Topics

- Normal Oral Structures
- Common Oral Conditions
- Eruption Patterns
- Dental Caries and Prevention
- Orofacial Trauma
Advisory Panel

- Content development and photography
  Steven M. Adair, DDS, MS
  Priscilla Johns Bond, DMD
  Robert Jon Feigal, DDS, PhD
  Constance M. Killian, DMD
  Joan C. Linhardt, MD, FAAP
  Gail E. Molinari, DDS, MS
  Arthur J. Nowak, DMD
  James F. Steiner, DDS
Advisory Panel

- Additional photographs were contributed by:
  - Timothy Kosinski, MS, DDS
  - Luc C. Martens, DDS
  - Donna Napiorkowski, RDH
  - Keith L. Ray, DMD
  - Deirdre R. Sams, DDS
  - O.B. Sveen, DDS
Normal Oral Structures

- Frenum
- Buccal Mucosa
- Tongue
- Gingiva
- Alveolar Mucosa
- Masticatory Mucosa
- Palate
- Tooth Form
Primary dentition, baby teeth, with normal spaces between the teeth.

- Mucosa
- Gingiva
The labial frenum is fibrous tissue between the lip and the mucous membrane above the gum tissue.
A diastema is a space between teeth.
Diastema in an Eight-month-old
The "ugly duckling" stage is often mistaken by parents as an orthodontic problem because there is a space between the top central incisors. This may be the norm between ages 7 through 12 years of age, and usually is not connected with a permanent space between the teeth. In this stage baby teeth are being lost and permanent teeth have not completely erupted.
A panoramic x-ray of a 7 year-old child. One can notice the complex mix of the permanent and the primary teeth at this stage.
Buccal Mucosa

The soft tissue lining the inside of the cheek.
Trauma from Cheek Biting

- Cheek Bite
- Chronic cheek biting
Tongue: Ventral Surface
(the underside of the tongue)

Lingual frenum
Tongue: Dorsal Surface
(the top side of the tongue)
Healthy gingiva, gum tissue, is coral pink in color and has a stippled or orange peel surface texture.
Pigmentation in the gum tissue is normal in African Americans.
The front part of the hard palate is covered by irregular ridges.
The hard palate is the bony "roof" of the mouth.

The soft palate partially separates the mouth from the throat.
The uvula is the fleshy lobe hanging down from the back of the soft palate.
Common Oral Conditions

- Acquired
- Developmental
- Congenital
Acquired Oral Conditions

- Candidiasis
- Glossitis
- Primary Herpetic Gingivostomatitis
- Recurrent Aphthous Ulcer
- Discolored Teeth
An infection in the mouth by the fungus, Candida Albicans, is known as thrush, and it is characterized by white patches on a red surface.
Glossitis

An inflammation of the tongue
Primary Herpetic Gingivostomatitis

This is the initial outbreak of an infection with the virus, Herpes Simplex. In this picture painful sores can be observed on the lips and gums. The gums are very red and swollen.
Sores can also be inside the mouth on the tongue, floor of the mouth, throat and cheeks.
Primary Herpetic Gingivostomatitis

(Symptoms)

- Fever
- Feeling run down and tired
- Enlarged lymph nodes in the neck
- Vesicles that progress to ulcers
- Occurs age 6 months to 6 years
- Spontaneous healing in 1 to 2 weeks
- Acute phase lasts 7 to 10 days
Primary Herpetic Gingivostomatitis

- Rest
- Take medication for fever and pain
- Soothing mouthrinse
- Orabase®, or petroleum jelly, as a protective barrier
- Dehydration is a concern
- Patient is contagious
- Antibiotics and steroids contraindicated
Three Subtypes

Minor (most common)
- Generally located on the lining of the lips, cheeks, soft palate and floor of the mouth
- Tend to be small and shallow ulceration

Major
- Larger and deeper ulceration

Herpetiform
- More numerous and look like blisters
Aphthous Ulcer
Aphthous Ulcer

• Cause is unknown
• Treat to relieve symptoms
• Healing
  Minor – 7 to 10 days, without scarring
  Major – 2 to 4 weeks, may scar
• Discolorations inside the tooth
  • Fluorosis – enamel color change and irregularities
  • Tetracycline – dark bands

• Discolorations on the tooth surface
  • Iron stain - accumulation of Iron from supplements
White flecking of the enamel in mild fluorosis
Moderate and severe forms of fluorosis have changes in the enamel surface and color that are easier to see.
Tetracycline Stain

Mild
Tetracycline Stain

Moderate
Tetracycline Stain

Severe
Tetracycline Stain

Severe
The dark brown on these teeth is from iron and can be removed.
Developmental Conditions

- Mucocele
- Ranula
Mucocele

Fluid trapped beneath a thin layer of mucous membrane
Ranula

The same as a mucocele but located on the floor of the mouth
Hemangioma
Ankyloglossia

The lingual frenum is too short resulting in a tongue-tied condition.
Congenital Epulis of the Newborn

- Benign lesion
- Present at birth
- Frequent in females in the anterior maxillary arch
- May cause feeding and respiratory problems
- Spontaneous regression or excisional biopsy
- Recurrence rare
A tumor or abnormal enlargement of the gum tissue present at birth.
Natal Teeth

- Premature eruption of preliminary teeth
- Tooth should be retained unless mobile
Natal Teeth
Natal Teeth
Hemangioma

- Occurs within first year
- Female predilection
- Local or diffuse, red to blue color
- Flat or modular, compressible
- Commonly located on lips, tongue, or buccal mucosa
- Hemorrhage from trauma is common
- May require surgery or may heal spontaneously
Hemangioma
Eruption Patterns

