

Smoking Cessation and Tobacco Use Prevention in Adolescents: How to Snuff Out the Smoking

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FMX

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Will include discussion of medications that are FDA-approved for adults, but not FDA-approved for adolescents.

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Dr. Krebs earned her medical degree from the Ohio State University College of Medicine in Columbus and completed a family medicine residency at Miami Valley Hospital in Dayton, Ohio. She is a solo family physician at a rural federally qualified health center (FQHC) and teaches residents at a new family medicine residency program. She is developing a practice management curriculum and is focused on the patient-centered medical home (PCMH) and quality improvement. Her completed projects include efforts to improve diabetes care, improve preventive health, decrease emergency department and hospital utilization, improve care coordination, address population health, measure physician quality, and deliver medical neighborhood care within the context of the PCMH model. Dr. Krebs has experience writing and evaluating quality measures and served on the American Medical Association (AMA) Prediabetes Quality Measures Technical Expert Panel. She is frequently consulted on matters relating to quality measures, population health, lifestyle modification, value-based payment, and diabetes. In addition, she is a frequent contributor to The Ohio Family Physician and has written on a variety of public health issues.

Previously, Dr. Krebs co-ran Family Practice Associates, an independent practice where she led transformation to the PCMH model of care and was involved in the Center for Medicare & Medicaid Innovation's Comprehensive Primary Care (CPC) initiative. She also implemented clinical staff and electronic health record (EHR) training, numerous quality improvement and population health projects, and other efforts to improve patient and practice team satisfaction. Dr. Krebs currently serves on the AAFP's Commission on Quality and Practice and is the chair of the AAFP Working Group on Rural Health, as well as serving on the Ohio Academy of Family Physicians Board of Directors. In the past, she has served on the National Conference of Constituency Leaders (formerly the National Conference of Special Constituencies), the Congress of Delegates, and the Reference Committee on Organization and Finance. She served on the quality committee for Premier Health—a physician-led insurance plan—to help make decisions regarding measurement of physician performance, population health, development of quality measures, compensation for quality, and privileging.

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Learning Objectives

1. Establish protocols to screen adolescent patients for tobacco use, as per current evidence-based recommendations.
2. Provide interventions, including education or brief counseling, to prevent initiation of tobacco use among school-aged children and adolescents.
3. Evaluate adolescent smokers for health risk behaviors.
4. Create an individualized smoking cessation plan for patients.

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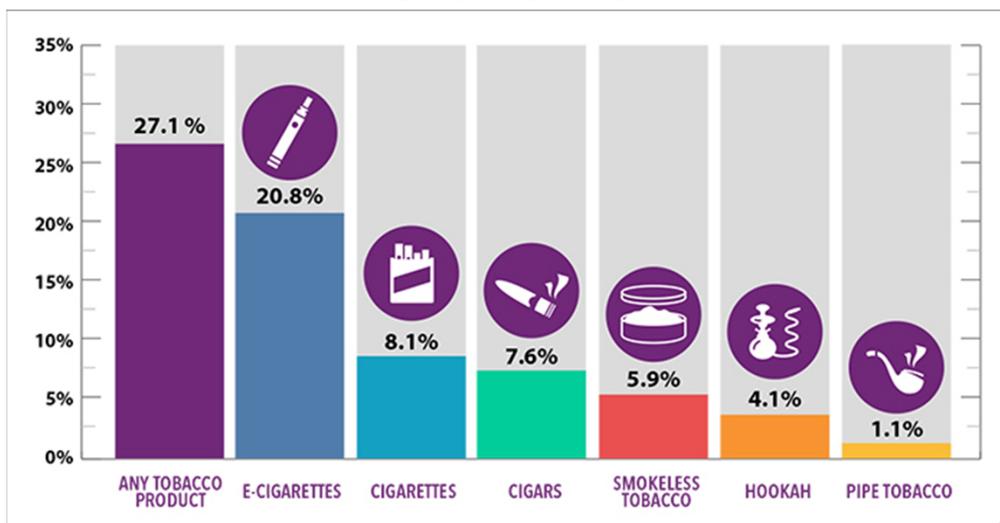
Audience Engagement System



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Tobacco: The Problem

Tobacco Use in US High School Students



Tobacco Use in Middle School and High School Students

- In 2018, 7.2% of middle school students and 27.1% of high school students reported current use of a tobacco product.
- Current use is defined as use in the past 30 days.

