

Adolescent Oral Health Care

Latest Revision

2020

How to Cite: American Academy of Pediatric Dentistry. Adolescent oral health care. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2023:317-26.

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 (e.g., tobacco, alcohol, and drug use; sexual activity). Transgender and gender diverse youth may be at increased risk for oral, physical, and psychosocial conditions (e.g., perimyolysis due to bulimia). The age and stage of adolescence (early, middle, late) will impact diagnostic, preventive, and restorative 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. Assent is an important aspect of adolescent oral health care that can foster the patient's emerging independence. 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. 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.

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: ADOLESCENT; ORAL HEALTH; ORAL SUBSTANCE ABUSE; RISK HEALTH BEHAVIOR; TONGUE PIERCING; 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 unique 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 and clinical practice guidelines.

Methods

This best practice was developed by the Clinical Affairs Committee and adopted in 1986.¹ This document by the Council on Clinical Affairs is a revision of the previous version, last revised in 2015.² The update includes an electronic search using the term adolescent combined with: dental, gingivitis, oral piercing, sealants, oral health, caries, tobacco use, dental trauma, orofacial trauma, periodontal, dental esthetics, smokeless tobacco, nutrition, and diet; fields: all; limits: humans, English, clinical trials. The reviewers agreed upon the inclusion of 105 electronic and hand searched articles that met the defined criteria. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

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 (e.g., 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 three age groups including early (ages 11-14), middle ages 15-17), and late (ages 18-21).⁴

The adolescent patient is recognized as having distinctive needs⁵ due to: (1) a potentially high caries rate; (2) a tendency for poor oral hygiene, nutritional habits, and routine oral health care access; (3) increased risk for periodontal disease and traumatic injury; (4) an increased esthetic desire and awareness; (5) increased risk for periodontal disease and traumatic injury; (6) dental phobia; (7) potential use of tobacco, nicotine, alcohol, and other recreational drugs; (8) desire for oral piercings; (9) increased risk of pregnancy or sexually transmitted infections; (10) eating disorders; and (11) unique social and psychological needs.⁶⁻¹¹

Treatment of the adolescent patient can be multi-faceted 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

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **HPV:** Human papilloma virus. **NaF:** Sodium fluoride. **OHRQoL:** Oral health-related quality of life. **SHCN:** Special health care needs. **TMJ:** Temporomandibular joint.

care. In some cases, the parent or family members are unaware of certain conditions affecting/facing the adolescent patient. The dental practitioner needs to assure the adolescent patient of trust and confidentiality in certain situations. If the parent is unable to provide adequate details regarding a patient's medical history, consultation with the medical health care provider may be indicated.¹²

There is a growing number of adolescents who experience gender dysphoria and may be considering or undergoing gender identity-related medical and health care services.^{13,14} The current prevalence of transgender and non-conforming youth is about two percent.¹⁵ Health history forms should allow youth to provide information on gender, legal and preferred name, and preferred pronouns.¹⁶ Dental office staff should determine preferences, and terminology used should be consistent by all staff. Transgender and gender diverse youth may be at increased risk for eating disorders or substance use disorders.^{17,18} Special attention should be given to identifying dental and systemic conditions that may be linked to such disorders.

Recommendations

This best practice addresses some of the special needs within the adolescent population and proposes general recommendations for their management.

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.¹⁹ Immature permanent tooth enamel,²⁰ a total increase in susceptible tooth surfaces, and environmental factors such as diet, independence to seek care or avoid it, a low priority for oral hygiene, and additional social factors also may contribute to the upward slope of caries during adolescence.²¹⁻²⁵ 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.²⁶ It is important for the dental provider to emphasize the positive effects that fluoridation, professional topical fluoride treatment, routine professional care, patient education, and personal hygiene can have in counteracting the changing pattern of caries in the adolescent population.⁶⁻⁸

Management of caries

Primary prevention

Fluoride: Fluoridation has proven to be safe and highly effective in prevention and control of caries.²⁷ The adolescent can benefit from fluoride throughout the teenage years and into early adulthood.⁸ Although the systemic benefit of fluoride incorporation into developing enamel is not considered necessary past 16 years of age, topical benefits can be obtained through optimally-fluoridated water, professionally-applied and prescribed compounds, and fluoridated dentifrices.^{28,29}

Recommendation: The adolescent should receive maximum fluoride benefit dependent on risk assessment.^{29,30}

- brushing teeth twice a day with a fluoridated dentifrice is recommended to provide continuing topical benefits.²⁷
- professionally-applied fluoride treatments should be based on the individual patient's caries-risk assessment, as determined by the patient's dental provider.^{27,29}
- home-applied prescription strength topical fluoride products (e.g., 0.4 percent stannous fluoride gel, 0.5 percent fluoride gel or paste, 0.2 percent sodium fluoride [NaF] rinse) may be used when indicated by an individual's caries pattern or caries risk status.²⁷
- systemic fluoride intake via optimal fluoridation of drinking water or professionally-prescribed supplements is recommended to 16 years of age. Supplements should be given only after all other sources of fluoride have been evaluated.²⁷

