Oral Health: Early Intervention for Expectant Mothers and Children and the Impact on Overall Health

Michelle Stafford, DDS
Board Certified Pediatric Dentist
October 11th, 2014

Logistics of Presentation
- American Academy of Pediatric Dentistry Reference Guide
- Board Certified Pediatric Dentist
- Resource list at the end of the presentation
- Time for questions at the end

Course Objectives
- Early Childhood Caries
- Age One Dental Visit
- Pregnancy and Oral Health
- Current Research

My Philosophy & Background
- Prevention
  - Age One Exam
  - Healthy choices
  - Education

Positive Experience for Families: Kids and Parents!

Early Childhood Caries
- Definition: “The Disease... is the presence of one or more decayed, missing, or filled tooth surfaces in any primary tooth in a child 71 months (~6 years) of age or younger.”
Presentation of Decay

Healthy looking teeth

Cavities between all primary molars

ECC Factors

- Mother-infant transmission of bacteria
- Lack of brushing & flossing
- High sugar diet
- Oral bacteria
- Xerostomia
- Frequent snacking
- Sipping acidic drinks

Cavity Consequences

- Facial cellulitis/swelling secondary to dental infection
- Lethargy, transient fever
- Chronic mouth pain
- Behavioral changes
- Spread into sinus infections
- Cases of death from dental infection
  - Deamonte Driver, 2007, D.C. – Maryland
  - Age 12, quietly suffered, did not complain

“But aren’t they going to fall out?”

- Last baby tooth exfoliates around age 10-12 years!
- Early, good habits last a lifetime
- Eruption of permanent molars around age 6
  - Bacteria spreads quickly to erupting permanent teeth and can lead to cavities
  - Often parents do not notice eruption of permanent molars until cavity present

Children and Pain

- Difficulty expressing where it hurts
- Headaches & stomach aches
- Lethargy
- Behavioral changes
- Distracted at school
- Unable to focus on school work
- May be their “norm”

Growth and Development

- Importance of Primary Tooth Retention
  - Difficulty in chewing when molars are missing or hurting
  - Place holders for permanent teeth
  - Early loss can lead to severe space limitations and abnormal eruption of permanent teeth
Speech Development

- Difficulty biting if front teeth missing or hurting
- Many sounds and words depend on tooth presence and placement

Psychological Development

- Teasing affects self-esteem
- Hiding face/mouth
- Less likely to smile widely

Disturbing Statistics

- From 1988 to 2004:
  - Prevalence of dental caries in primary teeth among children who were 2 to 5 years of age significantly increased from approximately 24 percent to 28 percent.

Early Childhood Caries (ECC) Facts

- Most common chronic childhood disease
- #1 preventable childhood disease
- 5x more prevalent than asthma
- 2000 Report by Surgeon General David Satcher, M.D., Ph.D. on oral health

Financial Impact

"While parents may avoid taking a child to the dentist to save money, studies show that children who have their first dental visit before age one have 40 percent lower dental costs in their first five years than children who don’t, making preventive care a sound health and economic decision.”

(www.aapd.org/media/ECCstats.pdf)

Preventing Cavities

- Prevention
  - Diet Counseling
  - 6 month re-care exams
  - Age appropriate oral hygiene instruction
    - Brushing
    - Flossing
    - Techniques for parents of little ones
    - Parents should assist until age 8
  - Radiographs as needed
Preventing Cavities

- Dental caries is a **preventable** disease
- 3 month fluoride therapy if high risk
  - Frequent snacking
  - Xerostomia
  - Orthodontic appliances
  - Active dental decay
  - Parents/siblings with active decay
  - Previous treatment
  - White spot lesions

Age One Dental Visit

- Aspects of the Appointment
- Purpose of the Visit
- Caries Risk Assessment
- Anticipatory Guidance

Get It Done in Year One

- The American Academy of Pediatrics (AAP) and American Academy of Pediatric Dentistry (AAPD) recommend **Age One**
- AAPD recommends: "Establishment begins no later than 12 months of age."
  - Establish an early dental home
  - Provide parents education and tools
  - Make it positive!

Why Age One?

