

Risk factors

Although research with adolescents has identified a number of risk factors for tobacco use, association with friends who smoke is the most consistent influence on adolescent smoking behavior; this association is the key factor to initiating smoking (Table 1).^{2, 9} The majority of adolescents (90.3%) who currently smoke cigarettes report that one or more of their closest friends smokes cigarettes—an association significantly more common than for adolescents who have never smoked (17%).⁶

The smoking-related behaviors and attitudes of parents also strongly influence adolescent smoking habits.⁸ Children whose parents smoke are more likely to smoke than children whose parents do not smoke.¹⁰ The CDC's Youth Tobacco Surveillance data reveal that approximately 70% of middle school students and 57% of high school students who use cigarettes live in a home with a smoker.⁶

Other factors also increase the likelihood of adolescent smoking. Comorbid psychiatric disorders such as anxiety, attention-deficit hyperactivity, and substance abuse are implicated in the etiology of tobacco use and dependence among teens.^{11, 12} In addition, concerns about weight influence adolescents, particularly girls, to initiate smoking as a method of weight control.¹³

Table 1 Risk Factors for Adolescent Tobacco Use

- Close association with friends who smoke
- Parents who smoke
- Comorbid psychiatric disorders
- Weight concerns

Characteristics of Teen Smokers

Nicotine is typically the first substance of abuse youths encounter, and adolescents who use tobacco are 15 times more likely to progress to alcohol and other drug use than those who abstain from tobacco.⁸ Smoking rates among substance-abusing teens are much higher than in the non-using teenage population.¹⁴ Other characteristics that distinguish adolescents who smoke from those who do not smoke are less attachment to parents, poor school performance, less involvement in extracurricular activities, more psychological distress, and less knowledge of smoking-related adverse effects.^{2, 9, 15} In addition, an individual adolescent's reaction to the nicotine in tobacco may be influenced by genetic factors similar to the genes that influence the expression of alcoholism.^{16, 17}

Environmental Influences

The advertising and promotion of tobacco products and the exposure to smoking in films have a powerful effect on youth and have been directly associated with the initiation of smoking in adolescents.^{18, 19} While the Master Settlement Agreement between the state attorneys general and the tobacco industry was supposed to help reduce adolescent exposure to tobacco products, analyses of tobacco print advertising found the most popular cigarette brands among young people are still advertised heavily in magazines with a high percentage of young readers (ages 12 to 17 years).^{20, 21} A recent survey of schoolchildren (9 to 15 years old) found smoking in films is pervasive, and adolescents with higher exposure to the tobacco use in films are significantly more likely to have tried smoking.¹⁹ Further, the high prevalence of tobacco use among college students (ages 18 to 24 years)—now the youngest targets of legal tobacco promotion—reveals an unsettling upward trend.²²

Adolescent Tobacco Addiction

Tobacco use among adolescents occurs along a continuum (Figure 2).²³ The pattern starts with abstinence and progresses to experimental use, regular use, dependency, cessation, and relapse. Eventually, secondary abstinence may be reached. Environmental factors such as curiosity, social norms, and social pressure are common reasons for adolescent experimentation with tobacco; pleasure and addiction are the most common reasons for regular tobacco use.²⁴ Like adult smokers, many adolescent smokers—up to three out of five—are addicted to nicotine.²⁵ Although adolescents smoke fewer cigarettes and smoke less frequently than adults, they still become nicotine-dependent.