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.²¹ Adolescents become more independent and tooth-brushing 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 benefit of the topical effect of fluoride, removal of plaque from tooth surfaces, and also decrease halitosis and improve esthetics.^{8,31}

Recommendations:

1. Adolescents should be educated and motivated 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.³¹
2. Professional removal of plaque and calculus is recommended highly for the adolescent, with the frequency of such intervention based on the individual's assessed risk for caries/periodontal disease as determined by the patient's dental provider.^{31,32}

Diet management: Many adolescents are exposed to and consume high quantities of refined carbohydrates and acid-containing beverages in the form of soda, high-energy sports drinks, and junk food and with introduction of coffee.^{8,22,23,25,33} 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 dental health management.³⁴

Sealants: Sealant placement is an effective caries-preventive technique that should 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.^{7,23,36-38} Caries risk may increase due to changes in patient

habits, oral microflora, or physical condition, and unsealed teeth subsequently might benefit from sealant applications.³⁷

Recommendations: Adolescents at risk for caries should have sealants placed. An individual's caries risk may change over time; periodic reassessment for sealant need is indicated throughout adolescence.³⁷

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. The adolescent patient whose oral health has not been monitored routinely by a dentist may have advanced caries, periodontal disease, or other oral involvement urgently in need of professional evaluation and extensive treatment.

Recommendations:

1. 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.³⁰
2. 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. Previously exposed radiographs should be available, whenever possible, for comparison. Currently accepted recommendations for radiographic exposures (i.e., appropriate films based upon medical history, caries risk, history of periodontal disease, and growth and development assessments) should be followed.³⁸

Restorative dentistry: There is data to suggest arrest or reversal of noncavitated caries lesions using sealants, five percent NaF varnish, 1.23 percent acidulated phosphate fluoride (APF) gel, and 5000 parts per million fluoride toothpaste for specific sites in primary and permanent teeth and, in advanced cavitated carious lesions on primary teeth, the use of 38 percent silver diamine fluoride (SDF).³⁹ In cases where remineralization of non-cavitated, demineralized tooth surfaces is not successful, as demonstrated by progression of carious lesions, dental restorations are necessary. Preservation of tooth structure, esthetics, and each individual patient's needs must be considered when selecting a restorative material.⁴⁰ Molars with extensive caries or malformed, hypoplastic or hypomineralized enamel for which traditional amalgam or composite resin restorations are not feasible may require full coverage restorations.³⁷ Small noncavitated interproximal carious lesions and facial post orthodontic white spot lesions may be treated by resin infiltration.^{37,41,42}

Recommendation: Each adolescent patient and restoration must be evaluated on an individual basis. Preservation of non-carious tooth structure is desirable. Referral should be made when treatment needs are beyond the treating dentist's scope of practice.³⁷

Periodontal diseases

Adolescence can be a critical period for the human being's periodontal status. Epidemiologic and immunologic data suggest that irreversible tissue damage from periodontal disease begins in late adolescence and early adulthood.^{10,43} Gingival disease becomes prevalent in adolescence.^{44,45} Dental caries, mouthbreathing, crowding, and eruption of teeth predispose adolescents to gingivitis.⁴⁴ Hormonal changes during adolescence are suspected to be a cause of the increased prevalence⁴⁵, with studies suggesting that the increase in sex hormones during puberty affects the composition of the subgingival microflora by modifying the gingival inflammatory response and causing exaggerated gingival inflammation, even in the presence of a small amount of plaque.⁴⁴ Other studies suggest circulating sex hormones may alter capillary permeability and increase fluid accumulation in the gingival tissues, and this inflammatory gingivitis is believed to be transient as the body accommodates to the ongoing presence of the sex hormones.⁴⁶

Conditions affecting the adolescent include, but are not limited to, dental plaque biofilm gingivitis, nondental plaque-induced gingival disease, periodontitis (including chronic and aggressive forms), necrotizing periodontitis, periodontitis as a manifestation of systemic disease, periodontal abscess, endodontic-periodontal lesions, mucogingival deformities (i.e., gingival recession), occlusal trauma, and peri-implant diseases.^{44,45} The severity of periodontal conditions are assessed by clinical and radiographic examination and can be further characterized by staging and grading the clinical presentation.⁴⁷ Early diagnosis of periodontal disease in children is important, especially when there are systemic risk factors (e.g., poorly-controlled diabetes, leukemia, smoking, malnutrition). Refer to AAPD's *Classification of Periodontal Diseases in Infants, Children, Adolescents and Individuals with Special Health Care Needs* for further information.⁴⁴ Personal oral hygiene and regular professional intervention can help minimize 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.^{45,48,49}
- 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.⁴⁸⁻⁵⁰
- periodontal assessment during initial and routine dental examinations with professional intervention, the frequency of which should be based on individual needs and 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.

