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Article *in* Australian Journal of Physiotherapy · October 2020

DOI: 10.1016/j.jphys.2020.09.007

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Editorial

The role of physiotherapists in smoking cessation

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The number of people who smoke tobacco is projected to be over 1.1 billion globally in 2025.[1] Smoking cessation advice and support offered by health professionals continues to play an important role in motivating people to quit.[2] Clinical smoking cessation guidelines for health professionals have existed since the 1990s and include the widely recommended 5As model: Ask about smoking status, Advise briefly to quit, Assess tobacco dependence and motivation to quit, Assist with support and medication, Arrange follow-up.[3–6] However, health professionals have consistently reported numerous barriers to implementing these guidelines: lack of time and administrative support; lack of knowledge and training; low confidence in personal skills; perception that cessation interventions are ineffective; and belief that cessation will be addressed by another member of the patient's healthcare team.[5,7–9] Therefore, smoking cessation guidelines have been revised to address these barriers and in response to: a greater understanding of the behavioural, physiological and social determinants of tobacco dependence and nicotine addiction; the advent of e-cigarettes (and heat-not-burn devices); and advances in cessation medications and interventions.[10–14]

It is internationally recognised that physiotherapists are in an excellent position to implement smoking cessation guidelines. This is due to: their educational background; their scope of practice across the lifespan and in diverse healthcare areas; and the extended time and trusting relationships they typically have with patients, families and carers.[15–17] In addition, the public expect physiotherapists to be important advocates for smoking cessation, healthy eating and physical activity.[18–21] Yet, there is a longstanding lack of formal university, professional or workplace education for physiotherapists on how to effectively promote smoking cessation. This negatively impacts their ability and self-efficacy to initiate cessation conversations and implement cessation interventions; therefore, like many other health professionals, physiotherapists do not routinely implement the 5As model.[15,22–26] While intensive smoking cessation interventions (such as the 5As model) are widely recognised as the best method to help a person sustain long-term abstinence, brief health professional advice is effective for engaging patients in a quit attempt.[3,27] This editorial discusses how simpler three-step brief intervention models can help physiotherapists to more routinely embed evidence-based smoking cessation guidelines into their clinical practice.[12]

Three-step intervention models for smoking cessation

A variety of three-step brief intervention models have been adopted in the last 10 years in the United Kingdom (UK), the United States (US), Canada, Australia and New Zealand. The various three-step models are similar in content and were designed for health professionals to provide a smoking cessation intervention in a brief period of time and in a wide range of settings, without the need for in-depth knowledge of tobacco treatment interventions, cessation counselling and pharmacotherapy.

The AAR model recommends that health professionals Ask about tobacco use, Advise tobacco users to quit, and then Refer patients to an outside entity for assistance and follow-up, such as a telephone quitline, their general practitioner or a smoking cessation specialist. This is recommended in the field of surgery and anaesthesiology in the US and Australia.[28–30] An adaptation to the AAR model in the US is the AAC model (Ask, Advise, Connect), which is recommended for use in primary care and cardiology — the distinction being that the patient is directly 'Connected' to cessation support via a fax or electronic referral by the health professional.[31,32] The ABC model (Ask about smoking status, give Brief advice to quit, and refer the patient to a Cessation resource) is recommended in New Zealand,[10] and the 3As model (Ask, Advise, Act) is recommended for use in the UK and Canada — the latter within the framework of the Ottawa Model of Smoking Cessation.[11,33] The 3As model recommends health professionals: Ask about current and past smoking behaviour; Advise by providing information on consequences of smoking and smoking cessation; and Act by providing options for later or additional support and the stop-smoking medications that are available. In Australia, smoking cessation guidelines have recently been updated for health professionals, and now include the AAH Model, which was developed by Quit Victoria.[12,34] The AAH three-step model is presented in Figure 1 and each element is discussed in detail below with relevance to physiotherapy practice.

AAH model Step 1 – Ask

A physiotherapist should ask about a patient's smoking status and consistently document it in their records. If a patient reports being an ex-smoker, it is also beneficial to ask when they stopped because if it was within 6 months, they may need help to maintain their quit attempt and prevent a relapse.[31] In any of the three-step brief intervention models, it is unnecessary to ask how much a patient smokes, as underreporting is common for fear of stigma or disapproval by a health professional.[35] Whilst it is recommended that a patient is asked about their smoking status and progress of their quit attempt during subsequent physiotherapist-patient consultations, it is not recommended to ask every day of an inpatient stay, for example, as this may negatively affect the physiotherapist-patient relationship and deter a quit attempt.

