



## CHILDREN'S ORAL HEALTH FROM BIRTH TO THE ERUPTION OF PERMANENT TEETH (approximately 6 years of age)

### PRIOR TO AND AT THE ERUPTION OF THE FIRST DECIDUOUS TEETH

#### Oral Candida (thrush)

1. Opportunistic fungal infection caused by *Candida albicans* that accumulates on the oral mucosa
2. *Candida albicans* is a normal element in the environment of the oral cavity but as an overgrowth, irritating symptoms appear
3. Oral Candida causes creamy white lesions (may have "cottage cheese" appearance), usually on the tongue or inner cheeks. May extend to the roof of the mouth, gums or tonsils, or the back of the throat
4. Soreness may cause general irritability
5. Refer for anti-fungal treatment (e.g, difulcan)
6. In breast-feeding infant, a cycle of infection may occur in which case both mother and infant may require antifungal treatment

#### Oral self-soothing

1. Digital sucking and pacifier use fill an infant's psychological need for self-soothing
2. Counsel caregivers to never clean pacifiers by putting them in their own mouths
3. Counsel caregivers to **abstain from dipping any object** used for oral self- soothing in sugary substances (e.g. honey, syrup, soda etc)

### ORAL ENVIRONMENT DEVELOPMENT IN THE INFANT

1. Newborns are inoculated by their surroundings and their caregivers with the bioflora (bacteria, fungi, viruses etc.) that reside in their oral biofilm and saliva
2. Bacteria in the oral biofilm is one factor within the caries disease process
3. Caries are known to be caused by acids produced by *Streptococcus mutans*, *Lactobacillus*, and many other bacteria in the mouth. These bacteria colonize dental plaque. These bacteria are present in healthy adult saliva and are part of the normal oral bioflora environment in most adults.

### TEETHING

1. Eruption of deciduous teeth may be painful causing an infant to be irritable and/or experience difficulty sleeping, but does not cause fever, upper respiratory or ear infection, diarrhea, rash or seizures. If any of these are reported, counsel caregiver to seek medical attention for the infant.

2. Excessive drooling is normal.
3. Warn caregivers not to utilize lidocaine-containing products for teething pain (may be available over-the-counter)
  - a. Apply cold teething ring or cloth to gums
  - b. Provide acetaminophen or ibuprofen if necessary
  - c. Remember tooth emergence may be preceded by a hematoma—no treatment is needed in primary dentition
  - d. Recommend never to dip pacifier in honey or other sweetened food or drink

### **RISK OF CARIES MAY BE ASSESSED IN INFANTS, TODDLERS AND YOUNG CHILDREN**

#### **Risk factors include:**

1. Primary Caregiver(s) have active caries and/or have had restorations within the past 12 months
2. Continual bottle/sippy cup feeding with fluid other than water (especially when sleeping and/or at night)
3. Caregiver does not brush erupting teeth and/or does not use fluoride-containing toothpaste
4. Frequent ad lib snacking (especially sugar containing snacks)
5. Special healthcare needs (that may difficult hygiene, or promote a frequent diet with carbohydrates)
6. Medicaid eligibility

### **DEMINERALIZATION/REMINERALIZATION CYCLE**

1. An ongoing process in which calcium and phosphate ions are dissolved from the tooth enamel by acids produced by bacteria in the mouth (demineralization). When the saliva environment returns to a neutral pH, this cycle is reversed and, especially in the presence of fluoride which acts as a catalyst, demineralization is followed by calcium and phosphate ions reincorporating into the enamel surface (remineralization)
2. This is a natural process that is ongoing in the mouths of children and adults with normal salivary flow
3. Minerals ions essential in saliva for the process to be effective are: calcium, phosphorous and fluoride

### **SALIVA AND SALIVARY pH (CAPITAL IF ALL CAPATOLIZED?)**

1. Healthy, resting, unstimulated saliva pH will measure approx. 7.4
2. Salivary pH drops to acid levels in the presence of fermentable carbohydrates (including sugars)
3. pH levels require more than 1 hour between feedings (bottles or snacks) to return to a neutral level, therefore, salivary pH is impacted by frequency of feeding (including drinks, meals and snacks)
4. Constant acid environment creates disruptions to remineralization/demineralization process and development overtime of a very cariogenic (caries producing) oral biofilm

