

# Teenage smoking

## how can the GP help?

Teenage smoking is a very different behaviour to adult smoking. GP intervention is based on the 5As model of Ask, Assess, Advise, Assist and Arrange, modified for the specific needs of adolescents.

A teen-friendly counselling style that leaves the quitting decision to the teenager and focuses on short-term effects is critical.

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In spite of falling smoking rates, tobacco is still the single biggest preventable cause of death and illness in Australia.<sup>1</sup> Of adult smokers, 80% start smoking before 18 years of age.<sup>2</sup> Young people assume that they will stop before they experience any serious health problems. However, nicotine

dependence can develop very quickly and most regular teenage smokers are soon unable to quit.

Most of the health effects of smoking are seen in later life and are due to the cumulative effects of smoking over many years. One-third of teenagers who become regular smokers will eventually die prematurely from smoking-related diseases.<sup>3</sup> Preventing teenagers from becoming regular users of tobacco and assisting them to quit are important goals for general practice.

Teenage smoking is a very different behaviour to adult smoking. This article examines the background to teenage smoking and provides practical advice for GPs on how to intervene with this age group.

### IN SUMMARY

- Many teenage smokers want to quit but are unable to do so because they have little knowledge about the quitting process and many lack the skills to quit.
- Symptoms of nicotine dependence develop in 70% of adolescents before they are smoking daily.
- One-third of teenage smokers will die prematurely from smoking-related diseases.
- GP intervention is based on the 5As model, modified for the special needs of adolescents.
- Nicotine replacement therapy should be discussed if there is nicotine dependence and a readiness to quit.
- Referring the teenager to Quitline or directing them to useful websites (e.g. [www.OxyGen.org.au](http://www.OxyGen.org.au)) should be considered.



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### Smoking rates, frequency and stages

In Australia in 2007, 7.5% of 12- to 19-year-olds smoked compared with 19.4% of the population overall (from the age 14 years onwards).<sup>4</sup> The smoking rate was higher among teenage girls in all age groups from 12 to 19 years: 8.5% of girls and 6.6% of boys smoked.<sup>4</sup>

Smoking becomes more prevalent through adolescence. In 2007, 2.2% of 12- to 15-year-olds, 7.8% of 16- to 17-year-olds and 17.4% of 18- to 19-year-olds smoked. Teenagers smoke less regularly than adults, with 5.6% smoking daily, 1% smoking weekly and 0.9% smoking less frequently than weekly.<sup>4</sup>

Teenagers also smoke fewer cigarettes than adults. On average, boys smoke eight cigarettes per day and girls smoke nine per day.<sup>5</sup> The average age of initiation of smoking in 2007 remained stable at 15.8 years.<sup>4</sup>

A number of stages have been identified in teenage smoking. Initially, there is some experimentation that may be followed by a gradual increase in smoking frequency. The next stage is infrequent but regular smoking, for example, just on social occasions. Once the habit is established, smoking occurs daily or almost daily. However, individual patterns and speed of progression vary.<sup>6</sup>

### Why do young people start smoking?

Research with twin and adoption studies has demonstrated that genetic factors play a major role in the uptake and persistence of smoking. In fact, genetics account for about 50% of the chance of initiating smoking and 70% of the risk of becoming nicotine dependent.<sup>7,8</sup>

Peer smoking is more influential than parental smoking. Teenagers want to be perceived as 'cool' and be included in the peer group. They see smoking as something to share with friends.<sup>9</sup>

Parental smoking triples the likelihood of smoking in teenagers due to both genetic factors and modelling.<sup>10</sup> Smoking rates are greater if both parents smoke and if an older sibling smokes. On the other hand, negative parental attitudes to smoking have a strong protective effect.

Like adults, teenagers smoke in response to stress, to regulate their moods or to control anger. The physiological effects of nicotine can help ease some of the stress and storm of adolescence.<sup>11</sup> There is evidence that some teenagers smoke to assist with weight control, especially females.<sup>12</sup>

Other factors associated with smoking include personality traits (such as risk-taking, poor self-control and rebelliousness), low self-confidence, delinquent behaviour, poor academic achievement, lower parental socioeconomic status and single

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parent homes. Tobacco marketing, sponsorship and media imagery also play important roles.

