ELECTRONIC CIGARETTES:
Trends, Health Effects and Advising Patients Amid Uncertainty
Electronic Cigarettes: Trends, Health Effects and Advising Patients Amid Uncertainty

E-cigarettes are not harm-free and are not proven cessation aids and clinicians should send the clear message that no form of tobacco or nicotine is safe.

Benjamin W. Chaffee, DDS, MPH, PhD

Tobacco Counseling in Dental Settings

This article discusses how tobacco-cessation interventions provided by dentists, dental hygienists and dental assistants can greatly increase a patient’s likelihood of quitting.

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Smoking and Tooth Loss in California: The Role of Dental Professionals in Promoting Tobacco Cessation

The purpose of this article is to report the burden of tooth loss in California in 2014 and 2016 and to describe the impact that smoking has had on that burden.

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Efficacy of Probiotics in the Treatment of Peri-implant Diseases: A Systematic Review

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This article discusses selected clinical scenarios that may uniquely benefit the patient and orthodontist by choosing CBCT as the preferred imaging modality.

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Editor’s note: The January issue of the CDA Journal dedicated to CAMBRA unfortunately contained omissions and errors to some graphs and tables that were intended as tools for clinicians to use in practice. The Journal sincerely regrets these errors and plans to publish a stand-alone CAMBRA guide with an upcoming issue. A corrected version has been posted at cda.org/journal.
Electronic Cigarettes: Trends, Health Effects and Advising Patients Amid Uncertainty

Benjamin W. Chaffee, DDS, MPH, PhD

ABSTRACT Dental professionals can be effective tobacco-prevention and tobacco-cessation partners. Electronic cigarettes (e-cigarettes), which deliver aerosolized nicotine but fewer toxicants than found in cigarette smoke, present new and contentious questions for clinicians, patients and researchers. Evidence suggests e-cigarettes are not harmless but are less dangerous than cigarettes. Smoking-cessation effectiveness is unproven and oral and systemic health effects remain under study. Dental professionals must stay informed to provide patients truthful information as new data emerge.

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Eliminating tobacco use improves clinical outcomes and saves patients’ lives. While cigarette smoking accounts for the vast majority of tobacco-related illness worldwide, dentists and other clinicians face a changing tobacco landscape. New and emerging tobacco products, policy and regulatory changes and shifting use patterns all challenge the practitioner to look beyond cigarettes when discussing tobacco use with patients. At the forefront of this new tobacco landscape are electronic cigarettes (e-cigarettes). These devices quickly rose in popularity in the early part of this decade, with many users viewing them as a less harmful nicotine delivery alternative to combustible cigarettes. E-cigarettes have been met with no shortage of controversy and uncertainty. Reputable public health and medical organizations have taken contrasting stances. Proponents tout e-cigarettes as a disruptive technology with the potential to save the lives of cigarette smokers who switch. More skeptical viewpoints note the unknown long-term health effects, limited data on effectiveness as a smoking-cessation tool and the potential to lure youth.

Dental clinicians are certain to encounter patients using or considering use of e-cigarettes and will be expected to respond to patient concerns related to e-cigarette health effects, effectiveness for smoking cessation and implications for dental treatment. However, patient surveys suggest that very few dentists discuss either the potential benefits or harms of e-cigarettes with their patients. This narrative review covers the current evidence related to e-cigarette health effects, systemically and orally, and use as smoking-cessation aids. Practical suggestions for the dental clinician are provided, emphasizing the need to remain informed at this time of evolving e-cigarette science and policy.

**E-cigarettes**

E-cigarettes are capable of delivering nicotine without tobacco combustion. These battery-powered devices create an inhalable aerosol, commonly called “vapor,” by heating a liquid mixture (e-liquid), which typically contains propylene glycol or glycerin, along with nicotine, flavorants and other additives. E-cigarettes are known under many other names, including electronic nicotine delivery systems (ENDS), vapor pens, e-hookah and vape pipes and vary considerably in design. Use is often called “vaping.” The devices have been heavily marketed, frequently as a less harmful alternative to conventional cigarettes. E-cigarette aerosol has been found to contain ultrafine particles and known toxins, such as acetaldehyde, acrolein, toluene and formaldehyde, albeit at much lower levels than found in cigarette smoke.

