Adolescent Oral Health Care

Latest Revision
2025

How to Cite: American Academy of Pediatric Dentistry. Adolescent oral health care. *The Reference Manual of Pediatric Dentistry*. American Academy of Pediatric Dentistry; 2026:366-377.

Abstract

This best practice presents general recommendations for managing the distinct oral health care needs of adolescents. Accurate medical, dental, and social histories are necessary for safe and effective care. Health history forms should allow youth to provide information on topics such as gender, diet, piercings, and risk-taking behaviors (eg, tobacco, alcohol, and drug use; sexual activity). The age and stage of adolescence (early, middle, or late) will impact diagnostic, preventive, restorative, and surgical treatment decisions. Each adolescent oral health topic (caries, fluoride use, oral hygiene, diet management, sealants, professional preventive treatment, restorative dentistry, periodontal disease, malocclusions, third molars, temporomandibular joint disorders, congenitally missing teeth, ectopic eruption, traumatic injuries, and esthetic concerns) has specific recommendations. Additional considerations, including psychosocial development, external influences on behavior and mental health, are discussed. Assent is an important aspect of adolescent oral health care that can foster the patient's emerging independence. Due to the complexity of their unique needs and psychosocial influences, creating and maintaining trust and confidentiality are important when providing oral health care for adolescents. Transition to adult dental care should be discussed as the patient approaches the age of majority and implemented at a time agreed upon by the patient, parent, and practitioner.

This document was developed through a collaborative effort of the American Academy of Pediatric Dentistry Councils on Clinical Affairs and Scientific Affairs to offer updated information and recommendations regarding the management of oral health care for adolescents.

KEYWORDS: PSYCHOSOCIAL DEVELOPMENT; HEALTH BEHAVIORS; MALOCCLUSION; OROFACIAL TRAUMA; MENTAL HEALTH; TRANSITION TO ADULT CARE

Purpose

The American Academy of Pediatric Dentistry (**AAPD**) recognizes that the adolescent patient has unique needs. This best practice addresses these needs and proposes general recommendations for their management. This best practice serves as a summary document; more detailed information regarding these topics is provided in referenced AAPD oral health policies, best practices, and clinical practice guidelines.

Methods

This best practice was developed by the Clinical Affairs Committee, adopted in 1986,[1] and last revised by the Council on Clinical Affairs in 2020.[2] This update includes an electronic search of PubMed/MEDLINE using the terms: (*evidence based dentistry* [**Majr**] OR *dental care for children* [Majr] OR *pediatric dentistry* [Majr] OR *general dentistry* [**Tiab**] OR *dentistry* [Majr]) AND (*gingivitis* [Majr] OR *oral pierc** [Tiab] OR *pit and fissure sealants* [Majr] OR *dental caries* [Majr] OR *tobacco use* [Majr] OR *tobacco, smokeless* [**MeSH**] OR *dental trauma* [Tiab] OR *orofacial trauma* [Tiab] OR *periodontics* [Majr] OR *dental esthetics* [Tiab] OR *bullying* [Majr] OR *mental health* [Majr] OR *social media* [Majr] OR *self-esteem* [Tiab] OR *gender identity* [Majr] OR *feeding and eating disorders* [Majr] OR *diet* [Tiab] OR *nutrition* [Tiab] OR *adolescent* [Majr] OR *teen** [Tiab]); fields: all; limits: humans, English, last 5 years. One thousand eight hundred fifty-seven articles met the defined criteria. Papers for review were chosen from a list of titles generated from the search, references within selected articles, and updates of previously cited publications. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

* *Used in the PubMed search to identify all terms that begin with this truncated base.*

Background

Adolescence refers to the period of accelerated biological growth, changes, and social role transitions that bridges the gap from childhood to adulthood.[3] The definition of adolescence has changed due to accelerated onset of puberty, delayed timing of role transitions (eg, completion of education, marriage, parenthood), and the effect of unprecedented social forces such as social media.[3] Rather than age 10-19 years, it has been defined as the period between 10 and up to 24 years.[3] The American Academy of Pediatrics divides adolescence into 3 age groups including early (ages 11-14), middle (ages 15-17), and late (ages 18-21 and beyond).[4]

The adolescent patient is recognized as having distinctive oral health challenges[5] including heightened risk for dental caries,[6(p257),7] periodontal disease,[6(pp257,258),7] traumatic dental

