Dental Hygiene Care for the Infant, Child, and Adolescent

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Objectives

1. Apply the role of the dental hygienist to the dental hygiene care of infants, children, and adolescents.
2. Distinguish between vertical transmission and horizontal transmission.
3. Analyze the oral health needs of infants, children, and adolescents.
4. Develop an individualized oral hygiene routine for each age category.
5. Advocate for the prevention of early childhood caries.

Pediatric Dentistry

- Age-defined specialty that provides both primary and comprehensive preventive and therapeutic oral health care for infants and children through adolescence, including those with special healthcare needs.

- Requires 2 years of additional specialized training in addition to the 4 years of dental school.

American Academy of Pediatric Dentistry (AAPD)

- Membership organization for pediatric dentistry
- Mission statement: “to advocate optimal oral health for all children by delivering outstanding service that meets and exceeds the needs and expectations of our members, partners, and stakeholders”

Age Categories for Pediatric Patients

- Infants - ages 0 to 1 year
- Toddlers - ages 1 to 3 years
- Preschoolers - ages 3 to 5 years
- School age - ages 6 to 11 years
- Adolescents - ages 12 to 17 years

The role of the RDH

- Inform and educate caregivers
  - Consider economic circumstances, cultural values, attitudes, and traditions, language preferences
  - OHL directly related to the prevalence of dental caries risk in children
  - Start during pregnancy
- Interprofessional collaboration
  - Increase oral health literacy (OHL)
    - Interprofessional education
    - Interprofessional collaborative practice
  - High prevalence of dental caries among children

Oral Health Literacy

- “THE DEGREE TO WHICH INDIVIDUALS CAN OBTAIN, PROCESS, AND UNDERSTAND THE BASIC HEALTH INFORMATION AND SERVICES NEEDED TO MAKE APPROPRIATE HEALTH DECISIONS.”
- Dentalcare.com Patient Education Resources
  - Available in 6 languages
    - English
    - Korean
    - Tagalong
    - Vietnamese
    - Chinese
    - Spanish

Early Childhood Caries (ECC)

- “The presence of one or more decayed (non-cavitated or cavitated lesion), missing due to caries, or filled tooth surface in a primary tooth.” in children 71 months or younger (less than 6 years old)
- Public health crisis for infants and children
- Cause: prolonged or repeated exposure of a tooth to fermentable carbohydrates
    - Ex. Milk, formula, or juice
- Maxillary anterior teeth most susceptible

Bacterial and viral transmissions

- Streptococcus mutans and Streptococcus sobrinus
- Vertical transmission: transmission through the caregiver’s saliva to the child.
- Horizontal transmission: indirect exposure of saliva through sharing of spoons, testing foods before feeding to child, and cleaning off pacifier with mouth vs. water.
    - Dental caries
    - Herpetic infection
    - Children between 19-33 months are most susceptible

Caries Risk Levels

BOX 47-2
Caries Risk Levels

Low caries risk: no/little history of carious lesions, extractions, or restorations; no risk factors indicated; adequate protective factors.

Moderate caries risk: history of carious lesions, extractions, or restorations, some risk factors but show no signs of continuing caries; could easily move to high risk; some protective factors.