AAH model Step 2 – Advise

A physiotherapist should advise a patient who smokes to quit. To be more relevant, the physiotherapist should personalise the advice and link the benefits of a quit attempt to the condition being treated. For example, advice given by physiotherapists to patients with

https://doi.org/10.1016/j.jphys.2020.09.007

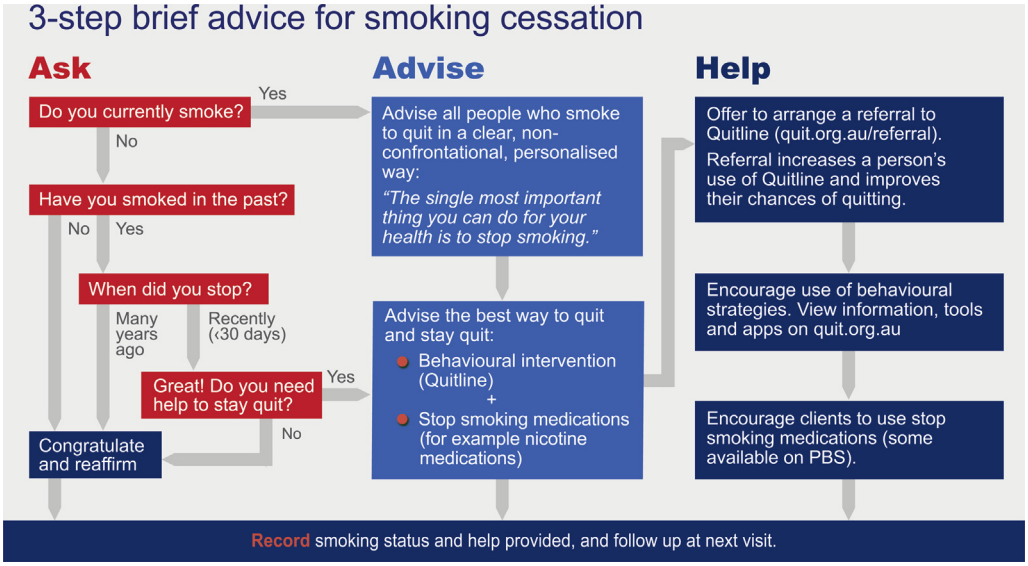

Figure 1. Three-step brief intervention model: Ask, Advise, Help. Reproduced with permission from Quit Victoria, 3 step smoking brief advice – AAH model, Melbourne, 2020. PBS = Pharmaceutical Benefits Scheme.

tobacco-related diseases, such as COPD, cancer and cardiovascular disease, could link the benefits of smoking cessation to: improved lung function; reduced recurrence of cardiovascular events or cancer; and optimised effectiveness of radiotherapy and chemotherapy.[36–39] In the area of surgery, the physiotherapist's preoperative and post-operative advice could link the benefits of smoking cessation to the reduction of pulmonary complications, delayed wound healing and joint infections.[28,40,41] In chronic pain, advice could link the benefits of smoking cessation to reduced pain, as continued smoking interferes with the effectiveness of pain medication and may worsen pain.[42] In acute musculoskeletal injuries, the benefits of quitting can be linked to optimising bone and connective tissue healing.[43,44] In women's health and paediatrics, physiotherapists should emphasise the importance of smoking cessation to reduce the risk of smoking to the foetus, the risk of having a preterm birth, and the adverse effects of second-hand smoke on their child's health.[45–47] Parents should also be advised that cessation will reduce the risk of their children initiating smoking from imitating them, and adolescents should be advised that cessation will help prevent a long-term addiction to nicotine and the negative effects of tobacco smoking.[48,49] It is particularly important to discuss smoking cessation with youth and adults with mental disorders (meeting ICD-10 criteria) and adults with HIV, which are two cohorts that have a higher smoking prevalence than the general population and are keen to stop smoking, yet find quitting and maintaining a quit attempt difficult.[50,51]

Importantly, the AAH model includes advising on the best way for a person to quit or maintain their quit attempt. The brief intervention model does not expect physiotherapists to ask about prior quit attempts or have in-depth knowledge of the effectiveness, availability, precautions and contraindications of current pharmacotherapies. These details are discussed by the smoking cessation support services. The advice a physiotherapist offers should reflect current evidence that pharmacotherapy can help a person adjust to the absence of nicotine by lessening the symptoms of nicotine withdrawal. When coupled with behavioural support, pharmacotherapy is the most effective way to achieve and maintain a quit attempt.[12]