When they initiate tobacco use, adolescents are unaware of the challenge that tobacco cessation will present. Only 5% of high school-aged smokers expect to be smoking after graduation; however, 75% of the group are likely to continue smoking.²⁶ Motivation to stop using tobacco is high among adolescents; almost 60% of young people who smoke report trying to quit.⁶ However, quit attempts are often unsuccessful in adolescents; because, like adults, they are addicted to cigarettes and experience withdrawal symptoms with nicotine abstinence.⁵ Almost two thirds of adolescent smokers experience withdrawal symptoms when trying to quit smoking, and the most commonly reported withdrawal symptom is craving or a strong desire to smoke.²⁵ Difficulty dealing with stress and feelings of anger have also been identified as common withdrawal symptoms and reasons for relapse.²⁷

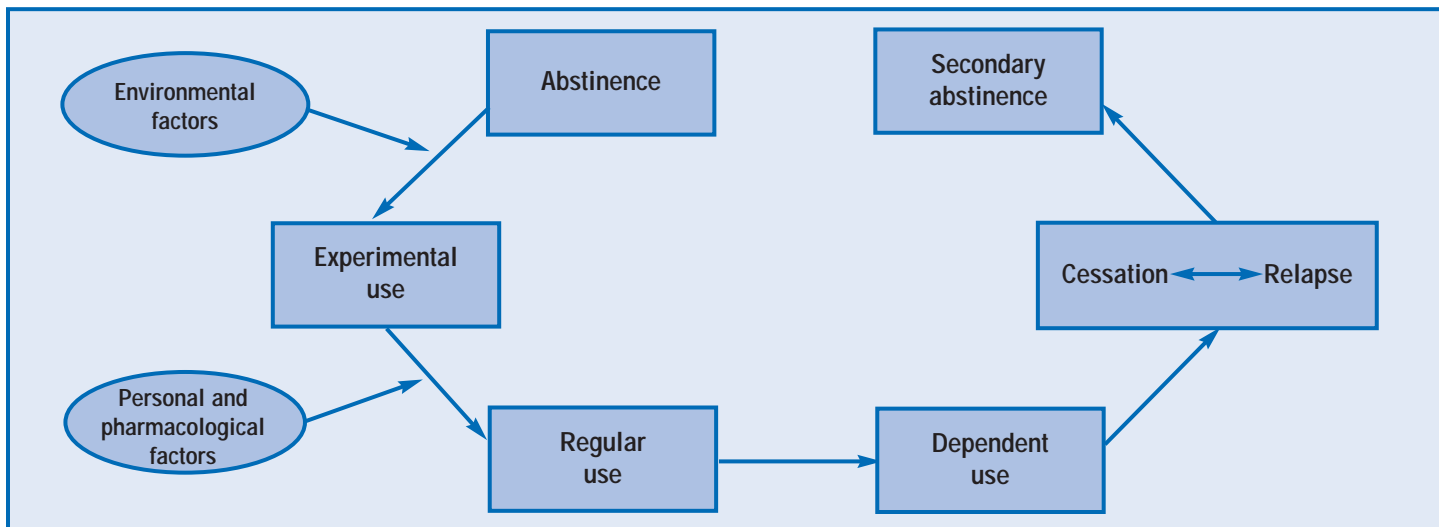


Figure 2 The Cycle of Adolescent Tobacco Use

Adapted from Knight, 1997³⁶

Role of Primary Care Physicians—A Call to Action

The need to develop and implement effective tobacco interventions for adolescents is essential to limiting the prevalent use of tobacco products in this population.²⁸ A hacking cough, stained teeth, deadened taste buds, shortness of breath, increased blood pressure, decreased athletic ability, and a greater susceptibility to colds and flu are some of the immediate health consequences from which adolescent smokers may suffer. Smoking in children also interferes with growth and lung function.⁸ Although many adolescents want to quit smoking, most teenage smokers will continue to smoke in adulthood and face chronic tobacco dependence and a variety of negative health consequences such as cardiovascular disease, cancer, hypertension, and death.^{6, 29, 30}

During routine health-care visits, pediatricians and family practice physicians have unique access to adolescents, and brief smoking interventions can be effectively delivered in this setting.^{29, 31} Young people need encouragement to quit and anticipatory guidance to remain abstinent; primary care physicians are well positioned to provide this support.²⁹ Tobacco-cessation counseling by physicians is effective in improving tobacco quit rates among adults and has been recommended for adolescents.^{29, 32} Despite strong evidence in support of tobacco-cessation counseling practices, physicians do not routinely use these strategies with adolescents.^{33, 34}

