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Prevention and Management of Oral Health Concerns in Adolescents

An overview of the role of dental professionals in managing oral diseases and complications arising from poor oral hygiene, trauma, substance use, opioid misuse, and poor dietary habits

Oral health in adolescence

Adolescents, aged 10 to 19 years[1], have distinctive oral health-related concerns[2]

- Poor oral hygiene
- Poor nutritional habits and eating disorders
- High caries risk
- Increased risk for periodontal disease and traumatic injury
- Dental phobia
- Unique social and psychological needs including increased aesthetic desire and awareness
- Risk of pregnancy or sexually transmitted infections
- Limited access to oral healthcare

Oral diseases prevalent in adolescents[2,3]

Dental caries
- Breakdown of teeth due to acids produced by bacteria

Dental erosion
- Irreversible, acid-induced loss of hard tissue

Gingivitis and periodontal disease
- Inflammation of gums, potentially leading to bone loss

Malocclusion
- Misalignment of the upper and lower teeth

Human papillomavirus (HPV) infection
- Sexually transmitted infection with oral manifestations
- Linked with the development of oropharyngeal cancers

Impact of oral diseases on adolescent health and well-being[4]

- Tooth loss
- Pain
- Anxiety
- Loss of appetite
- Altered facial appearance
- Low self-esteem and confidence

10–19

Adolescence is a decisive period when reinforcement of positive oral health habits, dental interventions, and dietary choices influence oral health far into adulthood[3]

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Risk factors with a negative impact on oral health[3]

Dental trauma
Orofacial injuries from participating in contact sports, traffic accidents, or violence

Malnutrition[5]
- Vitamin and mineral deficiencies
  - Oral lesions
  - Dental caries
  - Mucosal manifestations
- Increased intake of sugar and beverages with added sugar
  - Dental caries and erosion

Opioid prescription misuse[3]
- High rates of addiction
- Increased risk of dental caries

Alcohol and illicit drug use[3]
- Increased incidences of violence and motor vehicle accidents leading to oral trauma
- Increased risk of dental caries

Oral piercings
Potential for complications such as infections, trauma, and bleeding

Sociodemographic factors[3]
- Reduced parental control
- Income, gender, and ethnic inequalities
- Lack of parental knowledge of oral health
- Lack of dental insurance coverage

Preventive and management strategies recommended for improving oral health

Healthy eating habits[3]
- Include nutritious and balanced meals in the diet
- Avoid acidic drinks and beverages with high sugar content
- Include natural sugar sources like fruits instead of snacks with added sugar in the diet
- Avoid consumption of sweet foods and drinks before bedtime and between meals

Oral hygiene measures[3]
- Brushing teeth twice a day for 2 minutes
  - Use a toothpaste with 1,450 ppm fluoride
- Electric toothbrushes[6]
  - Show consistently positive impact from 2 years of age
  - Effective even during ongoing orthodontic treatment
- Interdental cleaning devices to remove interdental biofilm (plaque) can be helpful after individual instructions

Oscillating-rotating toothbrushes have been found to be more effective at plaque removal than sonic toothbrushes in adolescent orthodontic patients[7]

Fluorides for adolescents with a high caries risk[3,8]
- Fluoride treatment
  - Toothpaste with 5,000 ppm fluoride is permissible for use only under prescription and usually restricted for children under 16 years in many countries
  - Recommended for individuals with increased caries risk
- Gels (professional use; 5,000-12,300 ppm fluoride), rinses [home or use at schools; (a) daily: 0.05% sodium fluoride (225 ppm fluoride), (b) weekly: 0.2% sodium fluoride (900 ppm fluoride)], varnishes (professional use; typically, 22,600 ppm fluoride)
  - Professionally applied fluoride products (varnish, gel) are not only indicated for those at high risk but also for secondary prevention, arresting already existing lesions
- Stannous fluoride toothpastes have antibacterial properties and are effective in the prevention of gum problems and oral malodour
- Stannous fluoride and sodium fluoride toothpastes have anticavity properties

Dental sealants[9,10]
- Coating to protect pits and fissure surfaces of posterior teeth

Dental visits[2]
- Regular check-ups and professional cleaning
- Controls caries progression
- Proactively diagnoses and treats ectopic eruption

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Role of professionals in managing adolescent oral health concerns

Dental professionals can provide oral hygiene education, counselling on the consequences of risk-taking behaviour, and counselling for HPV vaccinations

Professional help can ensure oral health management in many ways

Dental professionals involved in sports health teams can[11]:

- Introduce a comprehensive trauma prevention program
- Generate awareness and counsel on the potential for oral trauma
- Strongly recommend the use of age-appropriate, sport-specific, and properly fitted mouthguards, helmets, and preventive splints
- Respond immediately to dental injury

Generate awareness about opioid misuse[12]

- Monitor for signs of misuse
- Use nonsteroidal anti-inflammatory drugs to manage acute dental pain

Dental professionals should proactively counsel patients regarding[3]:

- Dangers of substance use
- Complications from piercing and use of oral jewellery
- Advantages of sealants in reducing the risk of dental caries

Educate on HPV vaccination[3]

- Adolescence, before initiation of sexual activity, is a strategic period when HPV vaccination is the most effective
- Professionals can educate patients and parents on HPV prevention[2]
  - Generate awareness on HPV vaccination and HPV's link to oropharyngeal cancers
  - Educate on the risk of unprotected oral sex and preventive barrier techniques (e.g., condoms)
  - Screen for and identify oral signs of sexually transmitted diseases
  - Refer for counselling and treatment

In school-based oral healthcare programs or community-based public health initiatives, professionals can provide[3]:

- Supportive social network
- Affordable and accessible dental care services

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For providing optimal oral care, dental professionals must be equipped with[2,3]:

- Measures to prevent and manage oral diseases
- Strategies for prevention and early detection of HPV infection
- Knowledge of trauma prevention and immediate care protocols
- Safe opioid prescription practices
- Alternatives for oral pain management
- Strategies to effectively counsel adolescents

Adopt behaviour change theories when counselling for healthy dietary habits, good oral hygiene habits, smoking cessation, and against alcohol and drug use

Employ mobile health and social media for effective healthcare communication[3]

Advocating for integrated holistic health approaches can ensure improved outcomes for adolescent patients[5]

- Integrating oral health evaluations into routine health assessments
- Effective public health interventions
- Implementation of comprehensive health education

Key messages

- **A holistic approach integrating dental care, balanced nutrition, and healthcare is needed to address the unique oral health challenges of adolescents**
- **Dental professionals are uniquely situated to educate on oral hygiene best practices, provide information on the right nutrition, counsel against the use of alcohol and drugs, and generate awareness about the importance of HPV vaccinations**
- **In addition to providing professional services, dental professionals must emphasise the importance and positive impact of healthy oral habits on the long-term overall well-being of adolescents**

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