Teen Cigarette Smoking

From 2011 to 2018, current (past 30 day) cigarette smoking decreased among middle and high school students.

- 1.8% of middle school students reported in 2018 that they smoked cigarettes in the past 30 days—a decrease from 4.3% in 2011.
- 8.1% of high school students reported in 2018 that they smoked cigarettes in the past 30 days—a decrease from 15.8% in 2011.

Cigar Smoking

From 2011 to 2018, current use of cigars went down among middle school students and high school students.

- 1.6% of middle school students reported in 2018 that they had used cigars in the past 30 days—a decrease from 3.5% in 2011.
- 7.6% of high school students reported in 2018 that they had used cigars in the past 30 days—a decrease from 11.6% in 2011.

Teen E-Cigarette Usage

Since 2014, more teenagers used e-cigarettes or vaped nicotine than smoked cigarettes.

- 4.9% of middle school students reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 0.6% in 2011.
- 20.8% of high school students reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 1.5% in 2011.

What are E-Cigarettes?

- E-cigarettes produce an aerosol by heating a liquid that usually contains nicotine, flavorings, and other chemicals that help to make the aerosol.
- Users inhale e-cigarette aerosol into their lungs.
- Bystanders can also breathe in this aerosol when the user exhales it into the air.

Risks of E-Cigarettes

- Scientists are still learning about the long-term health effects.
- Some ingredients in the e-cigarette aerosol could be harmful to the lungs. Some flavorings may be safe to eat but not inhale, because the gut can process more substances than the lungs.
- Defective batteries have caused fires and explosions, resulting in serious injuries.
- Children and adults have been poisoned by swallowing, breathing, or absorbing e-cigarette liquid through skin or eyes.

Risks of E-Cigarettes

- Currently, there are no federal quality standards to ensure the accuracy of e-cigarette constituents as advertised or labeled.
- Refillable cartridges allow the user to deliver other psychoactive substances, including marijuana.
- Toxins and carcinogens have been found in e-cigarette solutions, including aldehydes, tobacco-specific nitrosamines, metals, tobacco alkaloids, and polycyclic aromatic hydrocarbons.
- E-cigarette solution has also been shown to be cytotoxic to human embryonic stem cells.

Poll Question 1

What tobacco product is used most in adolescents?

- A. Cigarettes
- B. Cigars
- C. Chewing tobacco
- D. E-cigarettes

Differences in Addiction between Adolescents

- Adolescent brain more vulnerable to the rewarding aspects of nicotine.
- Prefrontal cortex is susceptible to effects of nicotine. The prefrontal cortex does not finish developing until age 25.
- Using nicotine in adolescence can affect attention, learning, mood, and impulse control.
- Adolescent rats exposed to nicotine had more problems with impulsive behavior and concentration.
- Early onset human substance abuse, including tobacco, is associated with greater severity as an adult.

Dangers of Tobacco

Over half of children show evidence of tobacco exposure.

Nearly 90% of adult smokers started before age 18.

Prevention

Risk Factors

- Most important: parental smoking
- Low level of parental monitoring
- Easy access to cigarettes
- Perception that peers smoke
- Exposure to tobacco promotions
- Low self-esteem

Risk Factors

- Older age
- Male
- White
- Lacking college plans
- Having parents who are not college educated
- Experiencing highly stressful events
- Perception of risk

Path to Daily Smoking: 5 Stages

1. Susceptible (never smoked)
2. Initiation (trying the first cigarette)
3. Experimentation (repeatedly trying cigarettes, may show signs of addiction)
4. Established smoking (regular smoking, likely to show signs of addiction)
5. Nicotine Dependence

Path to Addiction

Children are susceptible to smoking experimentation and initiation. It can take up to two years to progress from experimentation to addiction, though some progress more rapidly.

Other Risks of Tobacco

- Children and adolescents who use tobacco are more likely to use alcohol.
- Adolescents who smoke are eight times more likely to use marijuana and 22 times more likely to use cocaine.
- Smoking is associated with other risky behaviors, such as fighting and engaging in unprotected sex.

Counseling

- Behavioral counseling interventions, such as face-to-face or phone interaction with a physician, print materials, and computer applications, can reduce the risk of smoking initiation in school-age children and adolescents.
- Moderate net benefit to providing primary care interventions to prevent tobacco use in school-age children and adolescents.
- USPSTF Grade B

Include Tobacco and Vaping in Anticipatory Guidance

- Message should be clear, age-appropriate, and specific.
- Start as early as children can understand, usually age 5.