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **HPV:** Human papilloma virus. **Majr:** MeSH major topic. **MeSH:** Medical subject heading. **NaF:** Sodium fluoride. **OHRQoL:** Oral health-related quality of life. **SHCN:** Special health care needs. **STI:** Sexually transmitted infections. **Tiab:** Title and abstract. **TMJ:** Temporomandibular joint.

injuries,[6(p257)-8] pathologic lesions,[9] and oral manifestations[10] of mental health disorders. Considerations for dental management of adolescents includes an understanding of unique social, behavioral, and psychological factors such as oral hygiene practices; nutritional habits[6(p257),7]; access to routine dental services[6(p257),11]; increased esthetic desire and awareness[7]; dental anxiety or phobia[7]; use of tobacco, nicotine, alcohol, or other recreational drugs[6(p257),7]; desire for oral piercings[12]; risk for pregnancy and sexually transmitted infections[6(p257),7,13]; and mental health[7,10] (eg, eating disorders, depression).

Treatment of the adolescent patient can be multifaceted and complex. Accurate, comprehensive, and up-to-date medical, dental, and social histories are necessary for correct diagnosis and effective treatment planning. Familiarity with the patient's medical history is essential for decreasing the risk of aggravating a medical condition while rendering dental care. In some cases, the parent or family members are unaware of certain conditions (eg, use of contraceptives, pregnancy, mental health disorders) affecting/facing the adolescent patient. Privacy and consent laws for adolescent patients vary by state and affect what health information may be shared with parents.[14] The dental practitioner needs to assure the adolescent patient of trust and confidentiality and can encourage disclosure of sensitive health information by giving the patient the opportunity to complete the health history forms privately. If the parent is unable to supply adequate details regarding a patient's medical history, consultation with the medical health care provider may be indicated.[15,16]

Recommendations

Caries

Adolescence marks a period of significant caries activity for many individuals. Research suggests that the overall caries rate is declining, yet remains highest during adolescence.[17,18] Immature permanent tooth enamel,[19] a total increase in susceptible tooth surfaces, and environmental factors such as diet,[20] independence to seek care or avoid it,[21] a low priority for oral hygiene,[20] and additional social factors[22-27] also may contribute to the upward slope of caries during adolescence. Untreated dental caries and missing teeth have been shown to have a negative impact on oral health-related quality of life (**OHRQoL**); however, restored teeth were not associated with worse OHRQoL.[28,29] The practitioner's emphasis on the positive effects of fluoridation, professional topical fluoride treatment, routine professional care, patient education, and personal hygiene can counteract the risk of caries in the adolescent population.[7,11,30]

Management of caries

Primary prevention

Fluoride: Fluoridation has proven to be safe and highly effective in prevention and control of caries.[31] The adolescent can benefit from fluoride throughout the teenage years and into early adulthood.[7] Although the systemic benefit of fluoride incorporation into developing enamel is not considered necessary past 16 years of age, topical benefits can be obtained throughout life through optimally-fluoridated water, professionally-applied and prescribed compounds, and fluoridated dentifrices.[32,33]

Recommendation: The adolescent should receive maximum fluoride benefit dependent on risk assessment.[33,34] Brushing teeth twice a day with a fluoridated dentifrice is recommended to provide continuing topical benefits.[31] Professionally-applied fluoride treatments should be based on the individual patient's caries-risk assessment, as determined by the patient's dental provider.[31,33] Home-applied prescription-strength topical fluoride products (eg, 0.4% stannous fluoride gel, 0.5% fluoride gel or paste, 0.2% sodium fluoride [NaF] rinse) may be used when indicated by an individual's caries pattern or caries-risk status.[31,32] Systemic fluoride intake via optimal fluoridation of drinking water is recommended for all individuals. Prescription fluoride supplements may be considered until at least 16 years of age for high caries-risk individuals who do not consume optimally-fluoridated drinking water. Supplements should be given only after all other sources of fluoride have been evaluated.[31]

Oral hygiene: Adolescence can be a time of heightened caries activity and periodontal disease due to an increased intake of cariogenic substances and inattention to oral hygiene procedures.[20,22] Adolescents become more independent, and toothbrushing may become less of a priority. Adolescent patients need encouragement and motivation to brush with fluoridated toothpaste and floss regularly. Discussions regarding oral hygiene can highlight the benefits of topical fluoride and the importance of plaque removal to reduce caries risk, decrease halitosis, and improve esthetics.[7,20]

