

Pediatric Oral Health Promotion and Disease Prevention



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Prevention of:

- Caries
- Periodontal Diseases
- Trauma
- Habits and Growth Problems

Pediatric HP/DP Data

- 50% under Age 12 Caries Positive
 - 7 X Asthma
- Age 5-17: Caries Reduced 18 to 8 DMF
- 80% of Caries in 20% of Children
- 40% under 12 Have Gingivitis
- AAPD Member Study

Caries and Infection

- Untreated abscess:
 - Cellulitis
 - Cavernous sinus thrombosis
 - Ludwig's angina

Facial cellulitis



due to untreated dental abscess

Facial cellulitis



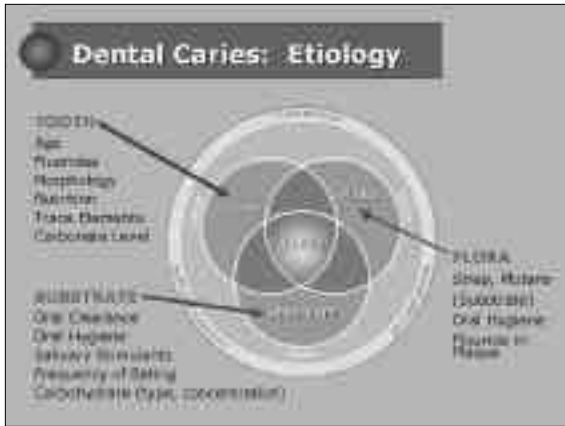
Due to untreated dental abscess

Dental Caries

- Etiology and Transmission
- Patterns of Decay
- Caries Risk Assessment
- Anticipatory Guidance



Dental Caries: Etiology and Transmission



Caries: An Infectious Disease

- Transmission from Caretaker
 - High Caries Rate > High Infectivity
- Occurs from 6 to 24 months
 - Mutans Streptococcus
 - 50% Positive by Year 1
 - Lactobacillus et al
- Delayed Infection = Decreased Caries



Initial Dental Visit

- The American Academy of Pediatric Dentistry recommends a dental consultation shortly after the eruption of the first primary tooth.

Initial Dental Visit



Dental Examination



Oral Hygiene Habits



Disclosed Plaque



Disclosed Plaque







Toothpaste

- Vehicle for Fluoride
- One Inch = 1 mg = (Daily Dose)
- Pea Size Amount
- ADA Seal of Approval

**ADA-Approved
Fluoridated Dentrifrice**

- Use with supervision under the age of 6
- Small pea-sized amount is needed

Brush

- Soft, Multitufted, Rounded Bristles
- Large Handle/Small Head
- Mechanical Good/Better
- Parents to Age 6
- Acidogenesis > 24 Hours

**Toothbrushes
Designed for Children**



● Toothbrushing Technique



Retract the tongue and check for visibility

● Supervised Toothbrushing



● Toothbrushing Technique



Position the child for optimal stabilization and intraoral visibility

● Toothbrushing Technique



- Angle bristles toward the gingival margin
- Use light pressure with a circular motion
- (lingual surfaces also need to be brushed)

● Flossing...



can be initiated as needed

Risk Factors

- Diet
 - Frequency and Form
- Genetics
 - Saliva, IgA, Enamel, Morphology
- Transmission Potential
- Nutrition
- Early Lesions = Higher Later Caries

Risk Assessment

- To Identify Individual Level of Risk
- Focus Resources
 - Recall Interval
 - Timing Radiographs
- First Visit Age 1!

Caries Risk Assessment

- Fluoride History
- Dietary Habits
- Sleeptime Habits
- Medications
- Nonnutritive Sucking Habits
- Family History
- Oral Hygiene Habits

Family History

- Dental History
- Dental attitude

Dietary Habits

- Food
 - Types
 - Consistency
 - Frequency of consumption

Fluoride History

- Dosage
- Frequency
- Source
 - Water
 - Supplements
 - Rinses
 - Dentifrices

Medications



- Check sucrose content
- Evaluate medications taken for chronic conditions

Anticipatory Guidance

- Helps parents anticipate potential oral health problems

Anticipatory Guidance


- Initial Dental Visit
- Fluoride
- Diet
- Oral Hygiene
- Nonnutritive Sucking
- Sealants

Anticipatory Guidance

- Fluoride Sources
- Diet
- Hygiene
- Habits
- Trauma

Patterns of Decay

- Baby Bottle Tooth Decay
- Pit and Fissure Caries
- Smooth Surface Caries



Baby Bottle Tooth Decay
(Nursing Caries)

