Quality Resource Guide

Oral Health Care for the Adolescent Patient

Author Acknowledgements

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Educational Objectives

Following this unit of instruction, the learner should be able to:

1. Recognize the distinctive oral health care needs of adolescents.
2. Identify oral health risk factors specific to adolescents.
3. Describe oral health care recommendations for adolescents.
4. Describe dental treatment planning considerations for adolescents.

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The following commentary highlights fundamental and commonly accepted practices on the subject matter. The information is intended as a general overview and is for educational purposes only. This information does not constitute legal advice, which can only be provided by an attorney.

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Introduction

Adolescence is the time of life between childhood and adulthood that includes significant changes in growth, both biological and social. The critical developmental experiences include physical and sexual maturation, social and economic independence, development of identity, acquisition of skills needed to carry out adult relationships and roles, and the capacity for abstract reasoning. Adolescence is defined by the Association of Maternal and Child Health Programs as the time from 10 years old to 24 years old, with three main stages:[1]

- Early (ages 10-14)
- Middle (ages 15-17)
- Late (ages 18-24)

The early stage is the beginning of puberty; physical growth, sexual interest, emotional development, and abstract thought are progressing. The middle stage involves the ending of puberty with slowing growth and increased abstract thinking. The late stage has the ending of physical growth and more advanced cognitive development. In general, adolescents are not fully capable of understanding complex concepts, relationships between behavior and consequences, or the degree of control they can have over health decision-making. These characteristics may make them more vulnerable to high-risk health adverse behaviors.

Oral Health Conditions

The adolescent patient has different oral health needs than a younger, prepubertal child or many adults. Differences may include:[2]

- Relatively higher caries risk and potentially higher caries rate
- Higher risk for periodontal disease
- Increased risk for dental trauma, particularly the maxillary central incisors
- Increased esthetic concerns
- Experimentation with tobacco, nicotine, alcohol, and recreational drugs
- Unique desires and psychosocial issues like oral piercings, eating disorders, and pregnancy

It is essential to obtain complete medical, dental, and social histories to support an adolescent's proper diagnosis and treatment planning. Confirmation of this information and informed consent for any dental treatment must be obtained from the parent/guardian as teenagers are still considered minors. However, parents/guardians may not be fully aware of their adolescent's histories and behaviors; providers should create a confidential, reassuring environment. Adolescents may not always be forthcoming with sharing sensitive information (alcohol use or sexual activity), and providers can ask the parent/guardian to leave the operatory to discuss these topics. Dental providers should use this time to build trust and encourage information sharing. Check state laws to determine if confidential information shared with health professionals must be reported to the parent/guardian.

Management of Dental Caries

The caries rate remains high during adolescence, usually due to inadequate oral hygiene habits and consumption of sugar-sweetened foods and beverages. Dental visits may be less frequent, and anatomically, there is an increase in the total number of tooth surfaces from the eruption of additional permanent teeth. Dental caries can be managed via primary prevention strategies (fluoride, oral hygiene, dietary management, sealants) and caries control methods (silver diamine fluoride, interim therapeutic restorations, restorative care). Caries risk assessment should be performed for each patient's new exam or recall visit following the social/biological, protective and clinical factors outlined in the American Academy of Pediatric Dentistry's Best Practices Caries-Risk Assessment and Management document.[3]

Prevention

Fluoride is beneficial for caries prevention and caries control. Fluoride treatment modalities should be based on individual caries risk. Fluoride may be delivered by brushing twice daily with fluoridated toothpaste, professionally applied fluoride treatment by a dental provider (high caries risk patients should receive every three months, moderate risk every six months). If the risk is high, the patient may also receive prescription-strength home topical fluoride. If a patient is from a non-fluoridated community, fluoride supplements can be prescribed until age 16.[4]

Teenagers with increased independence may tend to have poorer oral hygiene practices. Daily toothbrushing and flossing should be recommended. At recall visits (high caries risk patients should be seen every three months, moderate risk every six months, low risk every six to twelve months), professional cleanings and calculus removal may be required. Home care counseling should focus on the benefits of fluoride and plaque removal. Providers explaining that improved esthetics and reduction of halitosis are the successful endpoints can be motivational for the patient. Additionally, dental providers can leverage an adolescent's higher level of independence by offering alternatives to improve home care, such as electric toothbrushes, flossing substitutes, and mouth rinses. The goal is to find a specific prevention modality that the patient commits to use.

Generally, adolescents have increased exposure to refined carbohydrates and sugar-sweetened beverages like sodas, juices, and sports drinks. Nutrition counseling, which focuses on making better choices (drinking water instead of soda) and improving overall health, is recommended.[5] Eating disorders may also occur during this stage of life. Dentists should evaluate for significant dental decay or enamel erosion that may indicate purging behavior.