AAH model Step 3 – Help

A physiotherapist should be able to confidently and proactively link their patient to evidence-based specialist cessation support methods (Table 1) by offering to arrange a referral to a free cessation telephone service, encouraging the use of behavioural support strategies, encouraging the use of pharmacotherapy (such as nicotine replacement therapy), and encouraging the use of prescription-only pharmacotherapy (Table 2). Referrals to a telephone cessation service, tobacco treatment specialists, or a stop-smoking service will directly link patients into multi-session behavioural interventions that use motivational interviewing or cognitive behavioural strategies to assist a quit attempt.[27] Pharmacotherapy can also assist a quit attempt, particularly among people who are nicotine dependent, by: either blocking or desensitising nicotine receptors to reduce the positive feelings from nicotine with varenicline or bupropion; or reducing nicotine withdrawal symptoms with nicotine replacement therapy (NRT). Most cessation pharmacotherapy is recommended for 8 to 12 weeks, although use for $\geq$ 6 months may be required. As best-practice cessation treatment is a combination of both pharmacotherapy and behavioural support strategies rather than either pharmacotherapy or behavioural support alone, it is recommended that physiotherapists highlight this to patients.[52]

A patient may choose to quit without pharmacotherapy or behavioural support. Regardless of the cessation method chosen, a physiotherapist should respect and support any quit attempt and be aware that relapses in the first weeks after a quit attempt with any method are common, and can be triggered by alcohol, stress and social situations.[53] As previously mentioned, physiotherapists should continue to ask about their patient's quit attempt as follow-up is an important part of a three-step brief intervention. By repeatedly 'checking in', physiotherapists can proactively offer help to maintain a quit attempt.

It is important to discuss the place of e-cigarettes in smoking cessation. To date, no e-cigarette has been approved for use as a therapeutic aid for quitting tobacco smoking, and they are not offered as an alternate form of NRT in Australia. Systematic reviews and recent randomised trials of e-cigarettes for smoking cessation have shown that, whilst the long term-health effects are unknown, nicotine containing e-cigarettes have led to quit attempts at a similar level as NRT.[54–57] However, there is much debate about e-cigarettes and their potential harm. International clinical guidelines and position statements from professional health associations reflect this debate, with differing interpretations of the current limited evidence on the effectiveness of e-cigarettes for smoking cessation.[5,58–60]

E-cigarettes are battery-powered devices that deliver nicotine in a vapour without tobacco or smoke. The device heats a liquid into an aerosol for inhalation. The liquid is made up of propylene glycol, glycerol and flavours, with or without nicotine, and stored in disposable cartridges, pods or refillable tanks. As e-cigarettes have only been on the consumer market for a short period of time and the devices and e-liquids are continually changing, their long-term safety is unknown.[61] In contrast to the UK, they are not recommended as a

Table 1
Overview of evidence for behavioural strategies for smoking cessation.

Strategy	Advantages	Examples	Evidence
Telephone support	Provides information, advice and behaviour-change counselling. Low cost, widely accessible and can be individually tailored.	Quitline (Australia); iQuitNow (Canada); Quitline (New Zealand); National Smokefree Helpline (UK); 1-800-QUIT-NOW (US)	• Increases chance of quitting, regardless of whether people are motivated to quit or are receiving other methods of support.[63,64] • Proactive telephone services (ie, the counsellor initiates the call) are more effective than reactive services (ie, the 'quitter' initiates the call).[64] • Electronically submitted referrals by health professionals result in higher referral rates compared with paper-based referrals, and an increase in reach among underserved demographic groups.[31,65]
Text messaging (SMS)	SMS cessation interventions are widely and easily accessible, can provide social support and can be a distraction from cravings.	QuitTxt (Australia); SMAT (Canada Cancer Society); TXTBUDDY (UK); SmokefreeTEXT (US)	• May be effective in increasing quit rates and supporting people to quit, particularly as an addition to other forms of cessation support and if the SMS services are interactive or tailored to individual text responses.[64,66,67] • Randomised trials have demonstrated reduced smoking rates amongst patients with heart disease (TEXTME).[68]
Internet interventions	Offer enormous potential to deliver low-cost and high-reach cessation interventions worldwide. Convenient, anonymous and accessible.	www.Quitcoach.org.au (Australia); Smokershelpline.ca (Canada); Quit.org.nz (New Zealand); Quitnow.smokefree.nhs.uk (UK); Smokefree.gov (US)	• May overcome many of the barriers that commonly prevent people from accessing existing cessation services.[69] • Interactive and tailored internet-based interventions, including goals, planning and social support, lead to greater tobacco abstinence at 6 months than other cessation interventions, such as print materials.[70] • Limitations include lack of evidence-based internet interventions and high attrition rate among people with higher levels of depression, greater nicotine dependence, and older age.[69,70]
Mobile device apps	Offer tools to support through a quitting attempt such as self-monitoring, progress tracking, daily reminders and social support.	My QuitBuddy app (Australia); Quit Smoking – QuitNow app (New Zealand); SmokeFree Buddy app (Europe); quitSTART app (US).	• A 2019 Cochrane review found inadequate evidence on the effectiveness of smartphone apps for smoking cessation.[66] While apps have potential advantages, the quality can vary substantially, and few meet clinical guidelines on smoking cessation.[71,72] • Apps that are evidence-based are apparently difficult to find through app store searches.[73]