Messages for Adolescents

- Effects of tobacco on appearance, breath and sports performance
- Lack of benefit for weight loss
- Cost
- How tobacco industry deceives them
- How fast tobacco dependence develops and severity of tobacco addiction

Prevention

- Ask children and adolescents to make a commitment to be tobacco free
- Help patients identify their own reasons for being tobacco free

Anticipatory Guidance: E-cigarettes

- Most teens mistakenly believe that e-cigarettes are safe
- Many teens are not aware that the devices contain nicotine or that nicotine is highly addictive

Anticipatory Guidance

- Address parent/caregiver tobacco use and recommend treatment
- Recommendations should be appropriate to the parent's willingness to change
- If unwilling to quit, recommend smoke-free home and car

Prevention Outside the Exam Room

- Increase price of tobacco products
- Mass media campaigns
- Stronger local laws for retailers
- Retailer education and stronger enforcement

5 A's

Five A's

- Ask
- Advise
- Assess
- Assist
- Arrange

Ask

Ask about tobacco use at every visit.

Talk to adolescent alone and outline rules on confidentiality.

Questions to Ask Adolescents

- Do any of your friends use tobacco?
- Have you ever tried a tobacco product?
- How many times have you tried (name of tobacco product)?
- How often do you use (name of tobacco product)?
- Do you friends use e-cigarettes, e-hookah, vape, or JUUL?
- Have you tried an e-cigarette, e-hookah, vape, or JUUL?

Advise

Advise the patient to quit all forms of tobacco.

Clear, strong, personalized message

Give Reasons to Quit

- Smelly clothes
- Bad breath
- Dental problems
- Cost
- Effects on sports
- Deception by tobacco companies

Assess

- Severity of tobacco dependence
- Are they ready to quit?

Assess

- Previous history of attempts to stop smoking
- Triggers
- Changes the adolescent is ready to make

Stages of Change

- Pre-contemplation (not ready to quit)
- Contemplation (considering a quit attempt)
- Preparation (actively planning a quit attempt)
- Action (actively involved in a quit attempt)
- Maintenance (achieved smoking cessation)

If Patient Not Ready to Quit

Physician's role is to understand the patient's perspective of the risks and benefits of continuing to smoke in order to help the smoker contemplate quitting. Most smokers want to stop smoking, but may not be ready to take specific actions to quit.

Ask what he or she likes and does not like about smoking.

Personalized message about a smoking-related health problem the patient is experiencing may motivate the patient to act.

If Patient Not Ready to Quit: 5 R's

- Relevance- encourage patient to explain why quitting is relevant to them
- Risks- ask patients to explain the risks of tobacco
- Rewards- ask patients to explain the benefits of quitting
- Roadblocks- determine barriers
- Repetition- use motivational interviewing each visit

Assist

- Tailor support to the patient's readiness to change and severity of addiction
- Review lessons learned from previous quit attempts
- Discuss potential challenges
- Discuss coping strategies

Factors That Make Quitting Difficult

- Physical effects- reward feeling of nicotine, and withdrawal symptoms of irritability, craving, attention problems, disturbed sleep, and increased appetite
- Behavioral factors: adolescents frequently associate smoking with hanging out with friends who smoke. The influence of peers on smoking behavior declines with age, but affects whether adolescents begin smoking and whether smoking becomes a daily habit.
- Smoking early in adolescence: the earlier a patient begins smoking, the more likely they are to become addicted to nicotine.
- Concerns about weight gain
- Genetic factors

Differences in Tobacco Cessation Between Adolescents and Adults

Approximately half of adult smokers attempt to stop each year, but fewer than 5% succeed.

Youth make more quit attempts before being successful compared with adults. Approximately 4% of adolescent smokers 12 to 19 years of age successfully quit smoking each year.

Starting smoking at a younger age is associated with more severe addiction and decreased rates of stopping smoking.

Should Patients Use E-Cigarettes to Quit Smoking?

USPSTF found insufficient evidence to recommend e-cigarettes to help patients quit smoking.