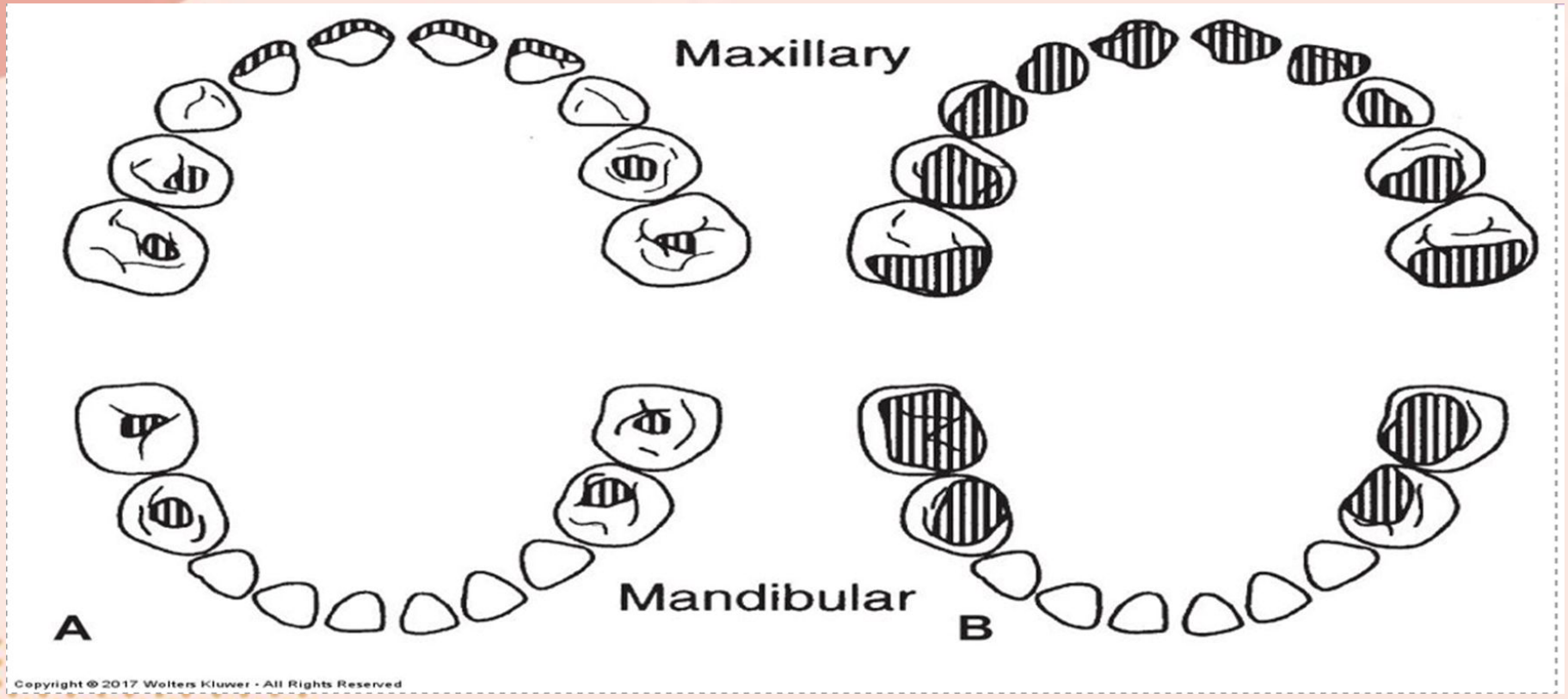
High caries risk: observable and/or radiographic carious lesions present; more than two risk factors; inadequate protective factors.

Extreme caries risk: high caries risk plus dry mouth or special needs.

Cavitated Lesions vs. White Spot Lesions

Normal Healthy Primary Teeth		
Chalky White Spots		
Brown Spots		

Progression of ECC



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Epidemiologic Indices

Decayed, Missing, Filled Teeth (DMFT)

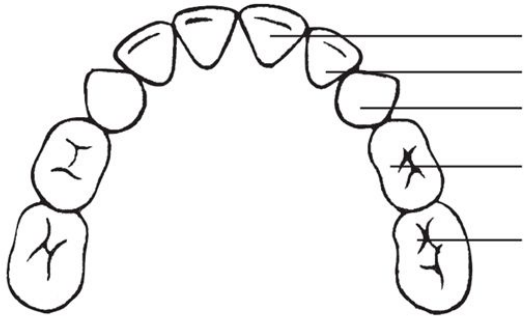
- Measures dental caries
- Total number teeth decayed, missing, or filled in an individual
- Decayed (D): carious tooth, secondary decay, retained roots, temporary filling, filled tooth with another surface decayed
- Missing (M): only those missing due to decay or disease
- Filled (F): only those filled due to caries

Decayed Missing, Filled Surfaces (DMFS)