Comprehensive periodontal examination includes an assessment of gingival topography; probing depth; recession; attachment levels; bleeding on probing; suppuration; furcation; presence and degree of plaque, calculus, and gingival inflammation; mobility of teeth; periodontal charting; and radiographic periodontal diagnosis should be a consideration when caring for the adolescent. The extent and nature of the periodontal evaluation should be determined professionally on an individual basis. Those patients with progressive periodontal disease should be referred when the treatment needs are beyond the treating dentist's scope of practice.^{44,45,48,49}

- appropriate evaluation for procedures to facilitate orthodontic treatment including, but not limited to, tooth exposure, frenectomy, fibrotomy, gingival augmentation, and implant placement.⁴⁵

Occlusal considerations

Malocclusion can be a significant treatment need in the adolescent population as both environmental and/or genetic factors come into play. Although the genetic basis of much malocclusion makes it unpreventable, numerous methods exist to treat the occlusal disharmonies, temporomandibular joint dysfunction, periodontal disease, and disfigurement which may be associated with malocclusion. Within the area of occlusal problems are several tooth/jaw-related discrepancies that can affect the adolescent. 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, physiologic, or emotional dysfunction are potential difficulties for the adolescent. These can include single or multiple tooth malpositions, tooth/jaw size discrepancies, and craniofacial disfigurements. Malocclusion can affect the oral health quality of life for adolescents. Adolescents with Class II and III malocclusions or anterior overjet greater than six millimeters reported a significant impact on their oral health related quality of life.⁵¹⁻⁵⁵

Recommendations:

1. Malposition of teeth, malrelationship of teeth to jaws, tooth/jaw size discrepancy, skeletal malrelationship, or craniofacial malformations or disfigurement that presents functional, esthetic, physiologic, or emotional problems for the adolescent should be referred for evaluation when the treatment needs are beyond the treating dentist's scope of practice.
2. 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.⁵⁶ 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.⁵⁷⁻⁵⁹ The role of the third molar as a functional tooth also should be considered.

Recommendations: Evaluation of third molars, including radiographic diagnostic aids, should be an integral part of the dental examination of the adolescent.³¹ Refer to AAPD's *Management Considerations for Pediatric Oral Surgery and Oral Pathology*.⁵⁷ 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.^{60,61} A recent study reported that adolescent females had more TMJ disorders than males.⁵²

Recommendations: Evaluation of the TMJ and related structures should be a part of the examination of the adolescent. An adolescent comprehensive dental examination should incorporate a screening evaluation of the TMJ and surrounding area to include a screening history for symptoms, clinical examination and evaluation 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.^{57,60,61}

Congenitally missing teeth: The impact of a congenitally missing permanent tooth on the developing dentition can be significant.⁶² When treating adolescent patients who are congenitally missing teeth, many factors (e.g., esthetics; patient age; growth potential; orthodontic, periodontal, and oral surgical needs) must be taken into consideration.^{56,62-64}

Recommendations: Evaluation 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.^{62,65}

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 and treatment of ectopically erupting teeth 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.⁶⁶⁻⁶⁸

Recommendations: The dentist should be proactive in diagnosing and treating ectopic eruption and impacted teeth in the young adolescent.⁵⁷ Early diagnosis, including appropriate radiographic examination,³⁸ is important. Referral should be made when the treatment needs are beyond the treating dentist's scope of practice.⁶⁵

Traumatic injuries

Epidemiological studies have shown up to 25 percent of adolescents and adults experienced dental trauma, with most of these injuries involving maxillary central incisors from falls, collisions, playing sports, accidents, violence, or recreational activities.⁶⁹⁻⁷¹ The prevalence of injuries reported from studies around the world shows a wide range from six percent to 59 percent, depending on the country and type of injury.⁷⁰ Dental traumatic injuries are associated mostly commonly with falls or collisions, and males are more frequently injured across all age groups.⁶⁹ All sporting activities have an associated risk of orofacial injuries due to falls, collisions, and contact with hard surfaces.⁷² 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.⁷³ Additionally, youth participating in leisure activities such as skateboarding, roller skating, trampolining, and bicycling also benefit from appropriate use of mouthguards and protective equipment.^{8,74,75} Long-term sequelae of traumatic injuries can affect well-being, speech, need for complex care, and oral health-related quality of life.⁸

Recommendations: Timely management of traumatic dental injuries is very important. There is a need for greater awareness of and education regarding the importance of timely management of dental trauma.⁶⁹ Dentists should introduce a comprehensive trauma prevention program to help reduce the incidence of traumatic injury to the adolescent dentition. This prevention plan should consider assessment of the patient's sport or activity, including level and frequency of activity.⁷³ Once this information is acquired, recommendation and fabrication of an age-appropriate, sport-specific, and properly-fitted mouthguard/faceguard can be initiated.⁷³ Players should be warned about altering the protective equipment that will disrupt the fit of the appliance. In addition, players and parents must be informed that injury may occur even with properly-fitted protective equipment.⁷³

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 self-concept development process, emergence of independence, and the influence of peers are just a few of the psychodynamic factors impacting dental health during this period.^{6,9,28}