E-cigarette awareness and use expanded rapidly in the first half of this decade. By 2013–2014, 3.3 percent of U.S. adults had reported using e-cigarettes every day or some days. Use is higher among current cigarette smokers and also among young adults, LGBT individuals and those of low socioeconomic status. One national study estimated that in 2014 nearly 15 percent of U.S. adults had ever used e-cigarettes, with greater use among young adults (23 percent), those earning < $15,000 annually (23 percent) and those reporting self-perceived “poor” health status (27 percent), but with no statistically significant association with gender or race/ethnicity. Since 2014, e-cigarettes have been the most common form of tobacco product used by U.S. middle and high school students, eclipsing conventional cigarettes.

E-cigarettes are highly heterogeneous and evolving in design (FIGURE). While often cited as invented by Chinese pharmacist Hon Lik in 2003, related devices had been under development by major cigarette companies years earlier. Currently marketed e-cigarettes include “first-generation” devices that resemble cigarettes in appearance (“cigalike”) and can be recharged or discarded after use.

FIGURE. Common types of electronic cigarette devices currently available in the United States. Modifiable tank-type devices are typically larger than earlier designs and often allow users to adjust battery voltage or device power along with other modifications (A). Pen-type or tank “second-generation” devices are rechargeable, refillable and button-activated (B). Rechargeable “cigalike” devices resemble a cigarette in appearance (C). Disposable “cigalike” devices are not intended to be refilled or recharged and are discarded after use (D).
and flavorants also contribute to the variability across e-cigarette products.

The Food and Drug Administration (FDA) officially announced its authority and intention to regulate e-cigarettes in 2016. However, in 2017 the FDA announced that it would delay e-cigarette regulation until 2022. In the absence of federal regulation, some municipalities have instituted local measures: for example, extending clean indoor air laws to e-cigarettes or including e-cigarettes under restrictions on the sale of flavored tobacco products. Meanwhile, multinational cigarette manufacturers, who have developed and/or acquired e-cigarette brands, and independent e-cigarette companies alike are highly invested in an industry expected to reach $47 billion globally by 2025.

Harm Reduction and Controversies

Using an e-cigarette is almost certainly less dangerous than smoking a cigarette. What remains contentious is how much less harmful an e-cigarette may be to the user and the net impact of widespread e-cigarette availability on society as a whole. Both sides of the e-cigarette debate have been fueled with impassioned language. The arrival of e-cigarettes has been hailed as “one of the greatest public health wins of all time” and, alternatively, “an emerging public health epidemic.”

The premise of harm reduction is that for individuals unwilling or unable to avoid a highly dangerous behavior, at least in the short-term, substitution with less dangerous behavior will ultimately improve health. For example, while motorcycle enthusiasts are unlikely to give up riding, imposing helmet laws will reduce injuries. Injection drug abuse is a complex social problem, but clean needle and syringe programs might prevent the spread of blood-borne pathogens. E-cigarettes could serve a harm-reducing role for the cigarette smoker who is otherwise unwilling or unable to quit — a view the tobacco industry has firmly embraced. The cigarette industry has had an ignominious history with harm reduction, promoting “low tar” and filtered cigarettes that offered no discernable health benefit, sometimes in misleading and manipulative relationships with government researchers and potential regulators.

Public Health England, a United Kingdom advisory agency to government and health authorities, published a report stating that e-cigarettes are “95 percent less harmful” than smoking. That 95 percent estimate was loudly criticized as based on “flimsy” evidence — criticism the report authors claim detracts from the main message that e-cigarettes are less harmful than smoking. In 2017, Public Health England backed television messages encouraging cigarette smokers to consider e-cigarettes. In contrast, since 2015, the California Department of Public Health has run statewide television messages warning of e-cigarette dangers. Some countries, including Brazil, Norway and Singapore, have effectively banned e-cigarettes.

