

Smoking and cardiovascular disease

Fact sheet for health professionals

Introduction

Tobacco smoking is a major cause of cardiovascular disease, including coronary heart disease, stroke, aortic aneurysm and peripheral arterial disease.

Even people who smoke just a few cigarettes a day have an increased risk of cardiovascular disease.

Key facts and figures

- Tobacco use is the **leading cause** of preventable death and disease in Australia.¹ In 2019, **10.6% of Victorians** smoked tobacco daily.²

- People who currently smoke have at least **double the risk of many types of cardiovascular disease**, including acute myocardial infarction, cerebrovascular disease and heart failure, compared to people who have never smoked.⁴

People who only smoke a few cigarettes a day (4-6) have almost **double the risk of dying** from cardiovascular disease **compared to people who have never smoked.**

- In 2015, tobacco use was responsible for **9.3% of the burden of disease in Australia. 11.5% of the cardiovascular disease burden** was due to tobacco use.³

- There is a **nonlinear dose response between tobacco smoke exposure and cardiovascular disease.**
A 2018 meta-analysis found that **people who smoke just one cigarette a day have half the risk of developing coronary heart disease and stroke** as people who smoke 20 cigarettes per day.⁵

Learn more at: quit.org.au/generalpractice

How does smoking cause cardiovascular disease?

- Tobacco smoke exposure accelerates atherosclerosis and increases the risk of cardiovascular disease and cardiovascular events via multiple mechanisms.⁶
- Tobacco smoke exposure causes:
 - Inflammation in blood vessels, resulting in narrowing and hardening
 - Injury and impaired functioning of the endothelium, which can restrict coronary blood flow
 - Increased platelet aggregation and activation, effectively making the blood ‘stickier’, which can result in thrombus formation
 - An increase in triglycerides and a decrease in high-density lipoprotein (‘good’) cholesterol
- Other chemicals in tobacco smoke also increase demand on the heart and circulatory system. Carbon monoxide impairs oxygen delivery to the heart, while nicotine can activate the sympathetic nervous system resulting in increased heart rate and blood pressure.

What is the link between smoking and ‘sticky blood’?

Tobacco smoking causes blood to become ‘stickier’ (also known as platelet activation and aggregation)⁷, which can increase the risk of thrombus formation, and in turn lead to an acute myocardial infarction or stroke. Even smoking one cigarette a day can cause a similar level of platelet aggregation as in a person who smokes more heavily.⁸

What is the impact of smoking cessation on a person’s risk of cardiovascular disease?

Upon smoking cessation, the risk of cardiovascular disease falls quickly. After one year, the increased risk halves, and after about 15 to 20 years, the risk is similar to a person who has never smoked.^{9,10,11}

In addition, the 2020 report of the US Surgeon General on smoking cessation concluded that¹²:

- There is sufficient evidence to infer that cessation reduces levels of markers of inflammation and hypercoagulability and leads to rapid improvement in the level of high-density lipoprotein cholesterol.
- There is sufficient evidence to infer that cessation reduces the risk of cardiovascular morbidity and mortality and the burden of disease from cardiovascular disease.

Can people living with cardiovascular disease still benefit from stopping smoking?

The 2020 US Surgeon General report also found that even in patients diagnosed with coronary heart disease, smoking cessation reduces the risk of all-cause mortality and death from cardiac causes and sudden death. Cessation also reduces the risk of new and recurrent cardiac events.¹³

How can I best support my patients to stop smoking?

You can support your patients to stop smoking by providing smoking cessation brief advice, using the Ask, Advise, Help model, included in the RACGP's [Supporting smoking cessation: A guide for health professionals](#). Brief advice promotes cessation and connects people who smoke with evidence-based tobacco dependence treatment (a combination of behavioural intervention through Quitline and pharmacotherapy, if clinically appropriate).

Brief advice can be delivered in as little as 3-5 minutes via the following steps:

- **Ask** all patients about their smoking status and document this in their medical record
- **Advise** all patients who smoke to quit in a clear, non-confrontational, personalised way, and advise of the most effective way to quit
- **Help** all patients who smoke to quit by offering an opt-out referral for behavioural intervention through Quitline (13 7848) and by prescribing medication (such as nicotine replacement therapy), as clinically appropriate.

What is the Quitline and how can it help my patients?

- **Quitline (13 7848)** is an evidence-based telephone counselling service. Highly skilled Quitline counsellors deliver behavioural interventions over multiple sessions to help people plan, make and sustain a quit attempt.
- **Aboriginal Quitline** is also available to support Aboriginal and Torres Strait Islander people who smoke.
- Making a proactive referral to Quitline increases the likelihood of patients enrolling in treatment.¹⁴ Refer your patients using Quit's online referral form: quit.org.au/referral-form/
- Quitline also provides information and advice to health professionals about smoking cessation.

Is it safe for people with cardiovascular disease to use nicotine replacement therapy (NRT)?

- NRT can be safely used in patients with stable cardiovascular disease. In patients who have had a recent cardiovascular event, NRT can be considered under medical supervision.¹⁵
- For more information, refer to the RACGP's [Supporting smoking cessation: A guide for health professionals](#).

Where can I find more information for myself or my patients?

- Quit has developed brief advice online training and a range of resources for you, your practice and your patients. Access these at: quit.org.au/generalpractice
- The Quit website has a range of tools, tips and information to support your patients to stop smoking. Visit quit.org.au
- For more information about the link between smoking and cardiovascular disease, visit: www.tobaccoinaustralia.org.au/chapter-3-health-effects/3-1-smoking-and-cardiovascular-disease
- For information and updates about tobacco use, follow Quit on [Twitter](#) or [LinkedIn](#).

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