 12mg/ml (or a range eg 6-18mg/ml prn)
- 450ml. Repeat x3. For vaping prn



#### Prefilled pod models

- Nicotine concentration typically 20-50mg/ml (2-5%), 'nicotine salt'
- Typical daily use 0.5-2 pods
- Example: a user of 1 pod daily requires 90 pods + 3 repeats for 1 year

#### Prescription

- Nicotine pods 50 mg/ml (or a range eg 20-50mg/ml prn)
- 90 pods. Repeat x3. For vaping prn



#### Refillable pod models

- Nicotine concentration typically 20-50mg/ml (2-5%) (nicotine salt)
- Typical daily volume: 1-3ml
- Example: a user of 25mg/ml nicotine, using 2ml per day requires 180ml + 3 repeats for 1 year (round up to 200ml (15% rounding allowed))

#### Prescription

- Nicotine liquid 2mg/ml (or a range eg 20-50mg/ml)
- 200ml. Repeat x3. For vaping prn

#### Concentrated nicotine (experienced users only)

100mg/ml nicotine for DIY mixing with PG, VG and flavourings.

- Example: a user of 10mls per day of 12mg/ml nicotine e-liquid
- Daily requirement: 120mg of nicotine
- 3 months supply: 90 days x120mg per day = 10,800mg = 108ml of 100mg/ml nicotine.
- Round up to 120ml (15% rounding allowed)

#### Prescription

- Nicotine liquid 100mg/ml
- 120ml. Repeat x3. For vaping prn

## 5. Counselling

GPs should recommend approved first-line smoking cessation medications for nicotine-dependent smokers wishing to quit. [1] However, vaping can be suggested for smokers who have failed to quit with these therapies. Patients should be informed about the risks and benefits and instructed on correct use.

Counselling	Information
<b>Rationale</b>	<ul style="list-style-type: none"> <li>• A safer alternative to smoking</li> <li>• Delivers nicotine and 'a smoking-like experience'</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>• Not risk-free but much safer than smoking</li> <li>• Long-term health effects are unknown</li> <li>• No tested and approved e-cigarette products are available</li> </ul>
<b>Correct use</b>	<ul style="list-style-type: none"> <li>• Take longer puffs, about 3 to 4 seconds each</li> <li>• 10-15 puffs like a cigarette or a puff or two prn</li> <li>• A little slower to deliver a nicotine hit than cigarettes</li> <li>• Daily use is more effective</li> <li>• Try different devices, flavours or nicotine strengths until you find the combination you like</li> </ul>
<b>Duration of use</b>	<ul style="list-style-type: none"> <li>• Stop smoking when ready</li> <li>• Only short-term use should be recommended</li> <li>• However, long-term use is safer than relapsing to smoking</li> <li>• Long-term dual use (ie with continued smoking) should be avoided</li> <li>• Gradually reducing nicotine strength may help</li> <li>• Satisfaction increases with practice</li> </ul>
<b>Counselling and support</b>	<ul style="list-style-type: none"> <li>• Offer behavioural counselling and support, eg Quitline</li> <li>• Can combine with nicotine patch or varenicline</li> </ul>
<b>Safe use</b>	<ul style="list-style-type: none"> <li>• Use the correct battery charger</li> <li>• Do not leave unattended when charging</li> <li>• Keep nicotine out of reach of children</li> </ul>

## References and resources

- [1] RACGP. Supporting smoking cessation: A guide for health professionals. 2nd edn. RACGP, East Melbourne, Vic: 2019
- [2] Royal College of Physicians. Nicotine without smoke: Tobacco harm reduction. RCP London 2016
- [3] Evidence review of e-cigarettes and heated tobacco products. Public Health England London 2018
- [4] Mendelsohn C, Hall W, Borland R. Could vaping help lower smoking rates in Australia? Drug and Alcohol Review 2020
- [5] Mendelsohn CP. Electronic cigarettes. A guide for discussion with patients. Respiratory MedicineToday 2016
- [6] Mendelsohn CP, Wodak AM. Vaping. Ten Frequently Asked Questions. Respiratory MedicineToday, 2018

For more informaton, please go to [www.athra.org.au](http://www.athra.org.au) and log in under Health Professionals with your AHPRA number.

ATHRA is a registered Australian health promotion charity established by doctors to reduce the harm from smoking in Australia. ATHRA is funded by public donations and has no commercial relationship with any vape or tobacco company.



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