AAP Statement on E-Cigarettes

For established smokers, e-cigarettes may reduce health risks for the individual user compared with the risk of continued combustible tobacco use. However, the nuance in this finding must be placed in a larger public health context. Tobacco, when used as intended, causes disease, disability, and death. Operationally, even if e-cigarettes themselves pose less risk to the user than other tobacco products, they still represent a significant public health burden in need of further regulation, particularly if they cause more adolescents and adults to begin harmful combustible tobacco use or prevent fewer people from quitting tobacco use.

Should E-Cigarettes Be Used for Smoking Cessation?

In New Zealand, a clinical trial of e-cigarettes for smoking cessation among moderately to severely tobacco-dependent adults found low cessation rates and no statistically significant difference between the use of nicotine-containing e-cigarettes and placebo.

Recommending E-Cigarettes sends a mixed message to adolescents and may increase their use.

Studies for Adolescent Tobacco Cessation

- Not many studies
- Many studies have methodological problems (poorly described interventions and methods, inadequate measures of cessation, brief follow ups, poor retention rates, and lack of control groups)

Assist

- Limited evidence on effectiveness of smoking cessation interventions for school-aged children and adolescents who have experimented with smoking or are regular smokers
- Some evidence shows that community and school-based behavioral counseling programs can work
- Evidence suggests that the long-term abstinence rate doubles when counseling is used compared to usual care (brief advice or pamphlets) or no treatment

US Public Health Service Recommendations

Cognitive-behavioral strategies (self-monitoring and coping skills)

Motivational strategies (techniques to clarify desire for change and reduce ambivalence toward change)

Social influence strategies (addressing social influences that serve to promote or maintain smoking)

Assist

- Discuss how to deal with cravings
- Discuss how to deal with triggers
- Suggest resources
- Treat depression or anxiety if present

Assist

- Provide concrete resources including resources by phone, text, app, internet.
- Refer to community or school-based programs when available.

Assist

- Phone: 1-800-QUITNOW
- Text: SmokefreeTXT. Text QUIT to 47848
- App: quitSTART
- Chat: National Cancer Institute Live Chat
https://livehelp.cancer.gov/app/chat/chat_launch

Discussing Social Smoking

Usually occurs at parties.

Alcohol may be present in these situations, which can affect judgment.

9 out of 10 high schoolers do not smoke.

Most high schoolers say they would prefer to date a nonsmoker.

Quit Rates for Behaviorally Based Programs

Although still beneficial compared with nonintervention, behaviorally based programs have much lower rates of smoking cessation among teenagers who are severely tobacco dependent.

Project EX (an 8-session, school-based clinic tobacco use cessation program for adolescents that includes enjoyable, motivating activities) found that 30-day abstinence from smoking on completion of the program was 42% for those with minimal to mild tobacco dependence but only 7% for those with severe tobacco dependence.

Quit Rates for Behaviorally Based Programs

Not On Tobacco program: at 3 months' follow-up, 24% of those with minimal to mild nicotine dependence reported not smoking, but only 9.4% of those with severe nicotine dependence reported not smoking.

Clinical trials of motivational interviewing versus brief advice (without medication use) for tobacco-dependent adolescents yielded very low stop-smoking rates that did not differ between treatment groups.

Assist

- There are several FDA-approved medications to help adults quit smoking (Varenicline, bupropion, nicotine replacement)
- No medications are currently approved by the FDA for tobacco cessation in children and adolescents.
- Evidence on alternative and complementary medicine, like acupuncture, is not available.

Poll Question 2

Which statement is correct about adolescent smoking?

- A. It is more difficult for adolescents to quit smoking than adults
- B. There are few studies on adolescent tobacco cessation
- C. There are no FDA-approved medications for adolescent tobacco cessation
- D. All of the above

What Should the Family Physician Do?

It is important to help adolescents quit to prevent a lifetime of tobacco use.

Harder for adolescents to quit tobacco compared to adults.

Few studies on how we can help adolescents quit tobacco.

No FDA-approved medications.

Is it Ever Okay to Use Pharmacotherapy?

According to the American Academy of Pediatrics, “Clinical Practice Policy to Protect Children From Tobacco, Nicotine, and Tobacco Smoke,” pharmacotherapy can be considered to help moderately to severely tobacco-dependent adolescents who want to stop, despite challenges with adherence and the resulting high relapse rates.

Nicotine Replacement Therapy

Not FDA-approved for adolescents.