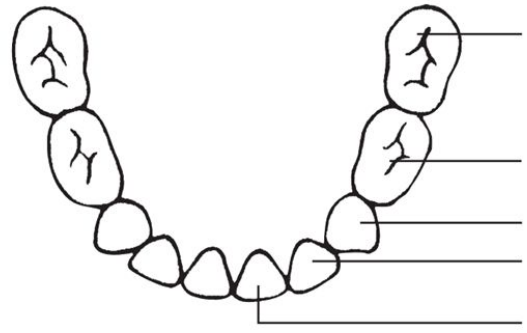
- Measures dental caries
- Counts tooth surfaces rather than individual teeth
- Posterior (5) surfaces: M, D, B, L, O
- Anterior (4) surfaces: M, D, F, L

dmft / dmfs

- Use these indices for primary dentition



Upper Teeth	Erupt	Shed
Central incisor	8–12 mos.	6–7 yrs.
Lateral incisor	9–13 mos.	7–8 yrs.
Canine (cuspid)	16–22 mos.	10–12 yrs.
First molar	13–19 mos.	9–11 yrs.
Second molar	25–33 mos.	10–12 yrs.



Lower Teeth	Erupt	Shed
Second molar	23–31 mos.	10–12 yrs.
First molar	14–18 mos.	9–11 yrs.
Canine (cuspid)	17–23 mos.	9–12 yrs.
Lateral incisor	10–16 mos.	7–8 yrs.
Central incisor	6–10 mos.	6–7 yrs.

Primary Teeth Eruption Chart

Dental Visits

Dental Care Barriers

- Lack of parental knowledge about prevention of oral disease(s)
- Language
- Cost/No insurance
- No dental home established
- Timing conflicts
- Transportation
- Insurance not accepted by the dentist
- Rural areas

Pediatric Dental Visits

- AAPD and the American Academy of Pediatrics recommend that the first dental visits for children no later than 12 months of age
- Early visits include referral to dental specialists when appropriate

- Dental Home: “ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way”
- Emphasis is placed on early intervention before serious health problems can develop.

Pediatric Dental Visits

- Establish rapport, create a positive, fun environment
- OHI- teach parents appropriate behaviors and prevent management problems
  - Nutrition, fluoride incorporation, toothbrushing techniques, etc.
  - Increase oral health literacy of parents
- Schedule dental hygiene visits according to the child's needs
  - Usually every 4-6 months
- Schedule early morning or after naps*

Pediatric Dental Visits

- Dental hygienists must engage both caregiver and child in informed consent or assent respectively, education, and self-care recommendations
- Report suspected abuse or neglect to proper authorities
- Tx:
  - Complete health history
  - Comprehensive oral assessment- use DMFT/dmft, DMFS/dmfs, CRA
  - Document informed consent, client education, treatment provided, and important observations about the child’s behavior, including complications, and how they were addressed
  - Remove biofilm, stain, and calculus

Patient Management Considerations by Age

Infant Oral Care: ages 0- 1 year

- 6-10 months
  - eruption of the first primary teeth
  - Primary teeth are vulnerable to caries upon eruption
- 20-30 months
  - all primary teeth are present
- Teething education and intervention for caregivers
  - OTC analgesic gels (no benzocaine-based for children under 2)
  - Teething interventions (teething toys or soft toothbrush) can provide comfort
- Healthy eating habits are crucial

Education Tips To Caregivers of Infants (ages 0-1 year)

- Brush primary teeth as soon as they are visible (soft bristled brush)
- Before teeth are visible, clean infant's gums after each feeding
- Put babies to bed without a bottle or with only a water bottle
- Wean off bottle ~12-14 months old
- Reduce pacifier use
- Clean child's teeth after sugary medicine use
- Regular dental hygiene appointments
- Fluoride varnish for children who are at moderate to high risk of ECC

Toddler to Preschool: age 1-5 years

- Dental home should be well established by 2 years old
  - Discuss dietary habits, homecare, growth and development
    - Avoid frequent snacking/eating between meals
- Oral hygiene care= caregiver's responsibility
- Emphasize preventive oral hygiene care
- 2-3 years
  - Most susceptible to dental trauma
  - Teach proper brushing techniques
- Age 4- discourage thumb sucking
- Avoid mouthrinses
- Practice positive conversation about the dentist