### Are teenagers dependent on nicotine?

Young people vastly underestimate the addictive potential of nicotine. They commonly believe that nicotine dependence does not develop until after a number of years of smoking, or only once smokers reach adulthood. However, adolescents are more vulnerable to nicotine dependence than adults and develop dependence more quickly and from lower levels of nicotine intake.<sup>13</sup>

Symptoms of nicotine dependence can develop within days of first exposure. Among teenagers who lose control over their tobacco use, 10% do so within two days of inhaling from a cigarette for the first time and 25% within 30 days.<sup>13,14</sup> Symptoms of nicotine dependence develop in 70% of adolescents before they are smoking daily.<sup>14</sup> Girls develop nicotine dependence significantly faster than boys. In one large review of adolescent smoking, two-thirds or more reported some withdrawal symptoms during attempts to quit or reduce smoking.<sup>15</sup>

### Unassisted quit attempts

Many teenagers want to quit smoking and make serious attempts to do so each year. In 2008, 36% of 12- to 17-year-old smokers in NSW schools wanted to quit, with 80% being certain that they would not be smoking in 12 months' time. In the last 12 months, 42% had tried to quit smoking, most on more than one occasion.<sup>16</sup>

In general, young people do not like the idea of getting help to quit, with most indicating that they would prefer to quit by themselves or with the help, support and encouragement of friends.<sup>9</sup> However, most teenagers have little knowledge about the quitting process and many lack the skills to quit.

Quitting attempts are rarely planned.

In most cases young people go 'cold turkey', quitting abruptly without any assistance or medication. Gradually cutting down before quitting is also used.<sup>9</sup> Not surprisingly, successful spontaneous quit rates are very low, in most studies about 3 to 6% over 12 months.<sup>9</sup>

### Is intervention effective?

A variety of interventions have been tested with teenagers in school clinics, the classroom, medical clinics and on the computer. In general, the trials have low recruitment rates, high drop out rates and modest cessation rates.

A meta-analysis of 48 trials in 2006 showed a significant rise in quit rates from 6.24% in the control groups to 9.14% in the active groups (46% increase).<sup>17</sup> The highest quit rates were found in school-based clinics and in classroom interventions.<sup>17</sup>

A 2010 Cochrane review of 24 trials of teenage smokers found approximately a 70% increase in success for the active groups compared with controls.<sup>18</sup> Unfortunately, there are no good quality general practice trials.

### Role of medication

There is currently insufficient evidence to determine whether nicotine replacement therapy (NRT) is effective in adolescents. A 2010 Cochrane review found only one NRT study with at least six months follow up.<sup>18,19</sup> This trial failed to show a significant effect for either the nicotine patch or gum but was underpowered to demonstrate an effect on smoking cessation.<sup>19</sup>

However, the evidence to date gives us no reason to believe that the effectiveness and safety of NRT would be different for teenagers than for any other group of smokers.<sup>18</sup> As a result, Australian guidelines recommend that pharmacotherapy with NRT be considered in adolescents if there is evidence of nicotine dependence and a desire to quit tobacco use.<sup>20,21</sup> Nicotine replacement products are approved from the age of 12 years but compliance

may be an issue in adolescents.

The Cochrane review of adolescent smokers included two studies on bupropion; one tested bupropion as an adjunct to NRT and one trialled bupropion alone. It concluded that the evidence on bupropion appears to suggest that this agent is not effective either alone or in combination with NRT. Bupropion is therefore not recommended on the available evidence.<sup>18</sup>

Varenicline is also not recommended for use in patients under 18 years of age and has not been tested in this age group.

### Role of the GP

Minimal advice by GPs has been shown to be effective in helping adult smokers quit in numerous trials<sup>22</sup> but there is little research evidence with teenage smokers.

Nevertheless, the Smoking Cessation Guidelines for Australian General Practice advise GPs 'to take the opportunity to discuss smoking with young people whenever it arises'.<sup>20</sup> Smoking status should be identified from the age of 10 years if appropriate. GPs often have a long-term relationship with teenagers and are seen as a respected source of health information. As with adults, it is likely that very brief interventions of several minutes duration will be effective.

### How to intervene

In the absence of specific evidence-based guidelines for adolescent smokers and a relative lack of research in this age group, it is reasonable to base intervention on the current Australian guidelines<sup>20,23</sup> with modification for the special needs of adolescents. These guidelines use the 5As model of Ask, Assess, Advise, Assist and Arrange (Table 1). Smokers are assessed according to their readiness to change, and a tailored intervention is then provided depending on which category the smoker belongs to.