Recommendations: Oral health care professionals should educate and motivate adolescents to maintain personal oral hygiene through daily plaque removal, including flossing, with the frequency and technique based on the individual's disease pattern and oral hygiene needs.[20] Professional removal of plaque and calculus is highly recommended for the adolescent, with the frequency of such intervention based on the individual's assessed risk for caries and periodontal disease as determined by the patient's dental professional.[20,35,36]

Diet management: Many adolescents are exposed to and consume high quantities of refined carbohydrates and acidic beverages in the form of snack foods, soda, coffee, energy drinks, and sports drinks.[7,23-25,29,37-39] The adolescent can benefit from diet analysis and modification.

Recommendation: Diet analysis, along with professionally determined recommendations for maximal general and dental health, should be part of an adolescent's oral health management.[40,41]

Sealants: Sealant placement is an effective caries-preventive technique that may be considered on an individual basis. Sealants have been recommended for any tooth, primary or

permanent, that is judged to be at risk for pit and fissure caries.[11,25,42-44] Caries risk may increase due to changes in patient habits, oral microflora, or physical condition, and unsealed teeth subsequently might benefit from sealant applications.[35]

Recommendations: Adolescents at risk for caries should have sealants placed. Because an individual's caries risk may change over time, reassessment of sealant need should be performed periodically throughout adolescence.[35]

Secondary prevention

Professional preventive care: Professional preventive dental care, on a routine basis, may prevent oral disease or disclose existing disease in its early stages. An adolescent patient whose oral health has not been monitored routinely by a dentist may have advanced caries, periodontal conditions, or other oral involvement urgently in need of professional evaluation and extensive treatment.

Recommendations: Timing of periodic oral examinations should take into consideration the individual's needs and risk indicators to determine the most cost-effective, disease-preventive benefit to the adolescent.[34,36] Initial and periodic radiographic examination should be part of a clinical evaluation. The type, number, and frequency of radiographs should be determined only after an oral examination and history taking. Previous images should be available, whenever possible, for comparison. Currently accepted recommendations for radiographic exposures (ie, selection of imaging based upon medical history, caries risk, history of periodontal disease, and growth and development assessments) should be followed.[45]

Restorative dentistry: Evidence has demonstrated that use of sealants, 5% sodium fluoride varnish, 1.23% acidulated phosphate fluoride (APF) gel, and 5000 ppm fluoride toothpaste for noncavitated caries lesions at specific sites in primary and permanent teeth and use of silver diammine fluoride (SDF) in advanced cavitated caries lesions on primary teeth can arrest or reverse those lesions.[46-48] When remineralization of demineralized tooth surfaces is not successful, as demonstrated by progression of caries lesions clinically or radiographically, dental restorations become necessary. Preservation of tooth structure, esthetics, and each individual patient's needs are considerations in selecting restorative materials.[49] For example, molars with extensive caries or malformed, hypoplastic, or hypomineralized enamel may be vulnerable to breakdown and require full coverage restorations to optimize oral health.[50,51] Small noncavitated interproximal caries lesions and post-orthodontic white spot lesions may be treated by resin infiltration.[46,51-54]

Recommendations: Each adolescent patient and restoration must be evaluated on an individual basis. Preservation of non-carious tooth structure is desirable, although hypomineralized tooth structure may require more extensive restorative treatment. Referral should be made when treatment needs are beyond the treating dentist's scope of practice.[55]

Periodontal diseases

Adolescence can be a critical period for one's periodontal health. Epidemiologic and immunologic data suggest that irreversible tissue damage from periodontal disease begins in late adolescence and early adulthood.[6(p40)] Gingival disease becomes prevalent in adolescence.[36,56(p371)] Dental caries, mouth breathing, dental crowding, and eruption of teeth predispose adolescents to gingivitis.[36,56(p371)] Hormonal changes during adolescence are suspected to be a cause of the increased prevalence.[56(p371)] Studies have suggested an increase in sex hormones during puberty affects the composition of the subgingival microflora and causes exaggerated gingival inflammation, even in the presence of a small amount of plaque.[57] Other studies suggest circulating sex hormones may alter capillary permeability and increase fluid accumulation in the gingival tissues[58]; this inflammatory gingivitis is believed to be transient as the body acclimates to the ongoing presence of the sex hormones.[59] Hormonal fluctuations due to pregnancy or gender-affirming care may have periodontal implications. An increasing number of transgender and gender diverse youth are seeking medical care[60,61] that may include puberty blockers or other hormonal therapies.[62] Further studies are needed to determine the effects of hormone regimens on the periodontium of adolescents.