Esthetic concerns: Desire to improve esthetics of the dentition by tooth whitening and removal of stained areas or defects can be a concern of the adolescent. 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.⁷⁶ The dentist must determine the appropriate mode of treatment. Use of bleaching agents, microabrasion, placement of an esthetic restoration, or a combination of treatments all can be considered.^{77,78}

Recommendations: 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.⁷⁸⁻⁸⁰

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, and electronic cigarettes.⁸¹ Smoking and smokeless tobacco use are initiated and established primarily during adolescence.⁸²⁻⁸⁵ There is increased risk in oral cancer from chewing tobacco and an increased risk of lung and pancreatic cancers, cardiovascular disease, stroke, and risk-taking behaviors with use of nicotine, e-cigarettes, vaping, alcohol, and recreational drugs.⁸⁶ In addition, use of these substances can have effects such as halitosis, extrinsic staining, and negative outcomes in sports performance.⁸

Recommendations: The oral and systemic consequences of all current forms of tobacco use should be part of each patient's oral health education.⁸⁷⁻⁸⁹ For those adolescent patients who use tobacco products, the practitioner should provide or refer the patient to appropriate educational and counseling services.⁹⁰ Questions regarding tobacco use should be added to the adolescent dental record.⁹¹ When associated pathology is present, referral should be made if the treatment needs are beyond the treating dentist's scope of practice. This is further discussed in AAPD's tobacco use, nicotine delivery systems, and substance abuse.⁸⁷⁻⁸⁹

Oral piercing: Intraoral and perioral piercing can have local and systemic adverse effects.^{92,93} Risks include, but are not limited to, pain, bleeding, swelling, hematoma, delayed healing, nerve damage, abscess, blood-borne infections (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.^{8,93-95}

Recommendations: Piercing and the use of jewelry on intraoral and perioral tissues should be discouraged due to potential for pathologic conditions and sequelae.⁹³ Prevention of complications begins with oral health education regarding these adverse effects.⁹⁵

Pregnancy: The pregnant adolescent can be affected by physiological changes to the oral cavity (e.g., gingivitis, pregnancy-associated dry mouth, pyogenic granuloma).⁹⁶

Recommendations: Proper screening for pregnancy is part of care of the adolescent female patient. 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.⁹⁶

Sexually-transmitted infections: There is a growing concern and increase in the prevalence of sexually transmitted disease in adolescents, specifically in the ages of 15-19 years.¹¹ Screening and examination for oral signs of sexually transmitted infections and appropriate management or referral by the provider are important. 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.⁹⁷

Recommendations: Screening and examination for oral signs of sexually transmitted diseases should be part of comprehensive care delivered to the adolescent patient. The examination should include identifying oral manifestations of sexually-transmitted diseases as well as education on the risk of transmission during unprotected oral sex and adoption of barrier techniques (e.g., condoms, dental dams) for prevention; referral for counseling and treatment is recommended when indicated.¹¹ Patients also should be educated on HPV and available vaccination to prevent risk of infection.⁹⁷

Psychosocial and other considerations: Behavioral considerations when treating an adolescent may include anxiety, phobia, and intellectual dysfunction.²¹ Some psychosocial considerations may result in oral problems (e.g., perimyolysis/severe enamel erosion in patients with bulimia).⁹⁸

The impact of psychosocial factors relating to oral health must include consideration of the following:

- changes in dietary habits (e.g., fads, freedom to snack, increased energy needs, access to carbohydrates).
- use of tobacco, alcohol, and drugs.
- risk-taking or risk-seeking behavior.
- motivation for maintenance of good oral hygiene.
- adolescent as responsible for care.
- lack of knowledge about periodontal disease.

Physiologic changes also can contribute to significant oral concerns in the adolescent. These changes include: (1) loss of remaining primary teeth; (2) eruption of remaining permanent teeth; (3) gingival maturity; (4) facial growth; and (5) hormonal changes.

Although new studies show that neurologic maturation continues into the third decade of life, seeking assent from adolescents for intervention can foster the moral growth and development of autonomy in young patients.^{99,100} Refer to AAPD's *Informed Consent* for further information.¹⁰¹

Recommendations:

1. An adolescent's oral health care should be provided by a dentist who has appropriate training in managing the patient's specific needs. Referral should be made when the treatment needs are beyond the treating dentist's scope of practice. This may include both dental and

nondental problems.¹⁰² Consultation with nondental professionals or a team approach may be indicated.