### **CHARACTERISTICS OF EARLY CHILDHOOD CARIES (ECC)**

1. Chronic
2. Site-specific (Upper front teeth, and biting surfaces of back teeth first)

3. Multifactorial
4. Dynamic (not necessarily continuous)
5. Presents in identifiable stages (white/brown/black spot, hole-cavitation, abscess)
6. Caries disease process involves a shift of the balance between protective factors (supporting remineralization) and destructive factors (that contribute to demineralization) to favor demineralization of the tooth structure over time
7. Caries is a disease process that may be arrested
8. If carious lesions are suspected, it is important to refer to a dental professional, and at the same time continue preventive services in non-dental settings

### **IMPACT AND IMPORTANCE OF FLUORIDE**

1. Fluoride is very safe and effective
2. Fluoride acts as an active catalyst in the natural remineralization/demineralization process to keep the enamel surface intact and hard
3. Fluoride containing toothpaste and water (bottled or tap) are recommended to help prevent caries. Use of toothpaste-in very small amounts (pea-sized) and with help of an adult. is recommended as soon as teeth start to erupt
4. Fluoride application **in the form of varnish** is very effective to prevent cavities and can be applied by dentists or physicians, or, in many states, by those professionals such as dental hygienists or nurses under the supervision of a dentist or physician
5. Fluorosis develops in a tooth **BEFORE it erupts** in the oral cavity. It generally develops when fluoride is consumed at limits well past community suggested tolerances. Fluorosis is a cosmetic condition that often is associated with areas where fluoride occurs naturally (not added to drinking water) in ground water
  - a. Swallowing large amounts of toothpaste on a daily basis is a risk factor for fluorosis for a tooth BEFORE it erupts. For this reason, caregivers need to apply fluoride-containing toothpaste and not permit the child dispense large amounts on their own
  - b. Fluoride varnish application is not a risk factor for fluorosis

### **RATIONALE FOR PREVENTING DENTAL CARIES IN INFANTS, TODDLERS AND CHILDREN**

#### **Prevention of caries in primary deciduous teeth positively impacts the health of permanent teeth** **Prevalence of Caries**

1. Dental caries is one of the most prevalent chronic health conditions among children.
2. Nearly half of all children entering kindergarten have had one carious lesion.
3. Profound disparity. As much as 80% of caries is experienced by only 20% of the population (especially those of lower Socio-Economic Status, and minority groups).

#### **Impact on Child Development**

1. Dental disease may affect learning, speech development, nutritional intake, self-concept and self-esteem, social development, and quality of life
2. 1 in 7 elementary school children suffer from a pain from a toothache, affecting concentration, school attendance, and academic achievement

3. Caries is a preventable disease, and a cost burden to all concerned. Children with many cavities at a young age often need to be treated in the operating room under general anesthesia

#### **ORAL HYGIENE RECOMMENDATIONS FOR THE PREVENTION OF CARIES: INFANT AND TODDLER**

##### **At the eruption of the first tooth**

1. Using a soft toothbrush, a fluoride containing toothpaste (when teeth appear--around 6 months of age) should be used to clean the infant's mouth by the Caregiver twice daily
2. The quantity of toothpaste applied to toothbrush should only the size of a smear at first, and gradually increased to that of a small pea
3. Ad lib feedings (including breast-feeding) should be discouraged in favor of regular feedings
4. Children should be taught not to swallow or ingest toothpaste
5. Application of fluoride varnish is recommended by the American Association of Pediatrics (AAP) at each well child visit (This is especially important for children at risk for caries)

##### **Oral Hygiene Recommendations: Prevention of caries in the child between the ages of 3 and 6 years**

1. Caregiver assisted cleaning of new teeth twice daily with fluoride-containing dentifrice (pea size)
2. Application of fluoride varnish for children at risk for caries
3. Encourage: regular meals/feedings
4. Discourage:
  - a. Frequent feeding, drinks and snacks
  - b. Sugary foods and beverages, carbohydrate concentrated snacks
  - c. Feeding/drinking on demand
  - d. Bedtime bottle/sippy cup (anything except water)

Transcribed and edited from material presented by Dr. Margherita Fontana, Dr. Jan Mitchell, and Dr. Poonam Jain at a workshop series held in June, 2015 and sponsored by Johnson and Johnson and Mondelez International.