- Early visits are proven to prevent cavities
- Answer questions regarding: bottles, sippy cups, thumb-sucking, eruption – especially first time parents
- Positive dental visits sets a child up for life

Why Age One?

- Incipient Lesions
  - Cervical/interproximal of incisors
  - Pits & fissures of molars
- Moderate Lesions
  - Interproximal lesions
- Severe Lesions
  - Infections
  - Pulps/nerves affected

Why Age One?

- More treatment options
  - Fewer teeth
  - Motivated parents
  - Usually small/incipient caries
  - Simpler procedures
    - Small fillings/restorations
    - Frequent fluoride varnish
Why a Pediatric Dentist

- Additional child-focused training
- More fun! Designed with kids in mind
- Able to accommodate children at age one
- Many general dentists are not comfortable with small children

Well-Child Dental Exam

- Lap-to-lap dental exam
- Oral hygiene instruction & nutritional counseling
- Brushing & flossing tips
- Caries risk assessment
- Fluoride varnish
- Trauma & emergencies

Teething

- Ill-Defined, widely varying opinions
  - Non-evidence based
    - AAP: "Teething occasionally may cause mild irritability, crying, low-grade temperature (but not over 101°F Fahrenheit), excessive drooling, desire to chew.”
    - Differs from child to child
    - Co-morbidity: oral primary herpetic gingivostomatitis

Teething Suggestions

- Camilia liquid
- Hyland’s Teething Tablets
- Baby Orajel
- Teething rings

Bottles/Sippy cups

- Encourage breaking bottle habit by age one
- Once child has teeth – only water in bottle to fall asleep
  - At least remove bottle once child asleep and wipe out mouth with washcloth/Spiffies

Thumb Sucking/Pacifiers

- Recommendation:
  - Speech pathologists: age one
  - Pediatric dentists: age three
- Risk of prolonged Habit
  - Can affect speech and normal growth & development
  - Growth changes that can occur:
    - Palate (roof of mouth)
    - “Bucked out” front teeth
    - Cross-bite in posterior teeth
Trauma

- Greatest incidence: 2-3 years when developing motor coordination
- Learning to walk/run
  - Falls most common
- Discoloration without early loss

The Necessity of X-Rays

- Standard of care
  - Is an X-ray necessary to complete the exam?
- Actual mrem for digital x-rays vs. other sources of radiation
  - Dental x-ray = 1-2 mrem
  - CAT Scan = 110 mrem
  - Flight PDX to NY = 3-5 mrem
  - Sleeping next to someone = 2 mrem/year
  - Eating plants and animals = ~20 mrem/year
  - Total average background = 360 mrem/year
- Great sources:

The Necessity of X-Rays

- Oral Health During Pregnancy
  - Advice for women prior to conception
  - Link between periodontal disease and adverse outcomes
  - Dental treatment during pregnancy
  - Hormone-induced gingivitis/periodontitis
  - Breast-feeding practices
  - Contagious oral bacteria

Prenatal Discussion

- Women trying to conceive
  - Encourage dental exam and treatment completed prior to pregnancy
  - Best to take radiographs prior to pregnancy
  - Encourage increased oral hygiene
  - Small cavity = quick progression
  - Gum with xylitol

Pregnancy

- Hormone-induced gingivitis/periodontitis
  - Red, swollen gingiva (gums)
  - Gingiva bleeds easily, even with soft brushing
  - Peaks in 8th month
  - Front teeth more affected than back teeth
  - Increased tooth mobility
  - Microbial shift from aerobic to anaerobic bacteria (gingivitis progresses to periodontitis)
## Pregnancy

- Link between periodontal disease and adverse outcomes
  - Preeclampsia
  - Pre-term delivery
  - Low birth weight

## Contagious Bacteria

### Mutans Streptococcus – Cariogenic Bacteria
- Transmitted from mother to child
  - Mother has active decay – baby will have same cariogenic bacteria
  - Mother has gingivitis/periodontitis