2. Supplemental medical history topics regarding questions on pregnancy, alcohol and drug use, oral piercings, tobacco use, sexual activity, and eating disorders should be included in the adolescent dental record.⁹¹
3. Attention should be given to the particular psychosocial aspects of adolescent dental care. Other issues such as assent, confidentiality, and compliance should be addressed in the care of these patients.^{101,103}
4. A complete oral health care program for the adolescent requires an educational component that addresses the particular concerns and needs of the adolescent patient and focuses on:
 - a. specific behaviorally- and physiologically-induced oral manifestations in this age group;³¹
 - b. shared responsibility for care and health by the adolescent, parent, and provider;³¹ and
 - c. consequences of adolescent behavior on oral health.⁸

Transitioning to adult care: As adolescent patients approach the age of majority, it is important to educate the patient and parent on the value of 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 decreased access to oral health care for individuals with special health care needs (SHCN)¹⁰⁴ 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.¹⁰⁵

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 SHCN, in cases where it is not possible or desired to transition to another practitioner, the dental home can remain with the pediatric dentist and appropriate referrals for specialized dental care should be recommended when needed.¹⁰³

References

- American Academy of Pedodontics. Guidelines for dental health of the adolescent. American Academy of Pediatric Dentistry Reference Manual 1991-1992. Chicago, Ill.: American Academy of Pediatric Dentistry; 1991:43-6.
- American Academy of Pediatric Dentistry. Guideline on adolescent oral health care. *Pediatr Dent* 2015;37(special issue):151-8.
- Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. *Lancet Child Adolesc Health* 2018;2(3):223-8.
- American Academy of Pediatrics. Adolescent Sexual Health. Stages of Adolescent Development. Available at: "https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/adolescent-sexual-health/Pages/Stages-of-Adolescent-Development.aspx". Accessed March 7, 2020.
- Studen-Pavlovich D, Vieira AM. Part 5: Adolescence: The dynamics of change. In: Nowak AJ, Christensen JR, Mabry, TR, Townsend JA, Wells MH, eds. *Pediatric Dentistry: Infancy Through Adolescence*. 6th ed, St. Louis, Mo.: Elsevier; 2019:555-61.
- Baker SR, Mat A, Robinson PG. What psychosocial factors influence adolescents' oral health? *J Dent Res* 2010;89(11):1230-5.
- Yu SM, Bellamy HA, Schwalberg RH, Drum MA. Factors associated with use of preventive dental and health services among U.S. adolescents. *J Adolesc Health* 2001; 29(6):395-405.
- Silk H, Kwok A. Addressing adolescent oral health: A review. *Pediatr Rev* 2017;38(2):61-8.
- American Academy of Pediatric Dentistry. Policy on prevention of sports-related orofacial injuries. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:106-11.
- U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General—Executive Summary. Rockville, Md.: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.
- Shannon CL, Klausner JD. The growing epidemic of sexually transmitted infections in adolescents: A neglected population. *Curr Opin Pediatr* 2018;30(1):137-43.
- Ford C, English A, Sigman G. Confidential health care for adolescents: Position paper of the Society for Adolescent Medicine. *J Adolesc Health* 2004;35(1):1-8.
- Rafferty J, Committee on Psychosocial Aspects of Child and Family Health, Committee on Adolescence, Section on Lesbian, Gay, Bisexual and Transgender Health and Wellness. Ensuring comprehensive care and support for transgender and gender-diverse children and adolescents. *Pediatrics* 2018;142(4):e20182162.
- Kaltiala-Heino R, Bergman H, Tyolajarvi M, Frisen L. Gender dysphoria in adolescence: Current perspectives. *Adolesc Health Med Ther* 2018;2(9):31-41.
- Johns MM, Lowry R, Andrzejewski J, et al. Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students: 19 states and large urban school districts, 2017. *MMWR Morb Mortal Wkly Rep* 2019; 68(3):67-71.
- Conard LAE, Schwartz SB. Supporting and caring for transgender and gender-expansive individuals in the dental practice. *J Dent Child* 2019;86(3):173-9.
- Day JK, Fish JN, Perez-Brumer A, Hatzenbuehler ML, Russell ST. Transgender youth substance use disparities: Results from a population-based sample. *J Adolesc Health* 2017;61(6):729-35.
- Watson RJ, Veale JF, Sawyer EM. Disordered eating behaviors among transgender youth: Probability profiles from risk and protective factors. *Int J Eat Disord* 2017; 50(5):515-22.
- Centers for Disease Control and Prevention. Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999-2004 to 2011-2016. Atlanta, Ga. USA: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2019.
- Kirkham J, Robinson C, Strong M, Shore RC. Effects of frequency of acid exposure on demineralization/ remineralization behavior of human enamel in vitro. *Caries Res* 1994;28(1):9-13.
- American Psychological Association. *Developing Adolescents: A Reference for Professionals*. Washington, D.C.: American Psychological Association; 2002.
- Howze KA. *Health for Teens in Care: A Judge's Guide* 2002. Washington, D.C.: American Bar Association; 2002.
- Majewski RF. Dental caries in adolescents associated with caffeinated carbonated beverages. *Pediatr Dent* 2001;23 (3):198-203.
- Marshall TA, Levy SM, Broffitt B, et al. Dental caries and beverage consumption in young children. *Pediatrics* 2003;112(3Pt1):e184-e191.
- Hasselkvist A, Johansson A, Johansson AK. Association between soft drink consumption, oral health, and some lifestyle factors in Swedish adolescents. *Acta Odontol Scand* 2014;3:1-8.
- Feldens CA, Ardenghi TM, Dullius AIDS, Vargas-Ferreira F, Hernandez PAG, Kramer PF. Clarifying the impact of untreated and treated dental caries on oral health-related quality of life among adolescents. *Caries Res* 2016;50(4): 414-21.
- American Academy of Pediatric Dentistry. Fluoride therapy. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:288-91.