Side effects include gastrointestinal symptoms (nausea, vomiting, abdominal pain, diarrhea), headache, and local irritation depending on the delivery method .

Nicotine dependence from NRT rarely occurs, especially with the long-acting patch. Nicotine does not cause cancer.

NRT in Adults

- Individual NRT products were found to be superior to placebo, increasing quit rates up to twofold.
- One randomized trial among the NRT patch, gum, inhaler, and nasal spray found no difference in efficacy.
- Single-agent NRT is less effective than combining the long-acting patch with a short-acting form such as gum, lozenge, or inhaler.
- In some but not all trials, NRT benefits men more than women.

NRT in Teens

Efficacy and safety not as well established as with adults.

FDA labeling states, “Safety and effectiveness in the pediatric population have not been established.”

NRT in Adolescents

- Investigators compared the use of a nicotine patch versus nicotine gum versus placebo in a randomized, double-blind, placebo-controlled clinical trial with 120 adolescents who wanted to stop smoking and had moderate or greater tobacco dependence.
- Medication was initiated on the planned stop-smoking day and continued for 12 weeks. Group cognitive behavioral therapy was provided to all participants.
- At 1 week after the stop-smoking date, 26.5% of those receiving the nicotine patch, 17.4% of those receiving the nicotine gum, and 5.0% of the placebo group were not smoking.
- By 3 months after pharmacotherapy was discontinued, nonsmoking rates were 20.6% for the patch, 8.7% for the gum, and 5% for placebo.
- Adherence to daily use of the patch was acceptable at 78.4%; adherence to use of the nicotine gum was poor at 38.5%.

Nicotine Patch in Adolescents

Not FDA approved for adolescents

Studies suggest it is safe in adolescents

In the US, a prescription is required to allow patients under 18 to purchase nicotine patches or gum

Nicotine Patch in Adolescents

In one study, 18% of patients who used the patch for 12 weeks in addition to behavioral intervention were abstinent 3 months after treatment cessation, compared with 2% of those treated with behavioral intervention and placebo.

Nicotine Patch

- Long-acting, slow-onset pattern of nicotine delivery, which produces relatively constant relief from withdrawal over 24 hours but requires several hours to reach peak levels.
- Compliance is high.
- Cannot adjust the dose of nicotine being released to respond to nicotine cravings and withdrawal symptoms.
- Available over the counter for adults, but requires prescription if under 18.

Nicotine Patch: How to Use

>10 cigarettes per day and weight >45 kg – Start with the highest dose nicotine patch (21 mg/day) for six weeks, followed by 14 mg/day for two weeks, and finish with 7 mg/day for two weeks.

≤10 cigarettes per day or weight < 45 kg – Start with the medium dose nicotine patch (14 mg/day) for six weeks, followed by 7 mg/day for two weeks.

Nicotine Patch: How to Use

Apply one patch each morning to any non-hairy skin site. Rotate the site daily to avoid skin irritation (most common side effect). Hydrocortisone cream may be used to relieve skin irritation if it occurs.

Remove and replace the patch with a new one at bedtime. If leaving the patch on overnight is causing the frequently reported side effects of insomnia and vivid dreams, replace the patch the next morning. Smoking cessation rates are similar whether the patch is left on for 24 hours or taken off at night.

Nicotine Patch: How to Use

When the patch is removed at night, substantial plasma levels of nicotine are reached 30-180 minutes after a new patch is applied in the morning. If the patch is removed at night and morning nicotine cravings occur, use a short-acting NRT (eg, gum, lozenge) while waiting for the nicotine patch to take effect.

Poll Question 3

A 16-year-old female is using the nicotine patch and has not smoked in three days. She complains of occasional cravings and vivid dreams. What is the best option?

- A. Continue current treatment.
- B. Change to varenicline.
- C. Advise her to take off the patch at night and add nicotine gum.
- D. Stop the patch all together.

Short-Acting NRT

- Options: lozenge, gum, inhaler, or nasal spray.
- Studies in adults show that it can be used as a single agent or added to daily nicotine patch therapy. Limited studies in adolescents.
- Require repeated use throughout the day, lead to more variable nicotine levels than the patch, and require more instructions for correct use.
- Smokers may be instructed to use the product when they have a craving, but this generally leads them to underuse the products. Another option is to have the smoker use the short-acting NRT product at least once every hour while awake and more often as needed.