For e-cigarettes to yield meaningful public health gains, their use must be substantially less harmful than cigarette smoking. Additionally, e-cigarettes must serve as an effective substitute for cigarettes among smokers, aiding long-term quitting rather than enabling ongoing dual use of e-cigarettes and conventional cigarettes in combination. Finally, e-cigarette availability should not encourage tobacco and nicotine uptake among nonsmokers, including among youths or former smokers.

E-cigarettes and Systemic Health

Due to the absence of tobacco combustion, e-cigarettes do not produce many of the toxins present in cigarette smoke, such as carbon monoxide, although some tobacco-derived chemicals, including volatile organic compounds and nitrosamines and heavy metals and silicate particles from the device heating elements, may be present in e-cigarette aerosol at low but potentially biologically relevant levels. Lower toxin exposure is the main reason e-cigarettes are presumed to cause less harm than conventional cigarettes, and, in fact, among cigarette smokers switching to e-cigarettes for two weeks, biomarkers of exposure to key carcinogens and toxins were substantially reduced. It is highly plausible that e-cigarette use will prove less carcinogenic than cigarette smoking. However, cancer only accounts for a portion of cigarette-related deaths: The majority of those killed by smoking die from nonmalignant pulmonary or cardiovascular diseases.

Collected data from in vitro and animal models as well as human clinical studies suggest that pulmonary toxicity could be a serious concern. The FDA designates glycerol and propylene glycol as “generally recognized as safe” to consume orally but has not evaluated the chemicals for inhalation, which could cause respiratory irritation. Diacetyl, acetyl propionyl and other aldehydes...
are associated with toxic effects when inhaled and are found as flavoring agents in many e-liquids.\textsuperscript{58,59} Human exposure studies suggest that acute e-cigarette use may trigger oxidative stress and increased airflow resistance.\textsuperscript{51,52} E-cigarette use may alter the secretion of immune system proteins in human airways.\textsuperscript{53} Epidemiologically, e-cigarette use is positively associated with asthma among adolescents,\textsuperscript{69} but the causal nature of this relationship is uncertain. Together, the evidence points toward meaningful respiratory effects, but further research is necessary to address variability in e-cigarette design and e-liquid contents, as well as the implications of long-term use.\textsuperscript{48}

Chemicals delivered during e-cigarette use, notably nicotine, oxidants and particulates, could enhance cardiovascular risk.\textsuperscript{54} Studies have associated e-cigarettes with increased heart rate,\textsuperscript{55} endothelial cell toxicity\textsuperscript{69} and impaired flow-mediated dilatation,\textsuperscript{57} all of which may contribute to damaging cardiovascular events. Short-term cardiovascular changes have not been found in all studies and in some studies cardiovascular changes were less pronounced with exposure to e-cigarette aerosol versus cigarette smoke.\textsuperscript{54} While the evidence continues to accumulate, it appears likely that e-cigarettes contribute to cardiovascular risk, particularly among individuals with underlying cardiovascular disease, although the cardiovascular risks posed by e-cigarettes are likely to be less severe than those of cigarette smoking.\textsuperscript{54}

**E-cigarettes and Oral Health**

Studies of the potential oral health effects of e-cigarette use are limited. However, there are plausible mechanisms through which e-cigarettes could harm oral tissues. Up to half of U.S. periodontal disease cases can be attributed to tobacco use\textsuperscript{58} and damage to the periodontium from smoking at least partly results from nicotine exposure. At doses equivalent to heavy smoking, nicotine inhibits osteoblast proliferation,\textsuperscript{59} impedes neutrophil phagocytosis\textsuperscript{60} and stimulates inflammatory cytokine production from human gingival fibroblasts.\textsuperscript{61} E-cigarettes can deliver nicotine at levels comparable to conventional cigarettes\textsuperscript{62} in addition to other potentially toxic aerosol components.