References continued on the next page.

28. Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR Recomm Rep* 2001;50(RR14):1-42.
29. Weyant RJ, Tracy SL, Anselmo TT, et al. Topical fluoride for caries prevention: Executive summary of the updated clinical recommendations and supporting systematic review. *J Am Dent Assoc* 2013;144(11):1279-91.
30. American Academy of Pediatric Dentistry. Caries-risk assessment and management in infants, children, and adolescents. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:243-7.
31. Dean JA, Hughes CV. Mechanical and chemotherapeutic home oral hygiene. In: Dean JA, ed. *McDonald and Avery's Dentistry for the Child and Adolescent*. 10th ed. St. Louis, Mo.: Elsevier; 2016:120-37.
32. American Academy of Pediatric Dentistry. Periodicity of examination, preventive dental services, anticipatory guidance, and oral treatment for children. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:231-42.
33. Freeman R, Sheiham A. Understanding decision-making process for sugar consumption in adolescents. *Community Dent Oral Epidemiol* 1997;25(3):228-32.
34. American Academy of Pediatric Dentistry. Policy on dietary recommendations for infants, children, and adolescents. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:84-6.
35. Feigal RJ. The use of pit and fissure sealants. *Pediatr Dent* 2002;24(5):415-22.
36. Macek MD, Beltrán-Aguilar ED, Lockwood SA, Malvitz DM. Updated comparison of the caries susceptibility of various morphological types of permanent teeth. *J Public Health Dent* 2003;63(3):174-82.
37. American Academy of Pediatric Dentistry. Pediatric restorative dentistry. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2019:340-52.
38. American Academy of Pediatric Dentistry. Prescribing dental radiographs for infants, children, adolescents, and persons with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:248-51.
39. Slayton RL, Urquhart O, Araujo MWB, et al. Evidence-based clinical practice guideline on nonrestorative treatments for carious lesions. *J Am Dent Assoc* 2018;149(10):837-9.
40. Donly K. Pediatric Restorative Dentistry Consensus Conference April 15-16, 2002, San Antonio, Texas. *Pediatr Dent* 2002;24(5):374-6.
41. Meyer-Lueckel H, Bitter, K, Paris S. Randomized controlled clinical trial on proximal caries infiltration: Three-year follow-up. *Caries Res* 2012;46(6):544-8.
42. Senestraro SV, Crowe JJ, Wang M, et al. Minimally invasive resin infiltration of arrested white-spot lesions. *J Am Dent Assoc* 2013;144(9):997-1005.
43. Keels MA, Tatakis DN. Periodontal disease in children: Associated systemic conditions. Literature review current through August 2015. Available at: "https://www.uptodate.com/contents/periodontal-disease-in-children-associated-systemic-conditions?search=periodontal-disease-in-children-associated-systemic-conditions&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1". Accessed July 25, 2020.
44. American Academy of Pediatric Dentistry. Classification of periodontal diseases in infants, children, adolescents, and individuals with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2019:387-401.
45. Stenberg WV. Periodontal problems in children and adolescents. In: Nowak AJ, Christensen JR, Mabry, TR, Townsend JA, Wells MH, eds. *Pediatric Dentistry: Infancy through Adolescence*. 6th ed, St. Louis, Mo.: Elsevier; 2019:371-8.
46. Cole E, Ray-Chaudhuri A, Vaidyanathan M, Johnson J, Sood S. Simplified basic periodontal examination (BPE) in children and adolescents: A guide for general dental practitioners. *Dent Update* 2014;41(4):328-30, 332-4, 337.
47. Tonetti MS, Greenwell H, Kornman KS. Staging and grading of periodontitis: Framework and proposal of a new classification and case definition. *J Periodontol* 2018;89(Suppl 1):S159-S172. Available at: "<https://doi.org/10.1002/JPER.18-0006>".
48. Modeer T, Wondimu B. Periodontal diseases in children and adolescents. *Dent Clin North Am* 2000;44(3):633-58.
49. Grossi SG, Zambon JJ, Ho AW, et al. Assessment of risk for periodontal disease. I. Risk indicators for attachment loss. *J Periodontol* 1994;65(3):260-7.
50. Grossi SG, Genco RJ, Machtei EE, et al. Assessment of risk for periodontal disease. II. Risk indicators for alveolar bone loss. *J Periodontol* 1995;66(1):23-9.
51. Bernabe E, Sheiham A, de Oliveira CM. Condition-specific impacts on quality of life attributed to malocclusion by adolescents with normal occlusion and Class I, II and III malocclusion. *Angle Orthod* 2008;78(6):977-82.
52. Karaman A, Buyuk. Evaluation of temporomandibular disorder symptoms and oral-health related quality of life in adolescent orthodontic patients with different dental malocclusions. *Cranio* 2019;25:1-9. Available at: "<https://www.tandfonline.com/doi/full/10.1080/08869634.2019.1694756>". Accessed September 20, 2020.
53. Kunz F, Platte P, Keb et al. Impact of specific orthodontic parameters on the oral health-related quality of life in children and adolescents: A prospective interdisciplinary, multicentre, cohort study. *J Orofac Orthop* 2019;80(4):74-183.