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USPHSR, 2000²⁹

To promote positive health behaviors in adolescents, physicians are faced with covering a number of topics (e.g., safety, sexuality, alcohol, drugs) with their young patients. Time constraints and physician comfort level are practical barriers to the implementation of tobacco cessation interventions in the primary care setting.³⁵ However, brief counseling interventions—as short as three minutes—have had a positive impact on adult tobacco-cessation rates and have been recommended for adolescents.²⁹

Ask, Don't Tell

Obtaining a complete and accurate psychosocial history is essential to identifying adolescents who are at risk for tobacco use or already using tobacco.^{36, 37} Adolescents should be interviewed separately from their parents, and the confidentiality of the interview should be guaranteed. For example, the physician might say, "Anything you tell me will be kept confidential unless I think there is a risk to your safety, or someone else's safety, [or I am obligated by law]. Should that happen, I promise to tell you know, and you and I together will figure out how to tell your parents. I will never pass on information behind your back."³⁶

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Knight, 1997³⁶

Using a structured interviewing approach will maximize communication and trigger the physician to routinely ask about tobacco use and exposure. The mnemonic HEADS is a useful reminder for the topics to be discussed during an adolescent psychosocial interview, and these include the child's home life; education; activities; drugs, diet, and depression; and sexuality and safety, i.e., health-risk behaviors (Table 2).³⁷ Adolescents should be asked about tobacco use at every encounter. A transitional approach may be most effective with young adolescents, i.e., asking about tobacco use among classmates and friends first.³⁶ With suspected or known tobacco users, questions related to tobacco use should be specific: "When did you last smoke a cigarette? How does cigarette smoking affect you?".

Table 2 HEADS Adolescent Psychosocial Interview
<p>Home</p> <p>Education</p> <p>Activities</p> <p>Drugs, Diet, Depression</p> <p>Sex, Safety</p>

Prevention

Prevention strategies for adolescent tobacco use include counseling tobacco-using parents to quit; encouraging parents to discourage tobacco use; identifying adolescent patients at risk and reinforcing tobacco-avoidance behaviors; asking every adolescent about tobacco use and exposure at every office visit; and creating a tobacco-free office environment (Table 3).

Table 3 Adolescent Tobacco Use: Prevention Strategies
<ul style="list-style-type: none"> • Counsel parents who use tobacco to quit. • Encourage parents to discourage tobacco use. • Identify patients at risk and reinforce tobacco-avoidance behaviors. • Ask every adolescent about tobacco use and exposure at every office visit. • Create a tobacco-free office environment.

The social and environmental factors that influence adolescent tobacco use exert their influences at a young age; strategies for prevention should begin at the first prenatal visit.⁸ At this time, physicians can counsel parents about the dangers of tobacco use and exposure to tobacco smoke.^{8, 9} An analysis of two, large population-based surveys concluded that smoke-free households are associated with significantly lower rates of adolescent smoking.³⁸ Yet a survey conducted by Pérez-Stable and colleagues found that less than half of family physicians and pediatricians counsel the tobacco-using parents of their young patients regarding tobacco cessation.³⁹

Pediatricians and family physicians can be effective in reducing tobacco use among parents by employing effective cessation practices. Strategies include setting a quit date with the parent; prescribing or recommending pharmacotherapy for cessation; having other office staff counsel parents about tobacco use; referring the parent to group or individual smoking cessation classes; and scheduling a follow-up visit to discuss quitting.⁴⁰ Motivational factors for parents to quit smoking include improving their own health and the health of their children, reducing the risk of their children becoming smokers, and saving money.³¹ Given the medical problems associated with second-hand smoke exposure, parents who do smoke should be encouraged to smoke outside away from their children.