There is strong evidence supporting the use of sealants to prevent decay in patients with high caries risk and teeth with deep pit and fissures. Dental providers should recommend and apply sealants in these cases.[6]

Caries Control and Restorative Care

Caries control methods such as silver diamine fluoride (SDF) and interim therapeutic restorations effectively arrest carious lesions on both primary and permanent teeth.[7] Dental providers should

evaluate individual risk factors and use these caries control techniques, if appropriate, as interventions prior to restorative care.

If the lesions do not remineralize or arrest, restorative treatment is indicated. Resin-based composite and amalgam may be used as the dental material of choice for restorations.[8] In the case of large, multi-surface lesions, full coverage restorations should be a treatment option.[2] However, the teenage patient may still have occlusal changes as the average female stops growing at 16 to 18 years and the average male ceases growing at 18 to 21 years.[9] If the patient is still growing, full coverage restorations may be limited to stainless steel crowns or pediatric esthetic crowns. If those cannot be performed, one may place interim therapeutic restorations and monitor. Fixed prosthetic options can be considered if an adolescent has stopped growing and occlusion is stable.

Periodontal and Soft Tissues Diseases

Gingival diseases are more prevalent in adolescence due to hormonal changes, particularly the increase of sex hormones. The hormones exaggerate the inflammatory response in the gingiva and alter capillary permeability. Adolescents may be affected by various gingival issues (both plaque-induced and not) and many periodontal conditions (chronic, aggressive, necrotizing, co-morbidity with systemic diseases). These diseases can be amplified by orthodontic treatment, drug intake, and pregnancy.[2]

Enhanced screening for periodontal and soft tissue conditions is recommended for teenagers. If the dental provider discovers acute periodontal disease, acute necrotizing ulcerative gingivitis/periodontitis and localized aggressive periodontitis should be considered as part of the differential diagnosis. Other aspects of recommended dental care may require periodontal procedures such as a frenectomy or surgery to expose an impacted tooth.

Screening for the oral presentation of sexually transmitted infections (STI), particularly human papillomavirus (HPV), is essential because of its relationship with oral cancers. STI incidence is rising among adolescents accounting for approximately half of the new STIs each year in the United States (20 million new STIs annually). HPV infection rates among females aged 14 to 19 years old were 29.0% in 2012, reducing after the vaccination was available. In 2016, HPV vaccination rates were 49.5% for females 13 to 17 years old and 37.5% for males 13 to 17 years old.[10] It is recommended that dental providers discuss HPV vaccination and educate patients and their parents in a relevant way during counseling.[2]

Occlusion

Multiple conditions, including esthetics, function, temporomandibular joint dysfunction, ectopic eruption, third molars, and congenitally missing teeth, can be related to malocclusion during adolescence and may continue to progress as the teenager grows. An examination should include clinical occlusal evaluation and imaging surveys as indicated. Coordination of orthodontics and prosthodontic care may be indicated depending on the severity of the occlusal issues.[2] Orthodontic therapy may include fixed or removable appliances, extra-oral headgear, or orthognathic surgery. Non-compliance with the orthodontic treatment plan can result in continued malocclusion. Intra-oral appliances increase a patient's caries risk,[3] and poor home care and diet control can lead to additional dental caries around the orthodontic appliances (brackets, bands).

Dental Trauma

The most common traumatic injuries with adolescents involve the maxillary central incisors. The primary reasons for the trauma are falls and collisions, with males being injured more than females ranging from 1.3 to 2.5 times more likely.[11] Emergency care should be provided to stabilize the injury (flexible splinting) and perform pulp therapy if indicated per the International Association of Dental Traumatology (IADT) Guidelines for Management of Traumatic Dental Injuries.[12] Oral protection with mouthguards and faceguards should be recommended during sports and other high trauma risk activities to reduce dental injury. Dental providers should inquire about participation in these activities as part of routine assessment and formulate a comprehensive trauma prevention plan with the patient and their parent/guardian.[2] If physical or sexual abuse is suspected, dental providers should document clinical findings, take photos (if possible) and report it to the appropriate agency. Check state laws to confirm if dentists are mandated reporters and follow state guidance on how to report.

Esthetic Concerns

During adolescence, psychosocial factors such as peer influence and a focus on self-identity may affect a teenager's esthetic desires and awareness. Patients may be more interested in whitening via bleaching treatments, restorations, and microabrasion. The dentist should suggest the least invasive and effective treatment to achieve the desired outcome while explaining the possible adverse side effects of the care.[2]

Psychosocial and Other Considerations

Unique social-psychological desires affect many teenagers during adolescence, resulting in dietary changes, tobacco use, alcohol and other drugs, riskier behaviors, and a tendency for inadequate oral hygiene. Psychosocial issues like eating disorders (bulimia or anorexia) can result in oral complications such as severe enamel erosion. Gender dysphoria may be an issue for some adolescents. Health history forms should be updated to allow for more information regarding gender, names, and pronouns.[2]

Dental providers should screen for the use of tobacco, nicotine, alcohol, and the use of recreational drugs. These habits often start and continue throughout adolescence. Tobacco has multiple intake forms, including cigarettes, cigars, e-cigarettes, hookahs, smokeless, and pipes. These substances can increase the risk of various cancers (including oral) and oral side effects like staining, periodontal issues and halitosis. In particular, e-cigarettes (or "vaping") include additional substances added to the nicotine for

flavor, such as sucrose, sucralose, and ethyl maltol. These additives can accelerate the formation of dental caries.[13]