Oral Health Considerations - Toddler to Preschool (age 1-5 years)

- For a 2-3 year old, parents should take turns brushing with the child
  - 2 minute timer tool
  - Recommend brushing after breakfast and before bedtime
- Control the amount of toothpaste is on toothbrush
  - < 3 years: a smear or grain of rice size
  - 3-6 years: a pea sized amount
- < 6 years: ingesting fluoride under a pea sized amount can lead to mild fluorosis
  - Teach them to spit out toothpaste; not swallow it

Speech and Language Development

- Premature loss of primary teeth
- Digit habits
  - Prolonged thumb and finger sucking
  - Narrow max. arch, open bite, posterior crossbite,increased overjet, decreased overbite
- Malocclusions
- Accident and Injury Prevention
  - Greatest incidence: 2-3 years of age

malocclusion / overbite damage from thumb sucking

Dietary Factors- Toddlers and Preschoolers

- Small, healthy meals during the day
- Healthy snacks:
  - Non-cariogenic foods from grain, veggies, fruit, meats, dairy
- Limit sweet foods/drinks to 2-3 or less per day
- Limit juice to 4-6 ounces per day
- Do not send to bed with a sippy cup
- Use “healthy vs unhealthy” rather than “good vs bad”

School Age: ages 6-12 years

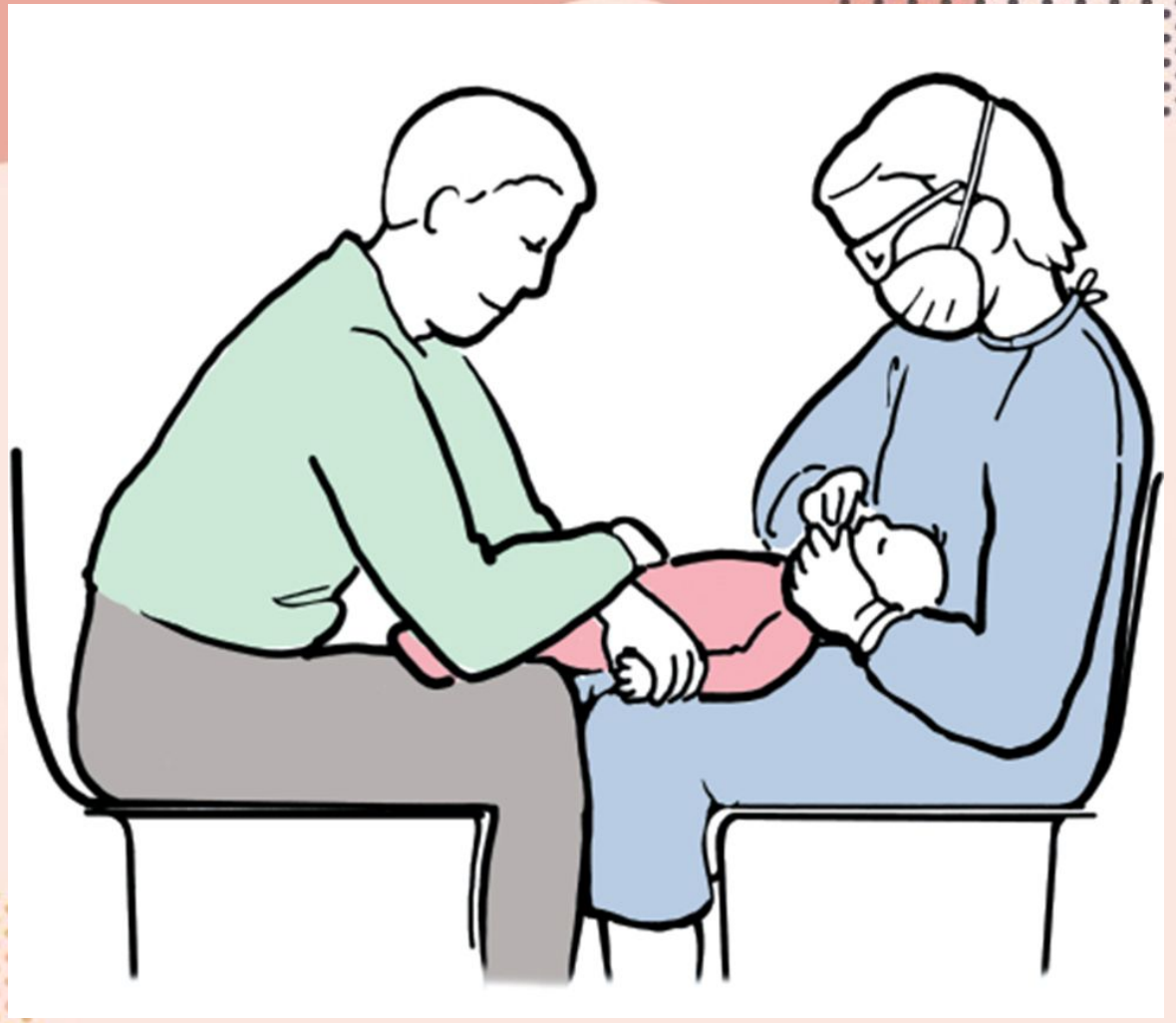
- Oral exam should occur prior to school
- More independent with oral hygiene
  - Age 6- child may be able to brush by themselves
- Periodontal assessment completed
- Use pictures, videos, and positive engagement
- Primary teeth will begin to exfoliate
  - Primary prevention: Dental sealants
  - 6 to 7 years of age
  - Frequency of dental visits depend on the need
- Sports related injuries
  - 50-90%: Upper lip, maxilla, maxillary incisors
  - Recommend mouth guards
    - Academy of Sports Dentistry (ASD)- custom-fabricated mouth guard
- Ultrasonic scaling used only on permanent teeth