Nicotine Gum

- Chewing the gum releases nicotine to be absorbed through the oral mucosa.
- Peak blood nicotine levels 20 minutes after starting to chew.
- Available in several flavors.

Nicotine Gum

Dosing is determined by the number of cigarettes smoked daily.

- \geq 25 cigarettes per day – 4 mg dose of gum is recommended
- $<$ 25 cigarettes per day – 2 mg dose of gum is recommended

Chew at least one piece of gum every one to two hours while awake and also whenever there is an urge to smoke.

Use up to 24 pieces of gum per day for six weeks.

Gradually reduce use over a second six weeks, for a total duration of three months.

Nicotine Gum

"Chew and park" is recommended: chew the gum until the nicotine taste appears, then "park" the gum in the buccal mucosa until the taste disappears, then chew a few more times to release more nicotine. Repeat this for 30 minutes, then discard the gum (because all nicotine in the gum has been released).

Nicotine Gum

Gastric and esophageal irritation can occur if the gum is chewed too rapidly, because nicotine is released faster than it can be absorbed by the buccal mucosa and the nicotine is thus swallowed. Nicotine absorbed from the gastrointestinal tract is largely metabolized by the liver and relatively ineffective for smoking cessation.

Nicotine Gum

- Acidic beverages (coffee, carbonated drinks) lower oral pH, which reduces nicotine absorption.
- Side effects are mostly a consequence of excess nicotine release with overly vigorous chewing and consist of nausea, vomiting, abdominal pain, constipation, hiccups, headache, excess salivation, a sore jaw, and mouth irritation or ulcers.
- Chewing gum may exacerbate TMJ disease and the gum can damage or adhere to dental appliances.

Nicotine Nasal Spray

- In one small study, 57% of adolescents stopped the nasal spray after one week.
- Common side effects include nasal irritation and burning, and less commonly, about the taste and smell
- Those assigned to use nasal spray showed no difference in cessation rates, number of cigarettes smoked per day, or cotinine levels at 12 weeks compared to counseling alone.

Nicotine Lozenges and Inhalers

No studies available for adolescents

Varenicline

- Not approved for use in patients 16 and younger due to lack of efficacy
- In adults, more effective than placebo, bupropion, or NRT.
- Mechanism: Reduces the symptoms of nicotine withdrawal by blocking nicotine from binding to the receptor that mediates the reinforcing effects of nicotine that lead to nicotine dependence. This reduces the rewarding aspects of cigarette smoking. It does this by binding with high affinity and producing partial stimulation of the alpha-4 beta-2 nicotinic receptor.

Varenicline Safety

- Common side effects reported are nausea, insomnia, and abnormal dreams.
- Early concerns about neuropsychiatric and cardiovascular side effects, but subsequent studies have not supported these.
- Limited data about safety in adolescents.

Bupropion in Adolescents

- Few studies available with mixed results
- A study comparing bupropion plus nicotine patch with the patch alone did not show a difference
- Another study suggested bupropion plus short-term counseling had short-term efficacy compared with counseling alone, but abstinence rates were lower than for adults and rapid relapse after medication discontinued.

Bupropion in Adolescents

- A randomized, double-blind, placebo-controlled, parallel-group clinical trial included 6 weeks of bupropion plus counseling for tobacco-dependent adolescents.
- Improved rates of smoking cessation with 150 mg of bupropion twice daily when the medication was being taken (29% abstinent at 6 weeks with bupropion vs 16% with placebo); the benefit was quickly lost after the medication was stopped, however.

Bupropion

- Believed to act by enhancing central nervous system noradrenergic and dopaminergic release.
- Contraindicated in patients with a seizure disorder or eating disorders. The risk of seizure is dose-dependent .
- Common side effects are insomnia, agitation, dry mouth, and headache.
- Randomized trials have demonstrated the efficacy of bupropion in smoking cessation in adults. Higher quit rates with varenicline than bupropion, while nicotine patch produced comparable cessation rates to bupropion.

Arrange

- Arrange for follow up.
- Remind patients that most smokers require multiple attempts to quit.

Persistent Smoking

Discuss setbacks and help the patient with a different approach.

Reinforce or use different behavioral approaches.