## Prenatal Discussion

- **Best time for dental treatment?**
  - 2nd trimester

## Breast-feeding Benefits

- **Mother/child bond**
- **Infant health and development**
  - Contains IgA and IgG and anti-inflammatory properties
  - Decreased acute otitis media
  - Protection against gastroenteritis and diarrhea (coats intestinal lining and kills pathogens that cause infections)
  - Combats lower respiratory tract infections
  - Protects against obesity (possibly by means of improved self-regulation of energy)
- **Nursing mother health**
  - Reduced risk of breast cancer
  - Reduced risk of ovarian cancer

## Breast-feeding/Bottles of Milk

- At-will breast feeding or bottles and risks to teeth
  - Constant feeding of cow’s milk/breast milk/juice can lead to early childhood cavities
  - Cow’s milk/formula in bottle or breast milk while child falls to sleep – sits on teeth and weakens enamel
  - Introduction of bacteria/solid food/sugar
  - Combines with oral bacteria

## Breast (bottle) feeding Advice

- Encourage **regularly scheduled** breast-feeding (or bottles) until mother and child ready to stop
- Older infants/toddlers – it is not recommended to nurse to sleep or fall asleep with milk bottle
- Start brushing as soon as first tooth erupts
- Recommend wiping out mouth after nursing (drinking bottle) and prior to sleeping
- Use wipes with Xylitol
Lingual Frenulum

- Ankyloglossia
- "Tongue-tied"
- Frenulum affects:
  - Breast-feeding
  - Speech
  - Oral cleansability
    - Tongue range of motion
    - Potential increase of plaque on posterior teeth resulting in increase likelihood of decay

Labial Frenulum

- Affects:
  - Breast-feeding
  - Diastema between anterior teeth
  - Possible contributor to decay in primary front teeth

Frenulum Treatment

- Frenectomy/frenulectomy
  - Scissors/scalpel
  - Soft tissue laser

Latest Research

- Xylitol
- Silver Nitrate

Xylitol

- Reduces Caries Incidence
- Used during pregnancy: reduces mother-child transmission
- On-going studies to determine frequency, duration and amount needed for benefit
- Current recommendations:
  - 4-10 grams per day in 3-7 consumption periods

Science of Xylitol

- 5-Carbon Sugar Alcohol derived primarily from forest and agricultural materials
- Sweetener for products aimed at diabetic patients, diet products and improved oral health
- Inhibitory effect on oral bacteria: Mutans Streptococcus
- Reduces plaque formation and bacterial adherence (antimicrobial)
- Reduces oral acid production
Xylitol Products
- Tooth Gel for Infants
  - Spry, Branam
- Oral wipes for infants
  - Spiffies www.spiffies.com
- Tooth Tissues
- Toothpaste for toddlers, children and adults
- Chewing gum
  - Trident with xylitol, Spry, Zapp!
- Candy, lollipops, chocolates
  - Lemonade
  - www.drjohns.com
- Ketchup, Honey, BBQ Sauce, etc
  - www.zappgum.com

Cari-Free Program
- Cari-Free Program: aimed towards decreasing the bacterial levels and increasing pH
- Test: > 1500 = increased likelihood for decay
- Rigorous program – only for motivated patients!

Silver Nitrate
- Incipient Carious Lesions
- Decay is not removed
- Decay is arrested, stops progression
- Teeth turn dark brown/black in color where decay resided
  - Eventually remove arrested decay and put in white filling if cosmetics a concern

Take Home Message
- Encourage parents to establish Dental Home by Age One
- Remember to have some FUN everyday!

Contact Info
doctormps@visitworldofsmiles.com
www.visitworldofsmiles.com
503-626-9700

References
- Pediatric Dentistry Reference Manual, Published by the American Academy of Pediatric Dentistry. Vol 35 No 6 2013-14
- Filstrup, Sara et. al. “Early Childhood Caries and Quality of Life: Child and Parent Perspectives” Pediatric Dentistry pg. 431-440, revised April 6, 2003
- http://www.mndental.org/public_home/educational_activities/vio_all_day_get_decay/
- Press Release: Preserving your Baby's Dental Health, Chicago, Sept 1st, 2005
- http://www.aapd.org/media/ECCstats.pdf
- http://www.perio.org/consumer/2a.html
- http://www.healthychildren.org/English/ages-stages/baby/teething-tooth-care/Pages/Teething-4-to-7-Months.aspx