Aerosol temperature could affect oral tissues. However, the temperature at which e-cigarette aerosols are produced depends on device characteristics and user modifications, for example, varying from 130 degrees Celsius to 350 degrees Celsius in devices known as “direct drip atomizers.”\textsuperscript{62} Nicotine stomatitis features hyperkeratinization and inflammation of the minor salivary glands of the hard palate and can be attributed to exposure to high-temperature smoke, particularly from pipes. Anecdotal accounts have reported palatal stomatitis in e-cigarette users,\textsuperscript{64} but formal case reports or epidemiologic studies have not confirmed this finding.

A number of in vitro studies have examined the response of oral-derived cells and tissues to e-liquids. Exposure of human gingival fibroblasts to e-cigarette liquids, both with and without nicotine, resulted in morphological changes, with nicotine-containing e-liquids found to be particularly cytotoxic.\textsuperscript{65} In another study, human periodontal ligament fibroblasts and human gingival tissue models exposed to e-cigarette aerosols exhibited increased markers of oxidative stress and inflammation, suggesting a pathogenic pathway.\textsuperscript{66}

The cell culture studies give reason for caution but do not necessarily translate to clinically meaningful effects. Two studies of periodontal parameters in e-cigarette users have been published. Suppression of the inflammatory response and reduced bleeding on probing is a well-documented clinical consequence of tobacco smoking.\textsuperscript{67} A cross-sectional study of 94 patients in Saudi Arabia compared periodontal status between cigarette smokers, daily exclusive e-cigarette users and tobacco never-users.\textsuperscript{68} The e-cigarette group exhibited a lower percentage of sites with bleeding on probing than never smokers, similar to the percentage seen for cigarette smokers.\textsuperscript{68} In England, 18 cigarette smokers, none with a pocket depth > 4 mm, were provided e-cigarettes to substitute for smoking over two weeks.\textsuperscript{69} The mean percentage of site with bleeding on probing increased on follow-up, although mean plaque scores remained similar.\textsuperscript{69} These initial clinical studies should be interpreted cautiously in light of small sample sizes, convenience sampling, brief observation periods and the heterogeneity of e-cigarette devices, e-liquids and patterns of use in the general population. Larger, more rigorous studies are likely forthcoming.

In addition to any oral health implications of e-cigarettes under intended-use conditions, there are multiple documented cases of oral and facial trauma caused by explosions and fires from e-cigarette device malfunctions.\textsuperscript{70–72} The dental practitioner may encounter burns, alveolar fractures and tooth evulsions stemming from e-cigarette explosions near the mouth.\textsuperscript{71} This potential...
for facial injury is a harm unique to e-cigarettes relative to conventional tobacco products and one example in which, despite the promise of lower levels of known toxins, the proliferation of e-cigarettes may be accompanied by new and unexpected risks.

E-cigarettes and Smoking Cessation

Dental professionals may encounter patients who achieve smoking cessation with e-cigarettes. Both implicit and explicit smoking-cessation claims, including testimonials from e-cigarette users, are commonly featured in commercially sponsored e-cigarette social media channels and other marketing. Heavy users of e-cigarettes often report being motivated by a desire to quit smoking, with many also reporting cessation success. While smoking cessation is possible with e-cigarettes, 75–82 percent of U.S. adults who use electronic cigarettes use in combination with at least one other form of combustible tobacco25,73 and only 20 percent of e-cigarette users are recent quitters of combustible cigarettes.25

Epidemiologic studies have been inconsistent regarding whether e-cigarette use among adult smokers is associated with long-term smoking abstinence. Some large population-based surveys have reported that e-cigarette use among combustible cigarette smokers is positively associated with quit attempts and actual quitting.75,76 In contrast, other longitudinal studies have reported no association with cessation78 or the inverse association: more quitting among participants who did not use e-cigarettes. A meta-analysis including 18 observational studies and two trials concluded that e-cigarette use was associated with less cessation.80 For some adult cigarette smokers, e-cigarettes are viewed as a way to evade smoke-free policies and current e-cigarette marketing is seen as reframing smoking as normative and socially acceptable.81