A teenager-friendly counselling style needs to incorporate the following elements:<sup>24</sup>

- Confidentiality is a priority in adolescence. Having the parents out of the room will facilitate the discussion.
- Teenagers value their autonomy and resist being pressured or told what to do. Acknowledging that quitting is their choice and providing information and options to assist them is recommended.
- A respectful, nonjudgemental approach is also essential.

**Ask**

All patients from the age of 16 years should be asked if they currently smoke or have done so in the past. Patients should be asked about smoking from the age of 10 years if it is relevant clinically, such as when treating asthma or discussing drug use.

A brief smoking history should be taken. The number of cigarettes per day may be quite variable and a seven-day review may give a more accurate guide. Smoking duration and previous quitting attempts should also be asked about.

Smoking can be a gateway into other drug use and may be a marker of other problems. Therefore, a broader adolescent health assessment may be appropriate. In particular, cannabis use should be asked about, as it is much more likely in tobacco smokers than in non-tobacco smokers. Ongoing use of cannabis can undermine attempts to quit tobacco smoking.

**Assess**

Assess the teenager’s readiness to change Questions such as: ‘How do you feel about your smoking?’ and ‘Are you ready to quit now?’ are useful.<sup>25</sup> Smokers are placed into one of the categories below.

- Not ready. They are not thinking seriously of quitting.
- Unsure. They are ambivalent about smoking and thinking about change in the next six months.
- Ready. They are planning to quit in the next 30 days.

**Table 1. 5As approach to helping teenage smokers quit**

**Ask**

**Ask teenagers if they smoke**

- Ask all teenagers from the age of 16 years or, if clinically relevant, from the age of 10 years.
- Ask teenagers how many cigarettes do they smoke? How long have they been smoking? Any previous quit attempts? Do they smoke cannabis?

**Assess**

**Readiness to change**

- ‘How do you feel about your smoking?’
- ‘Are you ready to quit now?’

**Nicotine dependence (two key questions from the ‘Hooked on nicotine checklist’)**

- Have you ever tried to quit, but couldn’t?
- Do you ever have strong cravings to smoke?

**Barriers to quitting**

- Peers, nicotine addiction, stress.

**Advise**

Help teenagers make their own decision to quit by discussing the issues of immediate importance to them such as appearance or cost and provide relevant health information.

**Assist**

**‘Not ready’ smokers**

- Provide written information and an invitation to return when ready to discuss.

**‘Unsure’ smokers**

- Discuss short-term benefits of quitting, cost savings and barriers to quitting and provide written information.
- Begin brief motivational interviewing.

**‘Ready to quit’ smokers**

- Provide information about smoking and how to quit.
- Set a quit date.
- Discuss coping strategies for withdrawals and cravings.
- Discuss stress and anger management.
- Discuss social skills: how to deal with smoking situations; assertiveness.
- Offer nicotine replacement therapy, if the teenager is nicotine dependent.
- Enquire about support of a friend.
- Alternatively, refer the teenager to Quitline (phone: 137 848) or practice nurse, or direct them to the following websites: [www.OxyGen.org.au](http://www.OxyGen.org.au) or [www.quitcoach.org.au](http://www.quitcoach.org.au).

**Arrange**

**Follow-up within seven days**

- Offer encouragement, review progress, review medication and encourage social support.

In one study of high school students, 35% were not ready, 31% were unsure, 15% were ready, 5% were recent quitters and 9% were in maintenance (quit more than six months ago; Figure 1).<sup>26</sup>

**Assess nicotine dependence**  
Standard adult criteria such as the time to the first cigarette of the day after rising and number of cigarettes smoked are less predictive in teenagers. A useful

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**Table 2. Hooked on nicotine checklist\*<sup>27</sup>**

- Have you ever tried to quit, but couldn't?
- Do you smoke now because it is really hard to quit?
- Have you ever felt like you were addicted to tobacco?
- Do you ever have strong cravings to smoke?
- Have you ever felt like you really needed a cigarette?
- Is it hard to keep from smoking in places where you are not supposed to, like school?

When you tried to stop smoking (or when you haven't used tobacco for a while):

- Did you find it hard to concentrate because you couldn't smoke?
- Did you feel more irritable because you couldn't smoke?
- Did you feel a strong need or urge to smoke?
- Did you feel nervous, restless or anxious because you couldn't smoke?