Conditions affecting the adolescent include, but are not limited to, dental plaque/biofilm gingivitis, non–dental plaque-induced gingival disease, periodontitis (formerly categorized as chronic or aggressive), necrotizing periodontitis, periodontitis as a manifestation of systemic disease, periodontal abscess, endodontic-periodontal lesions, mucogingival deformities (ie, gingival recession), occlusal trauma, and peri-implant diseases.[36,56(pp371-377)] The severity of periodontal conditions are assessed by clinical and radiographic examination and can be further characterized by staging and grading the clinical presentation.[63] Early diagnosis of periodontal disease in children is important, especially when there are systemic risk factors (eg, poorly-controlled diabetes, leukemia, smoking, malnutrition). Refer to the AAPD's *Periodontal Conditions in Pediatric Dental Patients*[36] for further information. Personal oral hygiene and regular professional intervention can help minimize the occurrence of these conditions and prevent irreversible damage.

Recommendations: The adolescent will benefit from an individualized preventive dental health program, which includes the following items aimed specifically at periodontal health.

- Patient education emphasizing the etiology, characteristics, and prevention of periodontal diseases as well as self-hygiene skills.[64,65]
- A personal, age-appropriate oral hygiene program including plaque removal, oral health self-assessment, and diet. Sulcular brushing and flossing should be included in plaque removal, and frequent follow-up to determine adequacy of plaque removal and improvement of gingival health should be considered.[36,65]
- Periodontal assessment during initial and routine dental examinations with professional intervention, the frequency and extent of which should be based

on individual needs. Periodontal assessments should include evaluation of personal oral hygiene success, periodontal status, and potential complicating factors such as malocclusion, medical/systemic conditions, or habits that predispose to periodontal disease.

- Basic simplified periodontal examination using 6 index teeth (permanent first molars, maxillary right central incisor, mandibular left central incisor).[36] Assessment should include gingival topography, periodontal pocket depths, recession, attachment levels, signs of inflammation (ie, bleeding on probing, suppuration), furcation involvement, presence and degree of plaque and calculus, and plaque retention factors, and mobility of teeth. Radiographic assessment is important for determining presence of subgingival calculus, alveolar bone height, and bony architecture. All findings should be documented as part of the patient's comprehensive dental record.
- Determination of need for procedures (eg, tooth exposure,[66(p512)] frenectomy,[66(p517)] fiberotomy,[67] gingival augmentation,[36] implant placement[36]) to facilitate orthodontic treatment.

Patients with progressive periodontal disease should be referred when the treatment needs are beyond the treating dentist's scope of practice.[36,65]

Occlusal considerations

The need to address malocclusion increases during adolescence, as environmental and/or genetic contributors to malocclusion become more readily apparent by this stage of development. Numerous methods exist to treat malocclusions and associated orofacial esthetic concerns, temporomandibular joint dysfunction, and periodontal conditions. Third molar malposition and temporomandibular disorders require special attention to avoid long-term problems. Congenitally missing teeth present complex problems for the adolescent and often require combined orthodontic, restorative, and prosthodontic care for satisfactory resolution.

Malocclusion: Any tooth/jaw positional problems that present significant esthetic, functional, physiological, or emotional dysfunction are potential hardships that can impact an adolescent's OHRQoL.[28,68-72] These can include single or multiple tooth malpositioning, tooth/jaw size discrepancies, and craniofacial disfigurements. Adolescents with Class II and III malocclusions or anterior overjet greater than 6 mm reported a significant impact on their OHRQoL.[68-71]

Recommendations: Malposition of teeth, malrelationship of teeth to jaws, tooth/jaw size discrepancy, skeletal malrelationship, or craniofacial malformation or disfigurement that presents functional, esthetic, physiological, or emotional problems for the adolescent should be referred for evaluation when the treatment needs are beyond the treating dentist's scope of practice. Treatment of malocclusion by a dentist should be based on professional diagnosis, available treatment options, patient motivation and readiness, and other factors to maximize progress.[73] Optimal oral hygiene and routine dental examinations are important to prevent demineralization during orthodontic treatment.