Oral piercings may be expected at this stage of a patient's life. Risks from improper piercings include pain, swelling, bleeding, nerve damage, and various blood-borne infections. Oral co-morbidities associated with mouth piercings include tooth fracture, gingival and periodontal issues, speech difficulty, and impaired swallowing with risk of aspiration.[2]

Pregnancy is a possibility with the adolescent patient and creates additional physiological changes. These hormonal changes can also lead to severe enamel erosion from morning sickness and vomiting/reflux, hormonal changes leading to dry mouth, impaired gingival status, increased risk for pyogenic granulomas and increased tooth mobility. Professional routine oral health care should include regimens to reduce caries and gingival irritants. Precautions regarding radiographs and dental care should follow protocols for adult pregnant patients.[14]

Summary

Adolescence brings unique challenges for oral health care, including caries management, soft tissue diseases, occlusion, dental trauma, esthetics, and other relevant psychosocial issues (**Table 1**). Dentists should consider the various risk factors and modify treatment to best address the individual needs of teenage patients.

Table 1 - Adolescent Oral Health Challenges

Area of Concern	Clinical Implications	Recommendation
Management of Dental Caries	- Higher Caries Risk/Caries Rate - Poorer Dietary Choices - Poorer Oral Hygiene	- Focus on primary and secondary prevention - Fixed prosthetic options are limited if a teenager is still growing
Periodontal/Soft Tissue	- Increased gingival/periodontal risks due to hormonal changes	- Counseling focusing on improved oral hygiene - Screening for periodontal disease and sexually transmitted diseases (with oral presentation)
Occlusion	- Esthetics, function, TMJ, ectopic eruption, third molars	- Screen for occlusal issues - Coordinate with orthodontics/prosthodontics as needed
Dental Trauma	- Commonly due to falls and collisions - Typically affect maxillary central incisors	- Trauma management per IADT guidelines for stabilization, pulpal care, and infection - Recommend mouthguards and faceguards for sporting or high-risk activities
Esthetics	- Increased individual esthetic awareness and concerns	- Recommend the least invasive, most effective treatment - Possibilities include restorations, bleaching, microabrasion
Psychosocial	- Eating disorders - Gender dysphoria - Tobacco, alcohol, drug use - Oral piercings - Pregnancy	- Screen for potential oral implications of psychosocial issues (enamel erosion, oral cancer)

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POST-TEST

Internet Users: This page is intended to assist you in fast and accurate testing when completing the "Online Exam." We suggest reviewing the questions and then circling your answers on this page prior to completing the online exam.

(1.0 CE Credit Contact Hour) Please circle the correct answer. 70% equals passing grade.

1. **Key developmental experience(s) for adolescents is(are) except:**
   a. Physical/sexual maturation
   b. Social/economic independence
   c. Financial dependence
   d. Capacity for abstract reasoning

2. **Caries risk for adolescents is generally _____ (than) prepubertal children.**
   a. higher
   b. equal to
   c. lower
   d. none of the above – it is unknown

3. **Which of the following contributes most to the caries risk of adolescents?**
   a. Family history of dental caries
   b. Continued exposure to refined carbohydrates and sugar-sweetened beverages
   c. Lack of fluoridated water sources
   d. Loss of primary teeth

4. **At what ages do adolescents generally stop growing?**
   a. Female: 13-15 years old; Male: 16-18 years old
   b. Female: 16-18 years old; Male: 13-15 years old
   c. Female: 16-18 years old; Male: 18-21 years old
   d. Female: 13-15 years old; Male: 18-21 years old

5. **Unique psychosocial issues for adolescents include except:**
   a. Tobacco, alcohol, drug use
   b. Eating disorders
   c. Gender dysphoria
   d. Trauma

6. **Periodontal evaluation for adolescents should include assessment for all of the following except:**
   a. Implant placement
   b. Acute periodontal diseases
   c. Sexually transmitted diseases with an oral manifestation (HPV)
   d. Potential soft tissue issues due to orthodontics

7. **Dental trauma to adolescents is most likely to occur in the maxillary central incisors due to:**
   a. Fighting
   b. Falls and collisions
   c. Traumatic occlusion
   d. Lack of a dental home

8. **Which of the following is not an appropriate treatment choice for esthetics if the teenager is still growing?**
   a. Bleaching
   b. Composite veneer
   c. Full-coverage ceramic crown
   d. Microabrasion

9. **All of the following are ways adolescents can use tobacco/nicotine except:**
   a. E-cigarettes
   b. Intravenous
   c. Hookahs
   d. Smokeless

10. **Which adolescent psychosocial issue could result in significant enamel erosion?**
    a. Tobacco use
    b. Eating disorder
    c. Gender dysphoria
    d. Oral piercings

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