\* Reproduced with permission from © 2006 Joseph Difranza, Robert J. Wellman, UMass Medical School. Family Medicine & Community Health. Nicotine Checklist (HONC) 2006. Available online at: <http://fmchapps.umassmed.edu/honc>.

guide to nicotine dependence is the 'Hooked on nicotine checklist' (Table 2),<sup>27</sup> which has been specifically developed and validated for adolescents. It focuses on difficulties quitting in the past and the presence of cravings or desire for a cigarette.

#### Assess barriers to quitting

The most common barriers to quitting in adolescents are:<sup>9</sup>

- peers: exposure to peer smoking reduces success
- nicotine addiction
- stress: smoking is often used to relax and regulate mood.

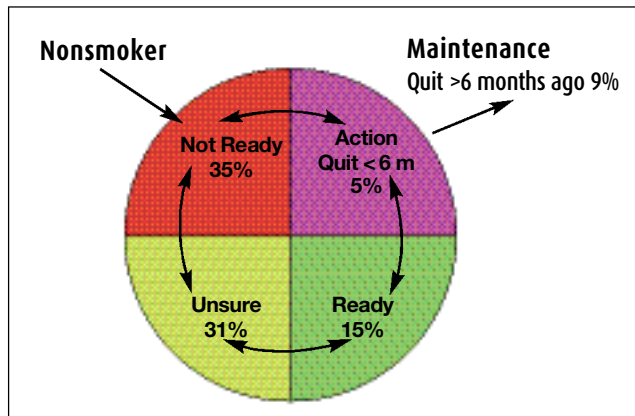


Figure 1. Stages of change model.<sup>26</sup>

#### Advise

Australian guidelines advise GPs to give all smokers a clear message to quit.<sup>20</sup> However, this directive approach does not usually work in teenagers and is often ignored and resented. Instead, try help them make their own decision to quit by focusing on the issues of immediate importance to them, such as appearance, bad breath, yellow teeth, cost, fitness and sexual performance. They may also be concerned about the chemicals and toxins in smoke and the loss of control over their smoking behaviour.

Providing relevant health information can help build motivation to quit. For example, you could say: 'The best thing you can do for your health is to quit smoking. You mentioned earlier that you want to improve your skin. Quitting would certainly help with that.'

#### Assist

Assistance can be provided based on the smoker's readiness to change. Two trials based mainly on the stages of change model (Figure 1) in adolescents increased the long-term success rates by 70% compared with interventions not using the model.<sup>18</sup>

#### 'Not ready' smokers

Smokers who are not ready to quit can be encouraged to think about the habit and their personal health issues. Written information can be offered and an invitation

for them to return if they wish to discuss smoking at a later date.

#### 'Unsure' smokers

Smokers who are unsure about quitting can be motivated by a discussion of the relevant health effects of smoking. Short-term benefits of smoking cessation should be emphasised. Cost savings, the barriers to quitting and the availability of quitting treatments can be discussed and written information provided.

Brief motivational interviewing is a counselling technique to help ambivalent smokers weigh up the pros and cons of smoking and decide whether continuing to smoke is worth it for them (Table 3). It is an empathic, nonconfrontational technique well suited to teenage smokers. Eleven trials using 'motivational enhancement' in adolescents demonstrated improved outcomes by 70% compared with those that did not use this approach.<sup>18</sup>

#### 'Ready to quit' smokers

Smokers who are ready to quit can be offered a range of strategies to assist them to quit. The interventions below have been shown to be effective in teenagers.<sup>9,11,17,18,24,28</sup> A combination of these strategies is more successful than an individual strategy, and at least five sessions is more effective than fewer.

- Cognitive behaviour training. This includes:
  - information about the effects of

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- smoking (especially short-term effects) and how to quit
  - self-monitoring (use of a diary)
  - setting a quit date
  - strategies for coping with withdrawal symptoms, triggers and cravings. Examples include distraction techniques and avoiding high-risk smoking situations
  - skills for coping with stress and anger management.
- Social skills, such as teaching the teenager how to deal with friends who smoke and how to resist the pressure to smoke.
- NRT, if appropriate.
- The support of a friend when quitting.

### Arrange

A follow-up appointment within seven days should be arranged for all teenagers who are trying to quit. Progress and NRT should be reviewed, encouragement offered and social support recommended.

### Where to refer

GPs who do not have enough time or a strong interest in smoking cessation can refer patients to a trained practice nurse or to one of the services described below.