Third molars: Third molars can present acute and chronic problems for the adolescent. Impaction or malposition leading to such problems as pericoronitis, caries, cysts, or periodontal problems merits evaluation for removal.[74,75] Considerations for extraction also include the functional role of the third molar for each individual patient.

Recommendations: Evaluation of third molars, including radiographic diagnostic aids, should be an integral part of the dental examination of the adolescent.[76] Refer to the AAPD's *Management Considerations for Pediatric Oral Surgery*[74] for further discussion. Referral should be made if treatment needs are beyond the treating dentist's scope of practice.

Temporomandibular joint (TMJ) problems: Disorders of the TMJ can occur at any age, but symptoms appear more prevalent in adolescence than in childhood.[77] A recent systematic review reported that adolescent females had more TMJ disorders than males.[77]

Recommendations: Evaluation of the TMJ and related structures should be a part of the examination of the adolescent.[78,79] An adolescent comprehensive dental examination should incorporate a screening evaluation of the TMJ and surrounding area that includes a history of symptoms, assessment of jaw movements and, if indicated, radiographic imaging. Referral should be made when the diagnostic and/or treatment needs are beyond the treating dentist's scope of practice.[74,80,81]

Congenitally missing teeth: The impact of a congenitally missing permanent tooth on the developing dentition can be significant.[82] When treating adolescent patients who are congenitally missing teeth, considerations include many factors such as esthetics, patient age, growth potential, and orthodontic, periodontal, and oral surgical needs.[73,82-85]

Recommendations: Treatment planning for patients who are congenitally missing permanent teeth should include both immediate and long-term management. Referral should be made when the treatment needs are beyond the treating dentist's scope of practice. Due to the complexity of the growing adolescent, a team approach may be indicated.[76,82]

Ectopic eruption: Abnormal eruption patterns of the adolescent's permanent teeth can contribute to root resorption, bone loss, gingival defects, space loss, and esthetic concerns. Early diagnosis, including an individualized radiographic examination,[45] is important and can result in a healthier and more esthetic dentition. Prevention and treatment may include extraction of deciduous teeth, surgical intervention, and/or endodontic, orthodontic, periodontal, and/or restorative care.[86-88]

Recommendations: The dentist should be proactive in diagnosing and treating ectopic eruption and impacted teeth in the young adolescent.[74] Referral should be made when the treatment needs are beyond the treating dentist's scope of practice.[76]

Traumatic injuries

Up to 25% of children and up to 33% of adults have experienced dental trauma.[89] Potential for traumatic dental injuries is heightened during adolescence due to increased risk of motor vehicle collisions and physical assault.[90] Other common causes of dental trauma include sports, accidents, violence, or recreational activities.[91-95] Males are more frequently injured across all age groups.[94] The administrators of youth, high school, and college organized sports have demonstrated that dental and facial injuries can be reduced significantly by introducing mandatory protective equipment such as face guards and mouthguards.[96-98] Additionally, youth participating in leisure activities such as skateboarding, roller skating, trampolining, and bicycling also benefit from appropriate use of mouthguards and protective equipment.[7,96,99] Implementation of a comprehensive trauma prevention program in dental practices may help reduce the incidence of traumatic injury to the adolescent dentition. This prevention plan can include assessment of the patient's sport or activity, including level and frequency of activity.[96-98] The extent of dental traumatic injuries cannot always be determined without radiographs, and dental injuries require clinical and radiographic monitoring of outcomes.[100] Long-term sequelae of traumatic injuries can affect well-being, speech, need for complex care, and OHRQoL.[7]

Recommendations: Timely management of traumatic dental injuries is critical to improve prognosis and optimize treatment outcomes. Prior to the dental trauma assessment, clinicians should verify their patient's immunization status and obtain a thorough medical history. Athletes will benefit from the recommendation and fabrication of an age-appropriate, sport-specific, and properly-fitted mouthguard/faceguard.[96-98] Patients with sports guards should be warned that altering the protective equipment may disrupt the fit and retention of the appliance. In addition, players and parents must be informed that injury may occur even with properly-fitted protective equipment.[96-98]