first-line treatment for smoking cessation in Australia.[12,60] However, transferring or switching completely from tobacco cigarettes to nicotine-containing e-cigarettes is regarded as a reasonable intervention for certain patients: who have tried to achieve smoking cessation with approved pharmacotherapies but failed; who are still motivated to quit smoking; and have asked their healthcare professional about e-cigarettes.[12] As per the AAH model, physiotherapists are not expected to have in-depth knowledge about and engage in discussions about e-cigarettes. They should however, proactively link the patient to the specialist support services, who have the time, knowledge and expertise to discuss e-cigarettes in relation to smoking cessation.

To summarise, the three-step brief intervention models addresse the barriers of limited time, knowledge and self-efficacy of

Table 2
Recommendations regarding pharmacotherapy options for smoking cessation.

Pharmacotherapy	Recommendation	Strength	Certainty
All	In the absence of contraindications, pharmacotherapy (NRT, varenicline or bupropion) is an effective cessation aid when accompanied by behavioural support and should be recommended to all people who smoke and have evidence of nicotine dependence. Choice of pharmacotherapy is based on efficacy, clinical suitability and patient preference.	Strong	High
Nicotine replacement therapy (NRT) (prescription or over-the-counter)	• Consists of purified nicotine that can ameliorate symptoms of nicotine dependence. • Impact varies according to route of administration and rate of nicotine absorption.[13] • Patches provide steady background nicotine level and relieve withdrawal symptoms. • Oral NRT (eg, gum, lozenge, inhaler, mouth spray) provides more immediate nicotine and can be used on a regular basis (eg, hourly) in anticipation of triggers for smoking or as additional protection for breakthrough nicotine cravings. • Combining a nicotine patch with oral NRT has been shown to be more effective than a single form of NRT.[31] • Adverse effects include: insomnia, vivid dreams, skin irritation, redness, itch and rash for NRT patches; nausea for NRT gum and lozenges; and mouth and throat irritation for mouth spray and inhaler. • Can be used on the day of a quit attempt or weeks before.[74] • Effectiveness is optimised when combined with behavioural support.[75] • Safe for people with stable cardiovascular disease.[76]	Strong	Moderate
Varenicline	• Nicotinic receptor partial agonist (acts on acetylcholine receptors) drug that relieves symptoms of craving and withdrawal.[13] • Behavioural support should always be provided with varenicline treatment.[12] • Treatment is by prescription only. • Should be recommended to people who smoke and who have been assessed as clinically suitable for this medication.[77] • Repeat courses can help reduce relapse.[78] • Adverse effects include nausea, sleep disturbance and abnormal dreams. • Those who have had a recent cardiovascular event or have a history of mental illness should report any unusual cardiac symptoms, unusual mood changes, depression and suicidal thoughts and the varenicline ceased until medical review.[12] • Not recommended for women who are pregnant or breastfeeding or for adolescents. • Can be used in combination with NRT and behavioural support to optimise effect.[79]	Strong	High
Bupropion	• Non-nicotine oral therapy that has antagonist activity on the nicotinic receptors and increases brain levels of dopamine and norepinephrine, simulating the effects of nicotine.[13] • Effective in a range of patient populations, including those with depression and cardiac and respiratory diseases (eg, chronic obstructive pulmonary disease).[80] • Should be provided in combination with behavioural support.[12] • Less effective than either varenicline or combination NRT.[81] • Adverse effects include insomnia, headache, dry mouth, nausea, dizziness, anxiety and reduction of the seizure threshold (in those at risk of seizures).	Strong	High

Adapted and reproduced with permission from.[12] All recommendations received a Grade of Recommendations, Assessment, Development and Evaluation (GRADE) rating on the strength of recommendation and the quality of the evidence (certainty).

physiotherapists when trying to support their patients' quit attempts; and enables physiotherapists to confidently start the conversation about smoking cessation with knowledge of the tools to proactively link their patient to evidence-based support and pharmacotherapy. Most people who smoke want to quit and will have made previous quit attempts.[62] It is important that physiotherapists are aware of and acknowledge the difficulties a patient may face when attempting to quit smoking, and recognise the broader influence of the social determinants on health behaviours and individual capacity to make health choices. Physiotherapists should be given access to training in their university education and workplace to improve their self-efficacy and capacity to support smoking cessation using the three-step brief intervention model.

Ethics approval: Not applicable.

Competing interest: Nil.

Source of support: JR is funded by a NHMRC Career Development Fellowship (GNT1143538).

Acknowledgement: Nil.

Provenance: Not invited. Peer reviewed.

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