- Initially affects primary maxillary incisors
- CAUSES
 - Nursing bottle at sleep times
 - Breast-feeding (at will) after teeth have erupted

Baby Bottle Tooth Decay
(Nursing Caries)



Severe

Smooth Surface Caries

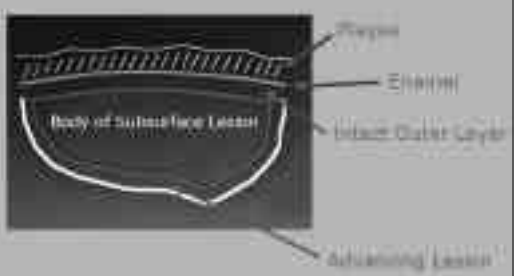


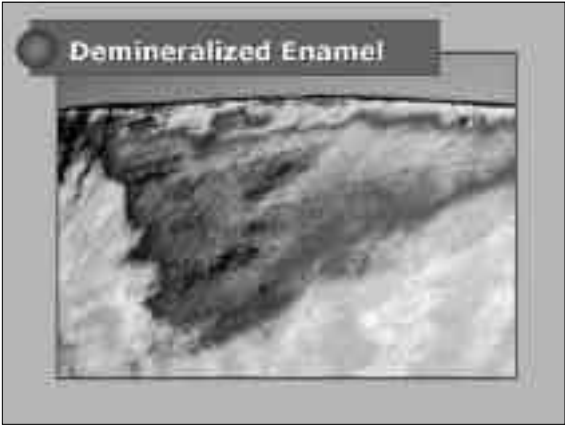
Enamel Structure



Enamel crystals in an organic matrix

Subsurface Lesion







Early Childhood Caries

- Prolonged Frequent Ingestion
- Maxillary Incisors > Molars, Canines
- White Spot
- Presence in Head Start > 90%

Sleeptime Habits



**Baby Bottle Tooth Decay
(Nursing Caries)**



**Baby Bottle Tooth Decay
(Nursing Caries)**



Mid:



Prevention of ECC

- DC Bottle by 10-12 Months
- 15 to 20 Minute Feeding
- **INFANT HELD DURING FEEDING**
- **NEVER START = Never Have to Stop!**

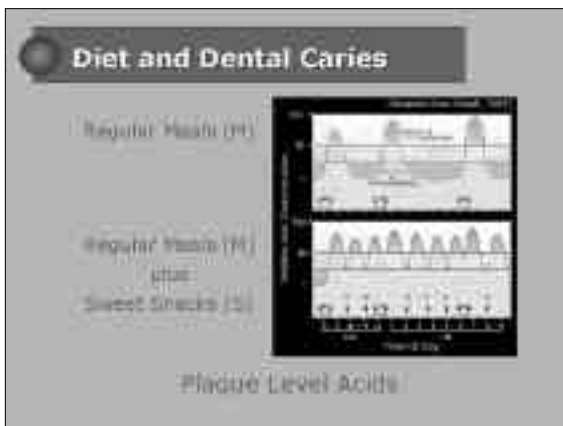


Therapeutic Options

- Dietary Counseling
- Salivary Analysis
- Fluoride Sources
- Antimicrobials
 - Especially Medically Compromised
- Sealants

Diet

- Frequency and Form
- Demin vs. Remin
- Stephan Curve
 - Neutral 1 HOUR
- Soda in 5 Minutes vs. 2 Hours



Diet and Dental Caries

- Factors influencing demineralization
 - Texture
 - Frequency of ingestion
 - 2 regular meals
 - 2 to 3 snacks

Cariogenicity

- Impossible to Rank
- Safe Foods?
 - Chocolate, Cheese
- Caramel vs. Cookie
- Retention

Fluoride

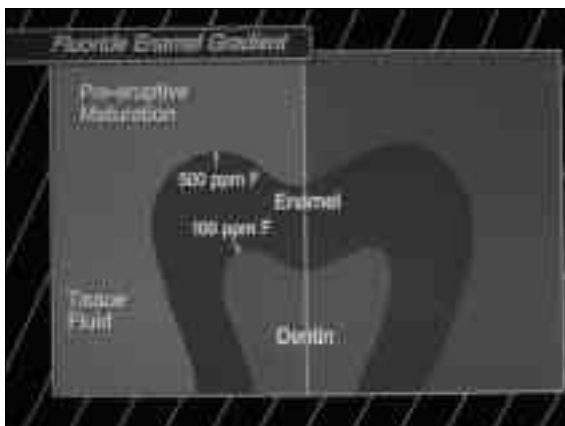
- Dietary
 - Water supply
 - Supplements
- Water Fluoridation
 - Began in 1945
 - Affects 50% of the population
 - Can provide a 50% reduction in dental caries