Persistent Smoking

If medication is used, look for:

- Incorrect use of medication(s)
- Intolerance of side effects
- Failure of the drug to reduce nicotine withdrawal symptoms, despite correct use of the medication
- If the patient is already medication correctly and maximally without sufficient effect at four weeks, the options are to continue the therapy, switch to a different therapy, or consider combining medications by adding another agent (shown safe in adults, no available studies in adolescents). If there has been no response to the initial agent, switching to a different medication is recommended.

Billing (Commercial Insurance)

99406 Counseling on smoking cessation 3-10 minutes
(intermediate)

99407 Counseling on smoking cessation >10 minutes
(intensive)

May be bundled. Check with each insurance.

Billing (Medicaid)

- Many states offer some payment for individual tobacco cessation and treatment counseling for Medicaid patients. For example, the ACA requires states to expand Medicaid coverage of cessation services for pregnant women. You are encouraged to contact your state Medicaid office for coverage information in your specific state.
- The Centers for Medicare and Medicaid Services encourage state partners to support smoking cessation by ensuring coverage of all FDA-approved smoking cessation medication (prescription and over-the-counter [OTC]) without a copayment requirement or other financial barrier.

Helping Patients Afford Help

Resources for patients who do not have insurance coverage or who have limited coverage by their insurance carrier include the following:

- Quitline: 1-800-QUIT-NOW (1-800-784-8669)
- Flexible spending accounts may be used for smoking cessation
- Employee assistance programs (EAP), in some cases
- Community resources and support groups
- Out-of-pocket spending
- Online resources

Practice Recommendations

- Include tobacco/vaping in anticipatory guidance starting around age 5, including the risks of e-cigarettes
- Counsel parents to quit smoking to prevent children from starting
- Ask all adolescents about tobacco/e-cigarette use
- Review resources available for adolescents and decide how you will use them.
- Create individualized quit plans for adolescents
- Arrange close follow up

Contact Information

- Mary Krebs – maryekrebs@yahoo.com

Questions



Resources

Benowitz N. Nicotine: Addiction, Effects on the Adolescent Brain and Electronic Cigarettes
<http://www.nationalacademies.org/hmd/~media/79C64AF3B65448ECBECE08FDFDDFC83E.ashx/>
Center for Disease Control, Preventing Tobacco Use Among Young People—A Report of the Surgeon General, 1994

Center for Disease Control. Youth and Tobacco Use.
https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm

Center for Disease Control. Youth Tobacco Cessation.
https://www.cdc.gov/tobacco/quit_smoking/cessation/pdfs/youth_tobacco.pdf
[Farber HJ](#), [Walley SC](#), [Groner JA](#), [Nelson KE](#); [Section on Tobacco Control](#). Clinical Practice Policy to Protect Children From Tobacco, Nicotine, and Tobacco Smoke. [Pediatrics](#). 2015 Nov;136(5):1008-17.

Jenco M. FDA: Smoking cessation drug not proven effective for teens. AAP News.
<https://www.aapublications.org/news/aapnewsmag/2019/02/25/chantix022519.full.pdf>
Jensen BP, Walley SC, SECTION ON TOBACCO CONTROL. E-Cigarettes and Similar Devices. *Pediatrics* 2019; 143.

Mermelstein R Teen smoking cessation *Tobacco Control* 2003;12:i25-i34.
https://tobaccocontrol.bmj.com/content/12/suppl_1/i25

Resources

PHS Guideline Recommendations. How to Help Adolescents Quit Smoking.
https://www.cdc.gov/tobacco/quit_smoking/cessation/pdfs/phs_adolescents_508.pdf

Primary Care Interventions to Prevent Tobacco Use in Children and Adolescents: Recommendation Statement. *Am Fam Physician*. 2014 Nov 15;90(10):722E-722H.
<https://www.aafp.org/afp/2014/1115/od1.html>

PHS Guideline Recommendations. How to Help Adolescents Quit Smoking.
https://www.cdc.gov/tobacco/quit_smoking/cessation/pdfs/phs_adolescents_508.pdf

Siqueira LM; Committee on Substance Use and Prevention. Nicotine and tobacco as substances of abuse in children and adolescents. *Pediatrics*. 2017;139(1):e20163436

Sulaski Wyckoff. Addiction expert offers insight on screening for e-cigarette use. AAP News, 11/5/18.
U.S. Department of Health and Human Services. Adolescents and Tobacco: Trends.
<https://www.hhs.gov/ash/oah/adolescent-development/substance-use/drugs/tobacco/trends/index.html>