A small number of randomized trials have assessed the effectiveness of nicotine-containing e-cigarettes as a smoking-cessation aid. In New Zealand, participants who received e-cigarettes via mail achieved a similar level of smoking abstinence at six months (7 percent) as those who received vouchers redeemable for nicotine patches (6 percent).82 In Italy, participants given nicotine-containing e-cigarettes were more likely to quit smoking at 12 months (11–17 percent depending on nicotine concentration supplied) than those given non-nicotine e-cigarettes (4 percent), although differences were not statistically significant.83 A systematic review of these studies graded the evidence as “low” that nicotine-containing e-cigarettes improve smoking cessation but noted that more trials are underway.84

Among other factors, whether e-cigarette users are successful in quitting smoking may depend on the type of e-cigarette device and frequency of use.74,77,85 “Tank” devices that deliver more nicotine and daily use may be more effective than “cigalike” devices or nondaily use in achieving quitting.74,77,85

E-cigarettes and Youth Smoking Initiation

Multiple longitudinal studies summarized in a recent meta-analysis86 have shown consistently that adolescents who use e-cigarettes are at elevated risk of progression to combustible cigarette smoking. The association with future smoking persists after adjustment for known smoking risk factors and is independent of use of other tobacco products, such as cigars and smokeless tobacco.87 Several mechanisms may explain the relationship. For example, youths who experiment with e-cigarettes may thereafter perceive cigarettes as less dangerous than they did previously.88 Additionally, youths initially attracted to e-cigarettes, potentially due to greater social acceptability, variety in flavors and styles or lower perceived health risks, may later find conventional smoking more attractive for satisfying nicotine dependence or sensory stimulation.89

In contrast, it is possible that the association between e-cigarettes and smoking is not a causal pathway but rather a reflection of youths with a high affinity for risk-taking trying both e-cigarettes and other forms of tobacco. Some youths may choose to use e-cigarettes in place of smoking. Cigarette smoking among U.S. middle and high school students declined during the same period that e-cigarette use rapidly expanded.90 However, existing tobacco-control measures have contributed to a nearly two-decade decline in U.S. youth smoking, without clear evidence that e-cigarettes accelerated that decline.91

For the dental provider, e-cigarette use by adolescent patients should be considered a strong risk indicator of future smoking and other tobacco use, regardless of the mechanism underlying the association. The U.S. surgeon general concludes that e-cigarette aerosol is itself not harmless and that use of any nicotine-containing product poses dangers to youths.92 Thus, asking and advising young patients about
e-cigarettes are necessary elements to providing tobacco-prevention guidance and counseling.

Patient Communication

Dentists have a professional obligation to act in the interest of their patients’ overall health. Consistent with this responsibility, engaging in tobacco-use prevention and cessation is an essential component of every patient visit. This entails relapse prevention for former users, discouraging initiation among never users and motivating current tobacco users to make a cessation attempt. For the dental patient interested in trying e-cigarettes as a method of quitting combustible tobacco, above all, the clinician should encourage and reinforce that desire to quit.

Specific to e-cigarettes, clinicians should send the clear message that no form of tobacco or nicotine is safe. The healthiest long-term goal is to live completely nicotine- and tobacco-free. However, patients should also understand that combustible cigarettes are more dangerous than e-cigarettes. Limited evidence suggests that e-cigarettes might help some smokers to quit, but at this time, the consistent, high-quality studies needed to reach a scientific consensus are lacking. E-cigarettes are not harmless and their long-term health risks are unknown.

The ADA does not recommend the use of e-cigarettes as a method to quit smoking or as a harm-reduction alternative to other forms of tobacco. The ADA does not support marketing some tobacco products as less harmful than others and does support policies to regulate, limit sales and tax both traditional and nontraditional tobacco products. The American Medical Association and the American Heart Association have similarly taken cautious positions on e-cigarettes, prioritizing prevention of youth use and not recommending e-cigarettes for smoking cessation. In contrast, the Royal College of Physicians in the U.K. has largely embraced e-cigarettes as a safer alternative to smoked tobacco. The dental professional is left to navigate these divergent positions via careful evaluation of the available evidence.