Parental attitudes toward smoking, regardless of parent smoking behavior, are also important in moderating adolescent smoking.⁴¹ Adolescents are less likely to smoke if they believe this behavior will upset their parents.⁴² Primary care physicians can encourage and help parents to establish and enforce no-smoking policies with their children.

Many adolescents at risk for tobacco use can be identified by their peer and parental relationships, by their performance and involvement at school, and by their attitudes toward smoking.⁹ Conducting a directed interview will enable the physician to uncover young patients at risk for tobacco use in their practice, and this process should be employed at every office visit.³⁷ Asking adolescent patients to complete a short questionnaire that inquires about the patients' smoking history and about tobacco use by family and friends has proven useful to identify current smokers and those at high risk.⁴³ Confidential interviewing tools of this sort, which require only a few minutes to complete, help primary care physicians identify at-risk youth before nicotine addiction has developed.

Positive reinforcement of tobacco abstinence is important for adolescents who do not smoke, and promotion of self-esteem, positive parental communication and support, and assertiveness with peers can be encouraged to help prevent future tobacco use.^{8, 36} A

strong, direct message that employs personal language is most effective.³¹ For example, the physician could shake the young patient's hand and say, "I am so glad you haven't given in to the pressure to smoke."

A tobacco-free physician's office environment supports prevention efforts and sends a clear non-smoking message.⁴⁴ Creating a tobacco-free office includes providing appropriate reading material—magazines that do not contain tobacco advertising, posting no-smoking signs and anti-tobacco posters, and providing anti-tobacco and smoking cessation literature.³¹ The office must be smoke free, and employees who smoke should be encouraged to quit smoking and supported through the cessation process. A nurse, receptionist or other office staff can serve as a smoking cessation coordinator to publicize high-profile no-smoking events (e.g., Great American Smoke-Out) and facilitate tobacco-use prevention efforts.

Stages of Change

Tobacco dependence is a chronic condition, and quitting is a process; few smokers will achieve abstinence on an initial quit attempt. Most smokers will instead cycle through several periods of remission and relapse.²⁹ Prochaska and DiClemente developed a model of behavioral change that has been successfully applied to smoking cessation in both adults and adolescents (Figure 3).⁴⁵ The five stages of change are precontemplation, contemplation, preparation, action, and maintenance.

In the stage of precontemplation, smokers are not planning to quit smoking in the short-term future.⁴⁵ The precontemplators' commitment to smoking can range from those who plan to never quit or cut down smoking to those who plan to quit within the next five years, but not in the next six months.⁴⁶ In the contemplation stage, smokers have progressed to thinking about quitting in the next six months.⁴⁵ The preparation stage consists of smokers who plan to quit smoking within the next month. The action stage includes smokers who have quit smoking in the past six months or who are in the process of quitting, and the maintenance stage represents smokers who have remained abstinent for more than six months. Maintenance may lead to long-term abstinence or to relapse and re-entry into the behavioral change cycle.

Young people progress through the stages of change in a similar manner to adults, but there are a few key differences in the way adolescents change their tobacco habits. Adolescents are often ambivalent about tobacco cessation; half of teen smokers would be classified as precontemplators and are not considering quitting.⁴⁷ Teens' readiness and abilities to quit smoking are strongly influenced by their nicotine dependence and the withdrawal symptoms they experience.⁴⁸ Adolescents move from contemplation to quitting tobacco use twice as quickly as adults; however, they are twice as likely to relapse.⁴⁹ In addition, teenagers seem less prepared to quit using tobacco than adults.⁵⁰ Understanding the process of change will help the physician determine the stage of smoking cessation appropriate to the individual adolescent. Emphasizing stage progression and change, as opposed to immediate cessation, will better facilitate the adolescent's efforts with tobacco cessation.