Tips for Effective Clinical Management

- Oral examination
  - Knee-to-knee position (Infants and toddlers)
  - Explain prior to examination
  - Avoid using negative words (hurt, pain)
  - Parental involvement
  - Use tell-show-do to gain cooperation.
  - Use pictures, videos, and positive engagement

Box 47-1 Child-Friendly Substitution Words for Dental Terminology

Dental Term	Child-Friendly Term
Air/water syringe	Water squirter, wind
Amalgam restoration	Silver star
Dental light	Sunshine light
Explorer, scaler	Tooth counter
Fluoride varnish	Fluoride tooth vitamins
High-speed handpiece	Mr. Whistle
Low-speed handpiece	Tooth tickler, Mr. Bumpy
Mouth mirror	Tooth mirror
Mouth prop	Tooth pillow
Prophy paste	Special toothpaste
Dental hygiene treatment	Teeth cleaning
Saliva ejector	Mrs. Thirsty/special straw
Suction (high-speed)	Vacuum



Adolescent Stages and Oral Health: ages 12-17

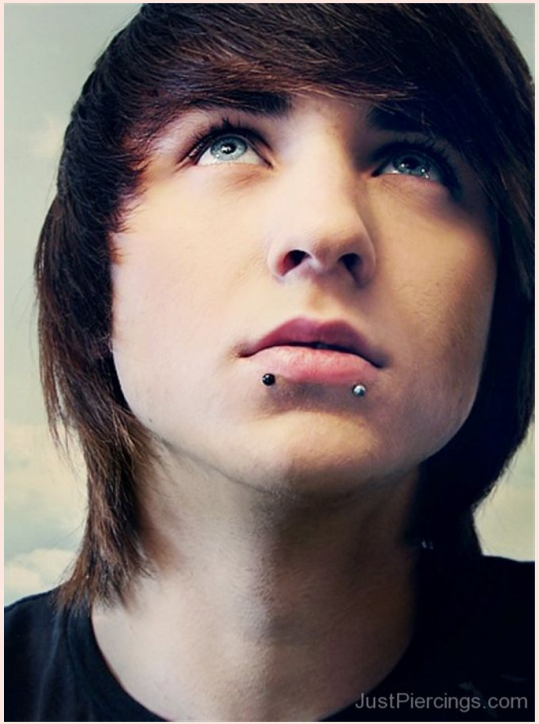
- Susceptible to:
  - high caries incidence
  - traumatic injury
  - periodontal disease
  - poor nutritional habits
  - orthodontics
  - Restorative care
  - Oral malodor
- Esthetic appearance