For tobacco-using patients motivated to make a quit attempt, the dental practitioner has multiple evidence-based tobacco cessation approaches on which to rely. Brief counseling, even lasting no more than a few minutes, can increase the probability that a patient remains tobacco-free long-term. The “5 A’s” approach: ASK (about all tobacco use), ADVISE (not to use), ASSESS (readiness to quit), ASSIST (in the quit attempt) and ARRANGE (for follow-up care) is both effective and easily implemented. Pharmacotherapy, which includes both nicotine replacement therapy and the non-nicotine medications bupropion and varenicline, alone or in combination, substantially improves cessation outcomes. Dental professionals are encouraged to refer patients for additional tobacco-cessation support, such as a local tobacco-cessation program and a telephone “quit line,” which has been proven effective and can be accessed at no cost to patients. In California, patients can call 1.800.NO.BUTTS or call 1.800.QUIT.NOW nationwide. Tobacco cessation is an ideal opportunity for interprofessional collaboration with physicians, pharmacists and other health care providers. Receiving assistance from multiple clinician types is more effective than from one clinician type alone.

Conclusion

Quitting tobacco can be extremely difficult. Nicotine is a highly addictive drug that alters brain functioning. Additionally, many tobacco users come to associate particular social or environmental cues with the urge to use tobacco again. Thus, it may take the average cigarette smoker many quit attempts before achieving lasting tobacco cessation. Although the probability that any given quit attempt will succeed is low, dental professionals can increase the chances of success with supportive counseling and proven pharmacological aids, particularly when used in combination.

E-cigarettes are unlikely to make quitting tobacco easy. However, for some patients unwilling to consider other approaches, e-cigarettes could offer a palatable option. For such patients, the clinician must stress the ultimate goal of becoming completely tobacco- and nicotine-free rather than continuing dual use of both e-cigarettes and combustible tobacco. The currently available evidence suggests that e-cigarettes are less dangerous than combustible tobacco for systemic and oral health. However, e-cigarettes are not harm-free and are not proven cessation aids. The tobacco industry did not make major investments in the e-cigarette industry expecting that e-cigarettes would put them out of business.

Dental professionals are trained to have truthful and nuanced conversations with patients. Providers must utilize these communication skills when conveying
the complexity and current uncertainty regarding the health implications of e-cigarettes. In this rapidly changing landscape, the dental provider has a responsibility to remain informed as new evidence and new products emerge with the potential for e-cigarette regulation and practice guidelines in the future.

REFERENCES

66. Cha, Benjamin W. Chaffee, DDS, MPH, PhD, can be reached at benjamin.chaffee@ucsf.edu.
Tobacco Counseling in Dental Settings

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Tobacco use continues to be a major public health epidemic. In California alone, tobacco use kills more than 35,000 people each year — more than in any other state. Dental providers are well-positioned to help prevent tobacco use and promote tobacco cessation among their patients.

Tobacco-cessation interventions provided by dentists, dental hygienists and dental assistants can greatly increase a patient’s likelihood of quitting.

The most common evidence-based intervention for tobacco cessation is known as the 5 As. This systematic approach involves asking clients about their tobacco use, advising users to quit and encouraging nonusers to remain tobacco-free, assessing readiness to quit, assisting with the quitting process and arranging follow-up. Ask every patient about tobacco use at every appointment. With increasing use of noncigarette tobacco products, such as electronic cigarettes, dental providers must ask about all tobacco and nicotine products, not merely, “Do you smoke?” If a patient reports tobacco use, advise the patient to quit. This advice should be clear, strong, nonjudgmental and personalized. Personalized messages include linking oral symptoms to tobacco and discussing the social or economic costs associated with use.

Dental providers must assess the patient’s
MI is a collaborative, goal-oriented motivational interviewing (MI) enhancing motivation to quit through dental providers should focus on and additional information as needed.

Contraindicated) and providing such as a nicotine replacement (unless recommending approved medications, the patient develop a quit plan, tailored to the patient's needs and attempts to develop a cessation plan.

If a patient is not ready to quit, dental providers should focus on enhancing motivation to quit through motivational interviewing (MI). MI is a collaborative, goal-oriented communication style designed to strengthen a person's own motivation and commitment to change. MI incorporates four key elements: partnership (not confrontation), acceptance (not judgment), compassion (not indifference) and evocation (not advice). The Table includes some MI communication strategies.