Additional considerations in oral/health care of the adolescent

The adolescent can present particular psychosocial characteristics that impact the health status of the oral cavity, care seeking, and compliance. The development of self-concept,[101] emergence of independence,[21] and sense of coherence (ie, perception of the world as meaningful and manageable)[30] are several of the psychodynamic factors impacting dental health during this period. Peer influences can have both positive and negative effects on adolescent health behaviors and are mediated by culture, environment, and other factors.[102-104] Relatedly, social media has greatly changed the ways in which adolescents receive, process, and respond to health information.[105] Oral health promotion via social media can positively influence oral health behaviors and knowledge among teenagers.[106-108] Social media influencers may be effective in building trust and promoting health among followers but may spread misinformation when they lack subject-matter expertise.[105]

Ways in which adolescent autonomy, peer influences, and social media affect oral health attitudes and behaviors include

- dietary choices (eg, fads, freedom to snack, access to carbohydrates, increased energy needs).
- use of tobacco, alcohol, and drugs.
- sexual health-risky behaviors.
- motivation for maintenance of good oral hygiene (eg, esthetics, reduce risk of halitosis).
- adolescent as responsible for care.

Seeking assent from adolescents for treatment can foster the moral growth and development of autonomy in young patients.[109] Refer to the AAPD's *Informed Consent*[110] for further information.

Esthetic concerns: Adolescents may prioritize esthetics among their oral health concerns. Self-perceptions of dental appearance can impact self-esteem.[111-113] Malocclusions, malpositioned teeth, tooth discoloration, and other esthetic concerns can make youth susceptible to bullying.[114-116] Bullying can have detrimental effects on the mental health of children and adolescents, including lowered self-esteem and depression.[117,118] Orthodontic treatment can positively impact self-esteem and OHRQoL in children and adolescents.[119]

Adolescents may desire to improve esthetics of the dentition by tooth whitening and removal of stained areas or defects. Indications for the appropriate use of tooth-whitening methods and products are dependent upon correct diagnosis and consideration of eruption pattern of the permanent dentition.[120] Bleaching agents, microabrasion, esthetic restorations, or a combination of treatments all can be considered.[121-124]

Recommendations: Dentists should inquire about and address the esthetic concerns voiced by adolescent patients. For the adolescent patient, judicious use of bleaching can be considered part of a comprehensive, sequenced treatment plan that takes into consideration the patient's dental developmental stage, oral hygiene, and caries status. A dentist should monitor the bleaching process, ensuring the least invasive, most effective treatment method. Dental professionals also should consider possible side effects when contemplating dental bleaching for adolescent patients.[121,122]

Tobacco, nicotine, alcohol, and recreational drug use: Significant oral, dental, and systemic health consequences and death are associated with all current forms of tobacco use. These include the use of products such as cigars, cigarettes, snuff, hookahs, smokeless tobacco, pipes, bidis, kreteks, dissolvable tobacco, pouches, and electronic cigarettes.[125,126] Smoking and smokeless

tobacco use primarily are initiated and established during adolescence.[127-130] Use of tobacco products, electronic cigarettes, alcohol, and recreational drugs increases risk of certain cancers,[131,132] cardiovascular disease,[133,134] and stroke[134]. Oral effects of cannabis use can include dry mouth, heightened caries risk, pathologic lesions (eg, leukoedema, erythroplakia), stomatitis, and candidiasis.[135,136] The developing adolescent brain is susceptible to changes in neural reward pathways, and opioids prescribed for dental procedures may lead to persistent misuse by patients.[137,138]

Recommendations: Oral health care professionals should ask adolescent patients about their use of tobacco, alcohol, cannabis and other substances.[139] The oral and systemic consequences of substance use should be part of each patient's oral health education.[140-142] Dental practices should implement protocols to assist those in need of further referrals and interventions, including appropriate educational and counseling services.[129,143] Oral lesions associated with substance use should be addressed, and patients should be referred to other specialists (eg, oral surgeons, oral pathologists) if the treatment needs are beyond the treating dentist's scope of practice. Clinical findings and management pathways are further discussed in the AAPD's policies on tobacco use, electronic nicotine delivery systems, and substance misuse.[140-142]

Oral piercing: Intraoral and perioral piercing can have local and systemic adverse effects.[12,144] Risks include, but are not limited to, pain, bleeding, swelling, hematoma, delayed healing, nerve damage, abscess, blood-borne infections (eg, hepatitis B or C, human immunodeficiency virus [HIV], Epstein-Barr virus [EBV], tetanus, tuberculosis), endocarditis, metal hypersensitivity, choking from loose jewelry, enamel fractures, gingival trauma, periodontal recession, speech impediment, and swallowing difficulties or aspiration.[7,12,145]