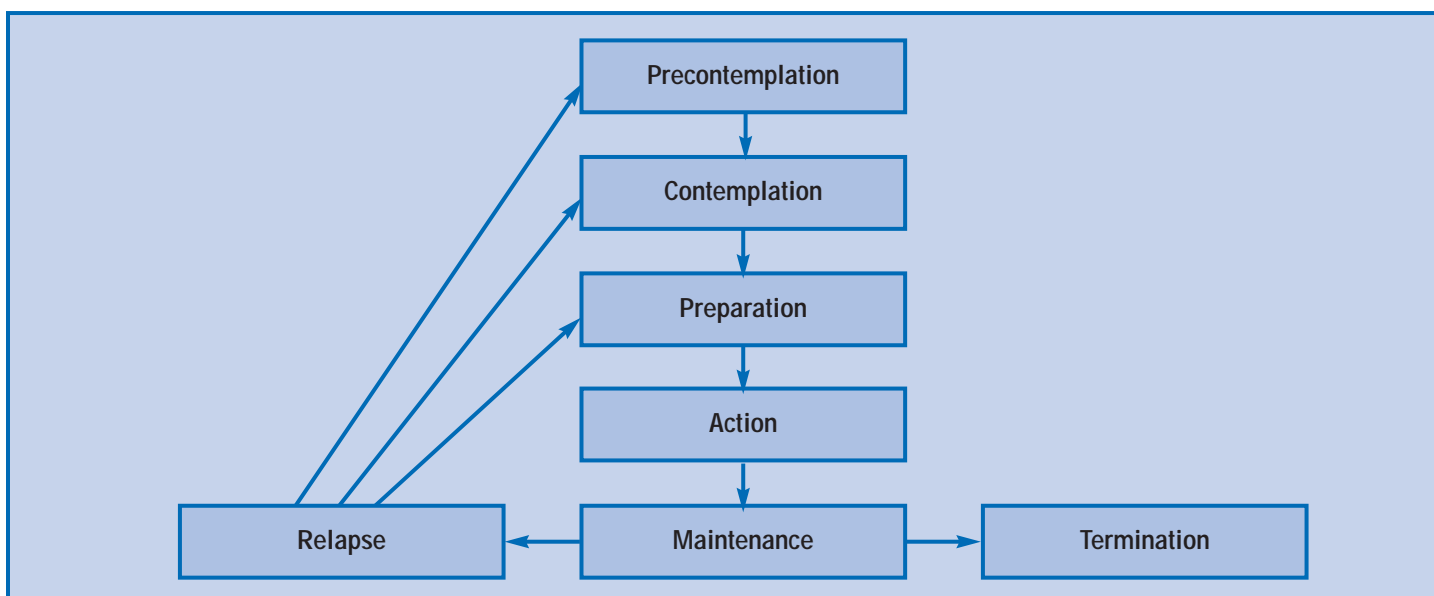


Figure 3 Adolescent Tobacco Cessation: Stages of Change

Adapted from Knight, 1997³⁶

Table 4 Adolescent Smoking Types: Tailored Approaches

Committed Non-smoker	<ul style="list-style-type: none"> • Praise current behavior and encourage continued abstinence.
Potential Smoker, at-risk	<ul style="list-style-type: none"> • Praise current abstinence. • Provide information about healthy alternative behaviors, e.g., exercise for stress relief. • Provide anticipatory guidance, e.g., role-play how to handle peer pressure to smoke.
Experimental Smoker	<ul style="list-style-type: none"> • Set a quit date. • Develop an individualized cessation plan. • Follow up and support cessation efforts.
Smoker Ambivalent about Quitting	<ul style="list-style-type: none"> • Discuss their tobacco habit and probe further into barriers to quitting. • Establish a quit date for the future and develop an individualized cessation plan, if possible. • Follow up and support cessation efforts.
Committed Smoker	<ul style="list-style-type: none"> • Discuss why the patient smokes, e.g., ask the patient to list the pros and cons of smoking. • Tailor message to promote motivation to quit—address patient’s concerns. • Advise of the dangers of smoking to health and provide motivational literature. • Follow up and encourage smoking cessation.