### Quitline

Quitlines (phone: 137 848) have been shown to be effective in adults,<sup>29,30</sup> and GP referral can triple the quit rate compared with usual GP care.<sup>31</sup> However, quitlines have not been specifically evaluated in young smokers.

Nevertheless, Quitline referral is a suitable option for young smokers because it is evidence based, convenient, free and confidential. Quitlines in Australia are youth friendly, with special protocols for callers under 18 years of age. They use appropriate language, provide youth-specific resources and focus on the short-term effects of smoking. Quitline advisors are happy to call young people back on their mobile phones.

### Online services

Web-based services are a promising vehicle for young smokers who are usually computer savvy. They are free, anonymous and can be tailored to the individual. However, there have not been any formal evaluations of the efficacy of internet websites in helping adolescents to quit smoking.<sup>9</sup> These websites include:

- [www.OxyGen.org.au](http://www.OxyGen.org.au). OxyGen is the only Australian website on tobacco dedicated to young people. It helps them explore the facts about smoking and the tobacco industry through interactive content, games and video clips
- [www.quitcoach.org.au](http://www.quitcoach.org.au). The QuitCoach is not specifically designed for adolescents but was tested on adults before going online. Smokers allocated to the QuitCoach were twice as likely to quit compared with those who received printed resources<sup>32</sup>
- [www.quitnow.info.au](http://www.quitnow.info.au) and [www.quit.org.au](http://www.quit.org.au).

### Other quit services

Smoking cessation services for teenagers is a very neglected area. The author is aware of only two dedicated clinics taking referrals. These are:

- The Children's Hospital at Westmead, Sydney, NSW, offers a Service for Addiction Medicine in Youth. This is a free, paediatrician-based service focusing on early intervention for tobacco and other substance abuse (phone: 02 9845 2446)
- Junction Youth Health Services conducts a clinic in Canberra, ACT, and outreach services. These clinics offer free counselling and NRT by a nurse for 12- to 25-year-old people (phone: 02 6232 2523).

### What about prevention by GPs?

There is very little research in strategies that GPs can use to prevent the uptake of smoking in adolescents. However,

**Table 3. Brief motivational interviewing**<sup>\*25</sup>

- Ask: what do you like about smoking?
- Ask: what are the things you don't like about smoking?
- Summarise your understanding of the patient's pros and cons.
- Ask: where does this leave you now?

\* Reproduced with permission from: Richmond RL, Webster I, Elkins L, Mendelsohn C, Rollnick S. Smokescreen for the 1990s: a stop smoking program for general practitioners to use with smokers. 2nd ed. North Sydney: NSW Department of Health; 1991. Courtesy NSW Health.

the following commonsense ideas are worth trying:

- encourage and assist parents and older siblings to quit smoking to remove the influence of modelling at home<sup>10</sup>
- encourage parents to express their disapproval of smoking. Even with parents who smoke, adolescents have a lower risk of smoking if parents express these views<sup>33</sup>
- give your teenage patients who are nonsmokers reinforcement and approval for not smoking
- consider speaking at your local school about smoking. Participatory interventions involving role plays, group discussions and experiments have a greater impact.<sup>9</sup> Resources are available from the Smarter than Smoking project ([www.smarterthansmoking.org.au](http://www.smarterthansmoking.org.au)), OxyGen ([www.OxyGen.org.au](http://www.OxyGen.org.au)) and State Cancer Councils.

### Resources available

The Department of Adolescent Medicine at The Children's Hospital at Westmead, Sydney, NSW, has developed an e-learning program training for clinicians on brief interventions for smoking cessation in adolescents and parents who smoke. GPs can receive a free copy on CD (phone: 02 9845 2446).

## Conclusion

Teenagers quickly develop nicotine dependence, even from light smoking. Most teenage smokers want to quit and make serious attempts to do so. However, they lack the knowledge, skills and support to do it on their own.

One-third of regular teenage smokers will die prematurely as a direct result of their smoking. GPs are in a good position to help. All teenagers should be asked if they smoke and a brief intervention based on their readiness to change using the 5As model of Ask, Assess, Advise, Assist and Arrange should be provided. NRT can be offered if the smoker is nicotine dependent and ready to quit.

It is important to address the specific needs and issues of adolescence. Confidentiality should be discussed, a non-judgemental and nondirective approach used and the short-term benefits of

smoking cessation focused on. Stress management and how to handle smoking situations and peer pressure should also be addressed. MT

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*A list of references is available on request to the editorial office.*

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