The final step involves arranging follow-up to reinforce the importance of tobacco cessation and modify quit attempts for those who have been unsuccessful. Tobacco users who have failed in previous quit attempts should be encouraged to continue trying and be reminded that repeated attempts are often necessary.

There is a less time-intensive alternative to the 5 As: ask, advise and refer. Clinicians ask, advise and connect patients to a telephone “quit line,” health professional or local cessation program that will assess, assist and arrange follow-up. The California Smokers’ Helpline offers free telephone counseling, self-help materials and online support in six languages. Dental professionals can provide patients with the telephone number (1.800.NO.BUTTS) or refer patients directly through the new web-based referral interface (forms-nobutts.org/referral). The help line also provides a list of local cessation programs (by county) for patients who would prefer a more intensive cessation program (nobutts.org/county-listing).

TABLE

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<tr>
<th>Patient-Centered Communication Methods (O-A-R-S)</th>
<th>Example actions and/or language</th>
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<tbody>
<tr>
<td>Open-ended questions</td>
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<td><strong>Patient benefits</strong></td>
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<td>Allows patient self-expression.</td>
<td>“What do you see as your biggest challenge?”</td>
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<td>Patient conveys priorities.</td>
<td>“Can you tell me more about that?”</td>
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<tr>
<td><strong>Provider benefits</strong></td>
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<tr>
<td>Learn more about the patient.</td>
<td>“What do you know about the health consequences of smokeless-tobacco use?”</td>
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<td>Set a positive tone for the session.</td>
<td>“What worries you about your cigarette use?”</td>
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<td><strong>Affirmations</strong></td>
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<td>Statements of appreciation.</td>
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<td>Strategically designed to anchor clients in their strengths, values and resources. Authentic observations about the person, behaviors and achievements. Focuses on strengths, not problems.</td>
<td>Patient: “I tried 16 times to stop smoking.” Provider: “Wow, you’ve already shown your commitment to stop smoking. That’s great! More important, you’re willing to try again.”</td>
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<td><strong>Reflections</strong></td>
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<td>Convey provider’s interest and desire to understand. Underscore the importance of what the patient has to say. Encourage patients to speak more.</td>
<td>Patient: “I worry that my daughter will smoke because she sees me smoke.” Provider: “You’re concerned about your daughter and how she sees you smoking.”</td>
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<td><strong>Summaries</strong></td>
<td></td>
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<td>Reflect elements that will aid the patient in moving forward. Providers may strategically select what to include, exclude and emphasize. Can be used to gather more information, link both sides of ambivalence or move in a new direction.</td>
<td>“It sounds like on one hand you enjoy smoking and it helps relax you, but on the other hand it is starting to affect your health and you would like to quit.” “What I hear you saying is that it is very important for you to quit, but you are worried that you may not have the tools to be successful. What can we do now to help you get there?” (open-ended question)</td>
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REFERENCES


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The 5 A’s Flowchart:
A systematic approach to a brief patient conversation

**ASK**
Do you use any form of tobacco?

- **Yes**
  - **ADVISE** tobacco users to quit
  - **ASSESS** willingness to quit within the next 30 days
    - **Yes**
      - Discuss medications, counseling, social support, provide information or connect patient to quitline or local services.
      - **ASSIST** with the quit plan
    - **No**
      - Support continued abstinence; re-evaluate at next visit

- **No**
  - Have you ever used tobacco?
    - **Yes**
      - Support continued abstinence; re-evaluate at next visit
    - **No**
      - For patients who do not use tobacco, provide affirmation and encouragement. Remind youths of the benefits of never starting.

**The key decision point:** A patient’s readiness to quit determines the next steps.

**ARRANGE** for follow-up and continued support

**Great!** If the patient does say no, ask about past use. Did this patient recently quit? Is there risk of relapse or initiation?

**Ask** every patient about tobacco use at every visit. This is your chance to change a life.

**Respond firmly but without judgment.** “The best health advice I can give my patients is to quit using tobacco.”