

Smoking and cancer outcomes



In people with cancer, smoking increases the risk of overall mortality, cancer-specific mortality and second primary cancers.¹



People with cancer who smoke are at a higher risk of recurrence, have poorer response to treatment and increased treatment-related toxicity.¹



Across multiple types of cancers, smoking cessation can improve survival compared with continued smoking.²



Help your patients quit smoking even after a cancer diagnosis by offering [referral to Quitline](https://quitcentre.org.au/referral-form) (quitcentre.org.au/referral-form) and facilitating access to pharmacotherapy, if clinically appropriate.

Key facts and figures

- 1 Tobacco use is one of the leading risk factors for the burden of disease in Australia, contributing to 7.6% of disease burden in 2024.³ In 2022- 2023, 8.3% of people smoked tobacco daily.⁴
- 2 Tobacco use contributed to 15% of the total burden from cancers in Australia in 2024.⁵
- 3 At the time of cancer diagnosis, **20-30%** of people self-report current smoking.²
Compared with people who have never smoked, people with cancer who smoke have a **51% increased risk of overall mortality** and a **61% increased risk of cancer-related mortality**.¹
- 4 Most people who smoke **want** to quit and have already tried to quit.⁴ The motivation and interest to quit may increase following a cancer diagnosis.⁶ There is evidence that brief advice from a health professional prompts a person who smokes to make a quit attempt.⁷

What is the link between smoking and cancer outcomes?

Continued smoking after a cancer diagnosis has an adverse impact on health outcomes in people living with cancer and cancer survivors. Current smoking in people with cancer increases their risk of overall mortality, cancer-related mortality as well as the risk of developing a second primary cancer. In addition, people with cancer who smoke are at a higher risk of recurrence, have poorer response to treatment and increased treatment-related toxicity.¹

How does smoking lead to reduced response to cancer treatment?

While many studies have shown the biological mechanisms by which smoking causes cancer, fewer studies have evaluated the effect of smoking on existing cancer cells. What is known though is that smoking affects cancer cell signalling, which leads to cell proliferation, and decreased response to chemotherapy and radiotherapy.⁸

A 2018 review published by the World Health Organization identified some of the mechanisms by which smoking affects outcomes of cancer treatment. These include increased cancer cell proliferation, migration and metastasis, acceleration of systemic clearance of cancer therapies (potentially impacting efficacy of cancer treatment), increased complications associated with treatment, and an increased risk of co-morbidities related to tobacco.^{9, 10}



A person with cancer who currently smokes **can improve their prognosis** by stopping smoking at any time.¹

What is the impact of smoking cessation on people with cancer?

Compared with continued smoking, smoking cessation after a cancer diagnosis significantly reduces all-cause mortality, with a median reduction of

45%

This benefit has been consistently shown across different cancer sites and types of treatment.^{2,11}

The magnitude of effect of smoking cessation compared with continued smoking after cancer diagnosis on overall mortality is substantial and may even be comparable with the effect size of some cancer therapies.¹

Where does smoking cessation fit within cancer care?

Smoking cessation should be a part of the continuum of cancer care, from symptom finding through to diagnosis and follow-up. Many peak international and Australian cancer organisations call for smoking cessation treatment to be offered as a standard part of cancer care.^{2,12-14}

Smoking cessation should be perceived as an effect modifier of treatment outcomes.¹¹ Therefore, smoking cessation treatment is a priority in cancer care. It is never too late for people with cancer to stop smoking and experience health benefits.¹²

How can I best support my patients to stop smoking?

You can support your patients to stop smoking by using the Ask, Advise, Help (AAH) model. The AAH model promotes cessation and connects people who smoke with evidence-based tobacco dependence treatment (a combination of multi-session behavioural intervention through Quitline and pharmacotherapy, if clinically appropriate).

AAH can be utilised at every clinically appropriate opportunity, using the following steps:

Ask

Ask all patients about their smoking status and document this in their medical record.

Advise

Advise all patients who smoke to quit in a clear, non-confrontational, personalised way, and advise of the most effective way to quit.

Help

Help all patients who smoke to quit by offering an opt-out referral for behavioural intervention through Quitline (quitcentre.org.au/referral-form) and by facilitating access to pharmacotherapy, if clinically appropriate.

What is Quitline and how can it help my patients?



Quitline (13 7848) is a confidential, evidence-based telephone counselling service. Professional Quitline counsellors deliver counselling over multiple sessions to help people plan, make and sustain a quit attempt.



Quitline is tailored to meet the needs of priority populations including patients living with mental illness, young people and throughout pregnancy. Quitline has Aboriginal and/or Torres Strait Islander counsellors, and can assist people with hearing or speech impairment, or people needing an interpreter.



Making a proactive referral to Quitline increases the likelihood of patients enrolling in treatment.¹⁵ Refer your patients: quitcentre.org.au/referral-form



Quitline also provides information and advice to health professionals about smoking cessation.

Where can I find more information?

Quit Centre has developed online training and a range of resources. **Access these at:** quitcentre.org.au

For more information about the link between smoking and cancer, **visit:** tobaccoinaustralia.org.au/chapter-3-health-effects/3-3-smoking-and-cancer

For information and updates, follow Quit Centre on LinkedIn



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