54. Healey DL, Gauld RD, Thomson WM. Treatment-associated changes in malocclusion and oral health-related quality of life: A 4-year cohort study. *Am J Orthod Dentofacial Orthop* 2016;150(5):811-7.
55. Fabian S, Gelbrich B, Hiemisch A, Kiess W, Hirsch C. Impact of overbite and overjet on oral health-related quality of life of children and adolescents. *J Orofac Orthop* 2018;79(1):29-38.
56. Richardson G, Russell KA. Congenitally missing maxillary incisors and orthodontic treatment considerations for the single tooth implant. *J Can Dent Assoc* 2001;67(1):25-8.
57. American Academy of Pediatric Dentistry. Management considerations for pediatric oral surgery and oral pathology. *The Reference Manual of Pediatric Dentistry*, Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:433-42.
58. Song F, O'Meara S, Wilson P, Goldner S, Kleijnen J. The effectiveness and cost-effectiveness of prophylactic removal of wisdom teeth. *Health Technol Assess* 2000;4(1):1-55.
59. Haug R, Perrott D, Gonzalez M, Talwar R. The American Association of Oral and Maxillofacial Surgeons age-related third molar study. *J Oral Maxillofac Surg* 2005;63(8):1106-14.
60. American Academy of Orofacial Pain. General assessment of the orofacial pain patient. In: de Leeuw R de, Klasser GD, eds. *Orofacial Pain: Guidelines for Assessment, Diagnosis, and Management*. 5th ed. Chicago, Ill.: Quintessence Publishing Co. Inc.; 2013:25-46.
61. Wahlund K, List T, Dworkin SF. Temporomandibular disorders in children and adolescents: Reliability of a questionnaire, clinical examination, and diagnosis. *J Orofac Pain* 1998;12(1):42-51.
62. Behr M, Driemel O, Mertins V, et al. Concepts for the treatment of adolescent patients with missing teeth. *Oral Maxillofac Surg* 2008;12(2):49-60.
63. Garg AK. Treatment of congenitally missing maxillary incisors: Orthodontics, bone grafts, and osseointegrated implants. *Dent Implantol Update* 2002;13(2):9-14.
64. Wexler G. Missing upper lateral incisors: Orthodontic considerations in young patients. *Ann R Australas Coll Dent Surg* 2000;15:136-40.
65. American Academy of Pediatric Dentistry. Management of the developing dentition and occlusion in pediatric dentistry. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2019:362-78.
66. Chaushu S, Sharabi S, Becker A. Dental morphologic characteristics of normal versus delayed developing dentitions with palatally displaced canines. *Am J Orthod Dentofacial Orthop* 2002;121(4):339-46.
67. Kojima R, Taguchi Y, Kabayashi H, Noda T. External root resorption of the maxillary permanent incisors caused by ectopically erupting canines. *J Clin Pediatr Dent* 2002;26(2):193-7.
68. Ericson S, Kurol PJ. Resorption of incisors after ectopic eruption of maxillary canines. *Angle Orthod* 2000;70(6):415-23.
69. Ng L, Malandris M, Cheung W, Rossi-Fedeles G. Traumatic dental injuries presenting to a paediatric emergency department in a tertiary children's hospital, Adelaide, Australia. *Dent Traumatol* 2020;Feb 3. [Epub ahead of print]. Available at: "<https://onlinelibrary.wiley.com/doi/abs/10.1111/edt.12548>". Accessed September 20, 2020.
70. Lam R. Epidemiology and outcomes of traumatic dental injuries: A review of the literature. *Aust Dent J* 2016;61(1):4-20.
71. Stewart GB, Shields BJ, Fields S, Cronstock RD, Smith GA. Consumer products and activities associated with dental injuries to children treated in United States emergency departments, 1990-2003. *Dent Traumatol* 2009;25(4):399-405.
72. Gassner R, Bösch R, Tuli T, Emshoff R. Prevalence of dental trauma in 6,000 patients with facial injuries: Implications for prevention. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1999;87(1):27-33.
73. Ranalli DN. A sports dentistry trauma control plan for children and adolescents. *J Southeast Soc Pediatr Dent* 2002;8:8-9.
74. Tesini DA, Soporowski NJ. Epidemiology of orofacial sports-related injuries. *Dent Clin North Am* 2000;44(1):1-18.
75. Ranalli DN. Prevention of sport-related dental traumatic injuries. *Dent Clin North Am* 2000;44(1):19-33.
76. Sarrett DC. Tooth whitening today. *J Am Dent Assoc* 2002;133(11):1535-8.
77. Donly KJ. The adolescent patient: Special whitening challenges. *Compend Contin Educ Dent* 2003;24(4A):390-6.
78. American Academy of Pediatric Dentistry. Policy on use of dental bleaching for child and adolescent patients. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2019:103-6.
79. Giachetti L, Bertini F, Bambi C, Nieri M, Scaminaci Russo D. A randomized clinical trial comparing at-home and in office tooth whitening techniques: A nine month follow up. *J Am Dent Assoc* 2010;141(11):1357-64.
80. Li Y. Tooth bleaching using peroxide containing agents: Current status of safety issues. *Compend Contin Educ Dent* 1998;19(8):783-6, 790.
81. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings, 2013. Ann Arbor, Mich.: University of Michigan, Institute for Social Research; 2014.

