ORAL MEDICINE

Juuling

BACKGROUND

A new method of delivering nicotine has developed—juuling—and a very trendy behavior for young adults and adolescents. Oral health care providers need to be aware of the phenomenon, its effects, and any adverse health implications. It's also important to recognize the role that oral care providers can play in advising patients about juuling.

JUULING BASICS

The Juul device resembles marijuana-adapted vapor devices and charges on a laptop or other USB port. It's easy to use, discreet, and has no tobacco odor, so it's often used in schools without being noticed. Users can purchase a starter kit for $49 and can share with friends, which makes the cost even less. Users can also purchase "skins" and decorate their devices, making them into a fashion statement. Although the Juul is promoted as a device for those age 21 years and older, adolescents and even children have been known to use them.

The Juul liquid pod product is heated through battery-operated coils. Each pod contains 0.7 mL e-liquid with 5% nicotine by weight, equivalent to about 1 pack of cigarettes. The nicotine-juiced pods come in a variety of exotic scents and flavors. The aerosol produced by the heated liquid, which is in the form of a large puff of smoke, is inhaled and sometimes exhaled and re-inhaled from the mouthpiece. The newer generations of the devices, which may be equipped with a high-capacity battery, deliver 35% to 72% more nicotine than older devices.

As with other vaping devices, Juul devices have been suggested to provide a step-down approach to smoking cessation, delivering a decreased amount of nicotine over time. However, the Juul does not provide any way to vary the nicotine dosage, so it cannot be recommended for those who want to lower their nicotine use or quit it altogether.

EFFECTS ON USERS

Most users report a highly concentrated "hit" of nicotine is not common with most vaping devices. Users often don't recognize the impact of using the device or how much nicotine they're being exposed to. Users report experiencing respiratory symptoms, phlegm, congestion, persistent cough and bronchitis, with burning in the throat when inhaling.

HEALTH IMPLICATIONS

With the increased release of nicotine products and the chemicals associated with vaping devices, the overall health of individuals can be adversely affected. In addition to the discomfort users experience, there have been reports of nicotine exposure leading to insulin resistance and type 2 diabetes, increased heart rate, and higher blood pressure with vaping devices. In addition, changes in the brain related to their use may lead to chronic addiction practices.

As with other e-cigarette devices, various toxic chemicals are released along with nicotine during juuling. Among these chemicals are volatile organic compounds, carbonyls, and particulate matter. These substances affect the pulmonary system, immune system, central nervous system, and oral tissues. Children, pregnant women, the elderly, and persons with chronic diseases are at particular risk.

Long-term results from the damage to various systems and tissues remain to be determined. Among the possible consequences are increased risk of oral cancer, oropharyngeal cancer, and other tissue or cellular disorders.

DENTIST'S ROLE

Advisory Role

Oral health care providers should be equipped to advise potential users of Juul devices and e-cigarettes about the dangers of using these devices. Among the dangers are the fact that most tobacco specialists consider e-cigarettes and vape devices as gateway devices for other addiction devices. In addition, the nicotine is highly addictive regardless of the delivery device. Specific to the Juul device, pleasant flavoring enhances their attractiveness to users, as does the fact that they are considered "glamour" items.

Dentists need to provide potential users with information about the health care issues associated with the use of these devices. For example, chronic tissue irritation and inflammation are detrimental to overall health. Not only the lung tissues but also the esophageal and nasal tissues are adversely affected. Oral tissues exposed to heat and chemicals can suffer melanosis. Nicotine in any form has detrimental effects on young people, pregnant women, and fetuses. In addition, secondhand smoke can be detrimental to people who aren't even using the devices.

Health Provider Responsibilities

In addition to advising patients about the dangers of vaping and juuling, it's important that health care providers monitor patients to

Clinical Significance

Dentists have a significant role in helping young people to avoid making poor choices with respect to smoking and e-cigarette use. Much of the information needs to be gathered and time has to pass to truly understand the effects of these devices. Keeping meticulous records and advising patients about the dangers we can already document are important ways dentists can help consumers to avoid unhealthy behaviors.

detect changes that develop. This can help in answering questions such as whether harmful tissue changes will contribute to a higher rate of human papillomavirus infection, if oropharyngeal or oral cancer rates are increased among people who use these devices, and what long-term effects result from the use of such high quantities of nicotine. Reporting information regarding such concerns will help to establish a registry for cases and contribute to publications that can spread the word about the dangers of vaping and juuling.

Burkhart NW: Is your patient juuling? *RDH* 38:38,40,42-45, 2018

Reprints not available

Benign migratory glossitis

BACKGROUND

Benign migratory glossitis (BMG), also termed geographic tongue, annulus migrans, erythema migrans, benign wandering glossitis, exfoliation areata linguae, and transitory benign plaque of the tongue, is an asymptomatic inflammatory disorder often found on the dorsal surface of the tongue. Its prevalence in multiple studies ranges from 1% and 4.8%. It's more common among children and adults under age 30 years than in other age groups. Clinically, its appearance is as multifocal, annular, erythematous patches that have raised white margins (Figure 1). Many patients are asymptomatic and require no treatment. For symptomatic patients, no treatment has been established as the best course of management. Possible approaches have included antihistamines, anxiolytics, corticosteroids, topical anesthetics, nutritional supplements, and avoiding acidic or spicy foods. A review of the literature was undertaken to determine the best treatment for BMG.

Figure 1. BMG is often described as multifocal, annular, erythematous patches with slightly elevated white margins, resulting in a map-like appearance. (Courtesy of Gushiken de Campos W, Esteves CV, Fernandes LG, et al: Treatment of symptomatic benign migratory glossitis: A systematic review. *Clin Oral Invest* 22:2487-2493, 2018.)

METHODS

The literature search included the databases of the Cochrane Library, EMBASE, LILACS, PubMed, Scopus, and Web of Science. Criteria included English language and evaluation of treatment of symptomatic BMG in children and adults; the time frame extended up to September 2017. Eleven articles were selected for review, covering 150 patients with BMG.

RESULTS

Study quality was very low for 8 studies, low for 1, moderate for 1, and high for 1. Weaknesses often found included small sample size, absence of a control group, unclear methods, and insufficient statistical analysis and reporting.

The treatment methods used most often in these reports were topical triamcinolone acetonide 0.1%, topical tacrolimus 0.1%, topical diphenhydramine, and various nutritional supplements. Five studies reported no benefits with treatment, 5 reported significant improvement of symptoms, and 1 reported total resolution of the problem. The treatment that resulted in total resolution was topical and systemic diphenhydramine 12.5 mg/5 ml 4 times a day used for 2 patients. Symptoms resolved in 24 hours. Treatments producing a significant improvement of symptoms were topical tacrolimus twice daily for 10 to 14 days, topical ozonized olive oil, topical diphenhydramine and lidocaine, and systemic cyclosporine 3 mg/kg/day. The treatments that provided no benefit included topical triamcinolone acetonide 0.1% alone or