Approximate eruption times
Eruption Patterns

- Tooth formation begins 7 weeks in utero
- Mineralization begins at 4th month of fetal development
- Symmetrical eruption pattern
- Mandibular teeth erupt first
- Sequence is more important than timing
Eruption Patterns
Primary Teeth

- 6 months
  Primary mandibular central incisors
- 7 months
  Primary maxillary central incisors
7 Months =
First Primary Teeth Erupt
11 Months = 4 Erupted Primary Teeth

7 Months +4
11 Months

0 Teeth +4
4 Teeth
15 Months = 8 Erupted Primary Teeth

11 Months + 4 Teeth
15 Months

4 Teeth + 4 Teeth

8 Teeth
19 Months = 12 Erupted Primary Teeth

15 Months + 4

19 Months

8 Teeth + 4

12 Teeth
23 Months = 16 Erupted Primary Teeth

19 Months +4 12 Teeth +4
23 Months 16 Teeth
27 Months = 20 Erupted Primary Teeth

23 Months + 4 = 27 Months

16 Teeth + 4 = 20 Teeth
Eruption Pattern: Permanent Teeth

6-year molar

12-year molar
Eruption Pattern: Permanent Teeth

Anterior
Teething Process

- Natural process
- Increased drooling
- Desire to bite or chew
- Mild pain
- No evidence of high fever, diarrhea, facial rash, or sleep problems
Dental Caries: Etiology

TOOTH
- Age
- Fluorides
- Morphology
- Nutrition
- Trace Elements
- Carbonate Level

SUBSTRATE
- Oral Clearance
- Oral Hygiene
- Salivary Stimulants
- Frequency of Eating
- Carbohydrate (type, concentration)

FLOW RATE pH

FLORA
- Strep, Mutans (Substrate)
- Oral Hygiene
- Flouride in Plaque
Caries (tooth decay or cavities)
• a disease that involves many factors
• the disease process is started by bacteria (*Streptococcus Mutans*).
• bacteria break down carbohydrates (sugar is a carbohydrate)
• acids are produced that cause minerals to be lost from the teeth
• mineral loss results in cavities

Three things must be present for tooth decay to occur:
• a tooth
• bacteria (flora)
• sugar (substrate)
The germs that cause tooth decay are transmitted from the mouth of the mother to the baby.
Patterns of Decay

- Early Childhood Caries
- Pit and Fissure Caries
- Smooth Surface Caries
One or more decayed, missing, or filled primary teeth in a child less than 6 years old is ECC.
Early Childhood Caries

Mild
Early Childhood Caries

Moderate
Early Childhood Caries

Abscess

Severe
An abscess means the infection has spread to the inside of a tooth.
Decay in the crevices on the chewing surfaces of back teeth
Smooth Surface Caries
Facial cellulitis

Due to untreated dental abscess
The American Academy of Pediatric Dentistry recommends a dental consultation shortly after the eruption of the first primary tooth.
Fluoride Supplements

- Prior to recommending supplementary fluoride, the fluoride content of the child’s total water intake must be determined.

Fluoride reduces the risk of developing tooth decay.
A dentist or physician must prescribe fluoride supplements.
Topical Fluoride

- 20% to 40% caries reduction
- Professionally applied
- Over-the-counter rinses
- Prescription rinses and gels
- Dentrifices
Over-the-counter rinses

- OTC rinses not recommended for children under 6 years of age

- Recommended for
  
  Moderate to severe caries
  Orthodontic patients
  Patients with prosthodontic appliances
• Use with supervision under the age of 6
• Small pea-sized amount is needed
Nonnutritive Sucking Habits

- Normal neonatal development
- Rooting reflex
- Sucking reflex
Nonnutritive Sucking Habits
Nonnutritive Sucking Habits

- Spontaneous abandonment at 2 to 4 years of age
- May cause protrusion of upper anterior teeth
- Evaluate intensity, duration, and frequency of habit
Changes in dentition...

due to nonnutritive sucking habits
Changes in dentition...

due to nonnutritive sucking habits
Nonnutritive Habit Intervention

- Habit normally ceases age 4 to 6 years
- Success depends on child’s readiness
Pacifier Use
Pacifier Use and Safety

- Use only sturdy, one-piece, nontoxic, flexible pacifier
- Never attach around child’s neck
- Discourage use of sweeteners
- Replace the pacifier when worn
Orofacial Trauma

- Injuries to primary and permanent dentition
Orofacial Injury Assessment

- Review health history
- Assess systemic/neurological effects
- Evaluate tetanus immunization
- Be alert to potential child abuse
Injury Classification

- Fracture
- Displacement
- Avulsion
Fractured Primary Tooth
Fractured Permanent Teeth
Teeth are jammed into the gum

Intruded Permanent Teeth
Teeth that are pushed out of the gum tissue and bone
Knocked out (avulsed)
Avulsion Site
Avulsed Permanent Tooth

- Reimplant ASAP
- Do not scrub clean - rinse
- If unable to implant, transport to dental office in milk or saline
- Plan for root canal therapy
- **Laceration** - a wound produced by tearing
- **Treatment**
  - Hemorrhage control
  - Wound cleansing
  - Suture as indicated
  - Antibiotics for “through and through” lacerations
Frenum Laceration
Recent Electrical Burn
Wear a mouthguard or mouth protector when playing sports to protect the teeth, lips, tongue, face and jaw.
Prevention of Dental Trauma
Information in this program was adapted from a series on oral health for healthcare professionals by the American Academy of Pediatric Dentistry, and Proctor and Gamble Oral Health Products. The information has been revised to be useful to general audiences.