References continued on the next page.

82. U.S. National Center for Chronic Disease Prevention and Health Promotion Office on Smoking and Health. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, Ga.: U.S. Centers for Disease Control and Prevention; 2012. Available at: "<https://www.ncbi.nlm.nih.gov/books/NBK99237/>". Accessed July 27, 2020.
83. Centers for Disease Control and Prevention. Smoking and tobacco use: Youth and tobacco use. Available at: "https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm". Accessed July 27, 2020.
84. Campaign for Tobacco-Free Kids. The path to tobacco addiction starts at very young ages. Washington, D.C.: Campaign for Tobacco-Free Kids; 2015. Available at: "<http://www.tobaccofreekids.org/research/factsheets/pdf/0127.pdf>". Accessed July 27, 2020.
85. Johnson CC, Myers L, Webber LS, Boris NW. Profiles of the adolescent smoker: Models of tobacco use among 9th grade high school students. *Prev Med* 2004;39(3):551-8.
86. Miech R, Johnston L, O'Malley PM, Bachman JG, Patrick ME. Adolescent vaping and nicotine use in 2017-2018—U.S. national estimates. *N Engl J Med* 2019;380(2):192-3.
87. American Academy of Pediatric Dentistry. Policy on tobacco use. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:89-93.
88. American Academy of Pediatric Dentistry. Policy on electronic nicotine delivery systems (ENDS). *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:94-7.
89. American Academy of Pediatric Dentistry. Policy on substance abuse in adolescent patients. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:98-101.
90. Centers for Disease Control and Prevention. Best Practices for Comprehensive Tobacco Programs—2014. Atlanta, Ga.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014. Available at: "https://www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf". Accessed July 27, 2020.
91. American Academy of Pediatric Dentistry. Pediatric medical history. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:575-77.
92. Janssen KM, Cooper BR. Oral piercing: An overview. *Internet J Allied Health Sci Practice* 2008;6(3):1-3. Available at: "<https://nsuworks.nova.edu/ijahsp/vol6/iss3/6/>". Accessed March 6, 2020.
93. American Academy of Pediatric Dentistry. Policy on intraoral and perioral piercing and oral jewelry/accessories. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:104-5.
94. Breuner CC, Levine DA, AAP Committee on Adolescence. Adolescent and young adult tattooing, piercing, and scarification. *Pediatrics* 2017;140(4):e20163494. Available at: "<https://pediatrics.aappublications.org/content/140/4/e20163494>". Correction: *Pediatrics* 2018;141(2):e20173630. Available at: "<https://pediatrics.aappublications.org/content/141/2/e20173630>". Accessed September 20, 2020.
95. Stanko P, Poruban D, Mracna J, et al. Squamous cell carcinoma and piercing of the tongue—A case report. *J Craniomaxillofac Surg* 2012;40(4):329-31.
96. American Academy of Pediatric Dentistry. Oral health care for the pregnant adolescent. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:267-74.
97. American Academy of Pediatric Dentistry. Policy on human papilloma virus vaccinations. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:102-3.
98. Christensen GJ. Oral care for patients with bulimia. *J Am Dent Assoc* 2002;133(12):1689-91.
99. American Academy of Pediatrics Committee on Bioethics. Policy statement: Informed consent in decision-making in pediatric practice. *Pediatrics* 2016;138(2):e20161484. Available at: "<https://pediatrics.aappublications.org/content/138/2/e20161484.long>". Accessed September 20, 2020.
100. Katz AL, Webb SA, American Academy of Pediatrics Committee on Bioethics. Technical report: Informed consent in decision-making in pediatric practice. *Pediatrics* 2016;138(2):e20161485.
101. American Academy of Pediatric Dentistry. Informed consent. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:470-3.
102. Larson RW. Toward a psychology of positive youth development. *Am Psychologist* 2000;55(1):170-83.
103. American Academy of Pediatric Dentistry. Management of dental patients with special health care needs. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:275-80.
104. American Academy of Pediatric Dentistry. Record-keeping. *The Reference Manual of Pediatric Dentistry*. Chicago, Ill.: American Academy of Pediatric Dentistry; 2020:462-9.
105. Borromeo GL, Bramante G, Betar D, Bhikha C, Cai YY, Cajili C. Transitioning of special needs paediatric patients to adult special needs dental services. *Aust Dent J* 2014;59(3):360-5.