Adolescent Stages and Oral Health: ages 12-17

- Puberty and Menses:
  - Secondary sex characteristics develop
    - Bacteria associated with increased estrogen levels
      - Prevotella species & Tannerella forsythensis = periodontal disease
  - Plaque induced gingivitis modified by systemic factors
    - Puberty associated gingivitis and menstrual cycle gingivitis
      - Peak levels of estrogen and progesterone
  - Swollen, erythematous gingival tissues, herpes labialis, aphthous ulcers, swollen salivary glands, increase in gingival exudate
- OHI and Treatment
  - OHI- Increased toothbrushing, extra soft toothbrush, power toothbrush, meticulous interdental cleaning
  - Treatment- topical corticosteroids, periodontal debridement, scaling, root planing, mouth rinses, fluoride rinses, gels, and varnish

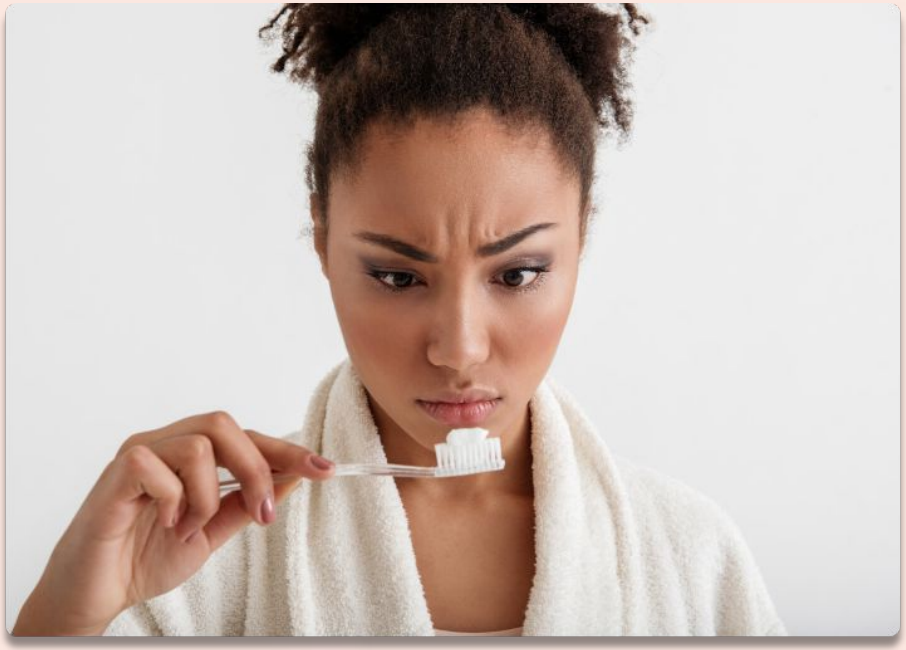
Oral Health Considerations: Adolescents (ages 12-17)

- Teach:
  - Tobacco education
    - Smoking, smokeless tobacco, second hand smoke
    - Oral effects
      - leukoplakia, periodontal disease, oral cancer
  - Obstructive sleep apnea (OSA)
  - Oral piercings
  - Substance abuse



Dental Hygiene Treatment: Adolescents (12-17)

- Assess the presence, position, and development of third molars
  - Provide referral if removal is indicated
- Oral manifestations of sexually transmitted infections
- Potential effects of hormone fluctuations and use of oral contraceptives on periodontal tissues
- Oral findings of anorexia nervosa or bulimia
- Traumatic injury to teeth
  - Providing mouth guards
- Pregnancy-educate about oral health of mother and infant



Periodontal Infections

Biofilm-Induced Gingivitis

- Incidence and severity may increase during puberty
- Clinical changes due to increased biofilm
- Exaggerated host response to dental biofilm