Intervention—A Tailored Approach

It is important that family physicians and pediatricians are prepared to use intervention techniques, such as the 5 A's and GAPS (described in the next section), with their teens who are ready to quit smoking.²⁹ The no-smoking message and approach must be adapted to the smoking status of the individual patient (Table 4).³¹ With all young smokers, physicians should highlight the fact that the tobacco industry manipulates them to make money.

It is essential to prepare adolescents for the chronic relapsing nature of tobacco dependence, so they do not feel that they have failed if they relapse.²⁹ If the teenager's quit attempt is unsuccessful, the physician should reinforce the patient's decision to quit, review the benefits of quitting, and work to resolve the barriers to quitting. Relapse-prevention interventions should be employed whenever the physician encounters an adolescent who has quit smoking or who is trying to quit. Routine mechanisms for follow-up with recent quitters are also useful.

Intervention—The 5 A's

Although not every adolescent is ready to stop using tobacco, a personalized message and brief motivational interview will help the adolescent tobacco user move through the stages of change to cessation.⁸ The National Cancer Institute's model of brief office intervention for tobacco cessation has been adapted for adolescents. This approach consists of the five A's: Ask, Advise, Assist, Arrange, and Anticipatory Guidance (Table 5).⁴⁴

Table 5 The 5 A's: Brief Strategies to Help Adolescents Quit Tobacco Use

Ask	Systematically identify all tobacco users at every visit, and ask about tobacco experience.
Advise	Strongly urge all tobacco users to quit.
Assist	Aid in the development of a quit plan, and discuss with whom information will be shared.
Arrange	Schedule follow-up, and provide personal encouragement.
Anticipatory Guidance	Discuss peer and family use, personal responsibility, and short- and long-term health risks.

The first intervention step for cessation of tobacco use is to systematically ask all adolescent patients about tobacco use in a developmentally appropriate way; patient responses are usually documented in the medical record. In the second step—advise—physicians use a clear, strong, and personalized manner to encourage all their young patients who use tobacco to quit. Helping adolescents develop a plan for quitting tobacco—setting a quit date, involving the support of family and friends, and anticipating challenges to the quit attempt—are the key elements to step three.²⁹ This may require obtaining the teen’s permission to discuss their tobacco use with their family. The fourth intervention step is scheduling follow-up contact (in person or by phone) to evaluate the quit effort and provide personal encouragement. During this contact, the physician might say, “I will help you stop smoking. I am sure you can do this.” Finally, anticipatory guidance for the teen may include a discussion of the influence of family and peer tobacco use, personal responsibility, and the short- and long-term health risks associated with tobacco use.⁴⁴

Intervention—GAPS

The Guidelines for Adolescent Preventive Services (GAPS) also include an office intervention model that can be applied to tobacco use (Table 6).⁵¹ The four steps to the GAPS schema are: 1) information gathering; 2) assessment; 3) problem identification; and 4) solutions. As noted in the 5A’s strategy for intervention, the first step of the GAPS model recommends that the physician ask the patient about his or her own tobacco use and that of friends and family. If the adolescent is a tobacco user, the physician then assesses the extent of the patient’s use, i.e., frequency, length, and quantity of tobacco use. In the problem-identification step of the GAPS model, the physician works with the adolescent to develop a time-limited behavioral plan that is consistent with the teen’s motivation to change. The final step of the GAPS process involves creating solutions to facilitate the adolescent’s effort to reduce and eliminate his or her tobacco use.