Recommendations: Piercing and the use of jewelry on intraoral and perioral tissues should be discouraged due to potential for pathologic conditions and sequelae.[12] Prevention of complications begins with oral health education regarding these adverse effects.[146]

Pregnancy: The pregnant adolescent can be affected by physiological changes to the oral cavity (eg, gingivitis, pregnancy-associated dry mouth, pyogenic granuloma).[147]

Recommendations: A thorough medical history of the adolescent female patient includes current pregnancy status. Comprehensive care during pregnancy should involve assessment of caries and periodontal disease risks along with discussion of the importance of a healthy diet, fluoride, and oral hygiene.[147]

Sexually transmitted infections: The prevalence of sexually transmitted infections (**STI**) in adolescents, specifically in the ages of 15-19 years, continues to rise.[13] Examination for oral signs of STI and management or referral by the provider will help minimize health consequences and spread. Because human papilloma virus (**HPV**) has shown a relationship with oral and oropharyngeal cancers, dentists are in a unique position to discuss the HPV vaccination with patients and their parents.[9]

Recommendations: Examination for oral signs of STI should be part of comprehensive care delivered to the adolescent patient. The examination should include identifying oral manifestations of STI as well as education on the risk of transmission during unprotected oral sex and adoption of barrier techniques (eg, condoms, dental dams) for prevention; referral for counseling and treatment is recommended when indicated.[13] Patients also should be educated on HPV and available vaccination to prevent risk of infection.[9]

Behavioral considerations: Adolescents may exhibit a wide range of behaviors in the dental setting due to pain, anxiety, phobia, sensory triggers, past traumatic events, intellectual disability, or otherwise.[22] As with younger children, individualized behavior guidance will help to allay fears, build trust, and instill a positive attitude toward dental care among adolescent patients.[148]

Recommendations: Oral health care professionals should approach all patients with compassion and empathy, utilizing behavior guidance strategies that will enable successful completion of treatment. Ways to increase patient comfort may range from nonpharmacologic techniques (eg, breathing relaxation, biofeedback, desensitization, sensory adaptations) to use of anxiolytic and sedative agents.[148]

Mental health considerations: Mental health disorders among children and adolescents continue to be a significant public health concern in the US.[149] Depressive disorders can affect oral hygiene, leading to increased risk for caries, avoidance of dental visits, and lowered self-esteem.[10] Patients with eating disorders may present with oral manifestations[150,151] (eg, perimyolysis/severe enamel erosion in patients with bulimia) that benefit from additional dental interventions.

Recommendations: Dental professionals should obtain a thorough medical history for their patients, including psychiatric diagnoses and relevant medications, to better understand the impact of mental health on the oral health of their adolescent patients. In cases in which a patient discloses psychiatric concerns that have not yet been addressed by a mental health care provider, the dentist may help the patient family obtain needed counseling through outreach and referral networks.

Transitioning to adult care: As adolescent patients approach the age of majority, the patient and parent will benefit from discussion with their oral health care professional about transitioning to a dentist who is knowledgeable in adult oral health care. The adult's oral health needs may go beyond the scope of the pediatric dentist's training. The transitioning adolescent should continue professional oral health care in an environment sensitive to his/her individual needs. Many adolescent patients independently will choose the time to seek care from

a general dentist and may elect to seek treatment from a parent's primary care provider. In some instances, however, the treating pediatric dentist will be required to suggest transfer to adult care.

Pediatric dentists are concerned about limited access to oral health care for individuals with special health care needs[55] as they reach the age of majority. Pediatric hospitals, by imposing age restrictions, can create a barrier to care for these patients. Transitioning to a dentist who is knowledgeable and comfortable with adult oral health care needs is important and, in some instances, difficult due to a lack of trained providers willing to accept this responsibility. Successful transitioning from pediatric to adult special-needs dentistry involves the patient and his caregiver(s), adequate preparation, and understanding of the complex situations relating to care.[55]

Recommendations: At a time agreed upon by the patient, parent, and pediatric dentist, the patient should be transitioned to a dentist knowledgeable and comfortable with managing that patient's specific oral care needs. For the patient with special health care needs, in cases where it is not possible or desired to transition to another practitioner, the dental home can remain with the pediatric dentist and referrals for specialized dental care should be recommended when needed.[55]

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