Risk Factors for Periodontitis

- Local factors
- Pathogenic microorganisms
- Untreated dental decay/defective restorations
- Poor oral hygiene
- Infrequent dental or dental hygiene
- Socioeconomic influences
- Use of tobacco
- Systemic diseases
- Host immune factors
- Genetic factors

Reasons for Referral

- SEVERELY CROWDED, MALPOSED, OR CONGENITALLY MISSING TEETH
- OVERBITE, OVERJET, CROSSBITES, OR OTHER MALOCCLUSIONS REQUIRING INTERVENTION
- LOSS OF PRIMARY MOLARS:
  - Usually disrupts the eruption and alignment of permanent molars and premolars
- PATHOLOGY OR SYSTEMIC ILLNESS
- SUSPECTED CHILD ABUSE OR NEGLECT
- SUBSTANCE ABUSE IN THE FAMILY

Documentation

- Overall appraisal of physical status and key health history findings
- Existing pathology: soft tissue, gingiva, caries, occlusal status
- Oral hygiene status and caries risk assessment
- Procedures completed (services rendered)
- Informed consent
- Instructions provided to patient/parent
- Child’s behavior throughout appointment (objective observations)
- Treatment planned for next visit

ODU SODH Clinical Considerations

- Only ages 5 years or older can be seen
- Parent or caregiver is encouraged to wait in the waiting room
  - Need to discuss health history, sign for informed consent, pay for treatment, and participate in OHI
- Ages 5-12:
  - Use the Child medical history and dental history form
  - No vitals
- Ages 13+:
  - Record vitals
  - Use adult medical and dental forms
- Occlusion: Angle's class
  - Only if permanent canines and/or first molars are present
- Additional findings
- Periodontal charting:
  - FGM- full mouth
  - Probe any permanent teeth
- Dental charting
  - Primate spacing
- Scaling
  - Only if calculus is present
  - No calc = no scaling grade
- Tx Plan:
  - Ages 5-12: D1120
  - Do NOT treatment plan calculus class

Summary

- Needs depend on the age of the patient
- Role of the dental hygienist
  - Inform and educate caregivers and patients
  - Interprofessional collaboration
- Early childhood caries
- Pediatric dental visits
  - OHI is important and individualized
  - Scheduling
  - Should begin no later than 12 months of age
    - Establishment of the dental home

Questions?

Critical Thinking Activity

Case #1

- Adolescent
- Scenario: A 17 year old male presents with fractured #8 and 9. He reports playing soccer and being hit in the face with a soccer ball. He also reports not wearing a mouthguard when he plays soccer. Upon examination of the oral tissues, you notice moderate gingivitis, moderate plaque accumulation, generalized and interproximal bleeding. The patient reports that they have a busy schedule and only brush their teeth for 30 seconds a day. The patient reports not flossing. The patient also reports he shares a tube of toothpaste with his brother.

- Is this an example of vertical or horizontal transmission?
- What are this patient's oral health needs?
- What should be included in this patient's oral hygiene routine?

Case #2

- Infant
- Scenario: A 9 month infant is brought into the dental office you work at. You note that the infant's mandibular central incisors have erupted, and you ask the parent about the child's oral hygiene routine at home. The parent states that nothing is done at home to take care of the infant's teeth since they have just come in. You ask about pacifier use, and the parent states that the infant tends to spit the pacifier out and they just clean it with their mouth before giving it back to their child. It is also mentioned that the child is put to sleep with a warm bottle of milk in their crib because the baby won't sleep without it.

- Is this an example of vertical or horizontal transmission?
- What are this patient's oral health needs?
- What should be included in this patient's oral hygiene routine?

Case #3

- Toddler
- Scenario: A 3 year old child and their parent comes into the dental office you work at. You notice upon examination of the teeth and tissues that there is plaque accumulation and localized erythema to the primary molars. You ask the parent if they have any concerns. The parent states that their child brushes once a day by themselves. The parent also states that the child is a picky eater, and it helps when the parent takes a bite of the food before offering it to the child.

- Is this an example of vertical or horizontal transmission?
- What are this patient's oral health needs?
- What should be included in this patient's oral hygiene routine?