Intervention—Pharmacotherapy

Several pharmacotherapies are recommended for smoking cessation in adults; these include the nicotine patch, nicotine gum, nicotine inhaler, nicotine nasal spray, and sustained-release bupropion hydrochloride. Data on the efficacy of nicotine replacement therapy in young adolescents are limited, and studies of the effect of bupropion in this population have yet to be published. Therefore, none of these therapies are currently approved for use in or recommended for children under 18 years of age.²⁹ Although nicotine dependence is evident in young people who smoke, nicotine replacement therapy has not yet been proven effective in adolescents between the ages of 13 and 17 years.^{5, 52, 53} However, for older adolescents who are physiologically addicted to nicotine and who are motivated to quit smoking, clinicians can consider using nicotine replacement therapy as they would for adult patients.^{29, 54, 55}

Resources

A number of excellent resources for the prevention and cessation of tobacco use are available on the internet for both physicians and adolescent tobacco users (Table 7).

Table 7 Tobacco Cessation Resources on the Web

CDC’s Tobacco and Information Source www.cdc.gov/tobacco
American Lung Association www.lungusa.org
QuitNet www.quitnet.org
GottaQuit www.gottaquit.org
Tobacco News www.tobacco.org
Campaign For Tobacco-free Kids www.tobaccofreekids.org

Table 6 The GAPS Schema

Gather Information	<ul style="list-style-type: none"> • Ask about tobacco use of patient, friends, and family at each visit.
Assess Further	<ul style="list-style-type: none"> • Ask about frequency, length, and quantity of tobacco use.
Problem Identification	<ul style="list-style-type: none"> • Determine level of motivation to quit, and develop a specific plan to change tobacco use.
Solutions	<ul style="list-style-type: none"> • Assess adolescent’s self-efficacy. • Identify family and friends who can support plan. • Identify potential barriers to carrying out plan, and develop coping mechanisms. • Establish a verbal or written commitment.

Conclusion

Tobacco use in adolescents leads to nicotine addiction and potentially to life-long tobacco dependence.^{5, 29} Adolescents are exposed to and involved in a number of high-risk behaviors today; smoking or chewing tobacco may seem to be relatively inconsequential acts. However, interventions for the prevention and cessation of tobacco use are essential to help teens avoid developing serious, negative health consequences and progressing to behaviors with higher risk.⁵⁶

Primary care physicians and other health care providers can effectively employ tobacco-use prevention strategies with their adolescent patients through early identification and consistent reinforcement of tobacco-avoidance behaviors.^{9, 36, 37, 43} Using intervention tools (e.g., 5A's and GAPS) at every office visit, physicians can motivate, guide, and support adolescent tobacco users to quit.⁴⁴ Primary care providers have considerable access to adolescents and have the opportunity to provide effective, brief office intervention to reduce tobacco use in young people.

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I studied the IAFP expert panel consensus, *Adolescent Tobacco Use—Prevention and Cessation: Strategies for Primary Care Providers* and completed the CME Post-test on the reverse side of this form.

Signature _____

Name (please print) _____

Degree _____ Specialty _____

Social Security Number _____

Address _____

City _____ State _____ Zip _____



CME Post-test

“Adolescent Tobacco Use—Prevention and Cessation: Strategies for Primary Care Providers”

In the space provided, indicate whether each item is True (T) or False (F).

- _____ 1. Although youth smoking rates have declined recently, 30% of 12-grade students in the United States are current smokers (i.e., report smoking within the past 30 days).
- _____ 2. The most significant risk factor for tobacco use among adolescents is association with friends who use tobacco.
- _____ 3. Compared to adults, adolescents are less likely to become addicted to cigarettes and to experience withdrawal symptoms with nicotine abstinence.
- _____ 4. Parental attitudes toward tobacco use do not influence teens and are not important to moderating adolescent tobacco use.
- _____ 5. Routinely asking adolescent patients about their tobacco use and exposure is an essential strategy for the primary care provider to employ to help prevent and stop tobacco use among adolescents.

Thank you for filling out this post-test.

For a CME certificate, please mail or fax this test and evaluation to:

Illinois Academy of Family Physicians
4756 Main Street
Lisle, IL 60532
Fax: 630-435-0433 Phone: 630-435-0257