Fluoridation

- Provides Continuous Low Level
- 61% U.S. Households
- Bottled Water RARELY Fluoridated
- Ambient Sources

Topical Fluoride

- APF 1.23% 4 Minutes
 - 60 Second Brands Less Effective
- 5 cc (1 tsp) Total Both Trays
- Sit Upright > No Ingestion
- Saliva Ejector



Topical Fluoride

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

Fluoride Varnishes

- Long History in Europe
- Excellent Clinical Effectiveness
- 0.1% Difluorosilane
 - Durafluor, FlourProtector, etc.
- Easy to Use: Paint THIN Layer on Dry Teeth
- 24 Hour Slight Yellowing

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

Fluoride Supplements

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

Fluoride Supplements

- Forms
 - Drops
 - Chewable Tablets
 - Tablets
 - In combination with vitamins
- Dosages
 - 0.25 mg
 - 0.5 mg
 - 1.0 mg

ADA-Recommended Supplemental Fluoride Dosage Schedule

Age of Child	Water Fluoride Concentration (parts per million)		
	0.0	0.3-0.6	0.7
0 to 3 months	0	0	0
3 months to 5 years	0.25 mg fluoride	0	0
6 to 10 years	0.5 mg (0.25 mg in total)	0.25 mg	0
11 to 16 years	1.0 mg	0.5 mg	0

Fluoride Product Storage

- All fluoride products should be kept in childproof storage areas

Fluorosis

- Fluoridated Water
- Swallowed Toothpaste
- PolyViFluor via Pediatrician
- Ambient Fluorides
 - Mechanically Deboned Meat
 - Tea
 - Reconstituted Formula/Drinks

Fluorosis



Antifluoridationists

- Referendum
- Cancer
- Sterility
- Communist Plot
- Individual Powerlessness

Pit and Fissure Caries



Dental Sealants

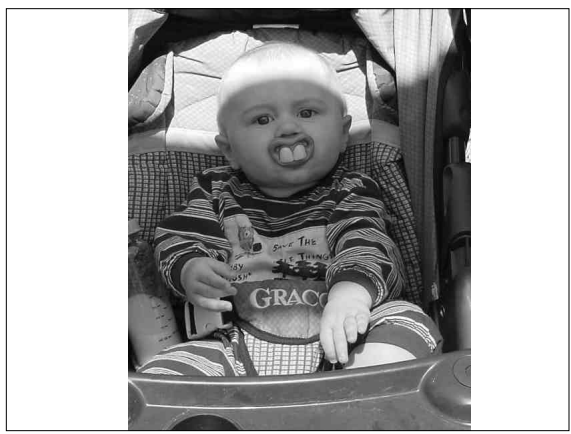
- Painless procedure
- Preventive
- Seals deep, narrow grooves

Dental Sealants



Dental Sealants





Pacifier Use and Safety

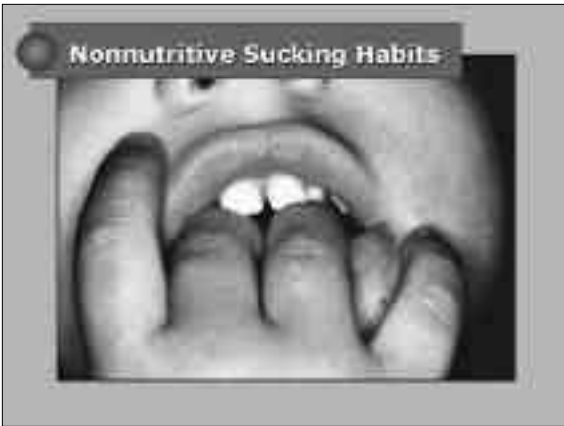
- Use only sturdy, one-piece, non-toxic, flexible pacifier
- Never attach around child's neck
- Discourage use of sweeteners
- Replace the pacifier when worn

Pacifier Use



Nonnutritive Sucking Habits

- Normal neonatal development
- Rooting reflex
- Sucking reflex







Changes in dentition...



due to nonnutritive sucking habits

Nonnutritive Sucking Habits



Changes in dentition...



due to 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

Nonnutritive Habit Intervention

- Habit normally ceases age 4 to 6 years
- Success depends on child's readiness

Antimicrobials

- Chlorhexidine (0-12% Rinse)
- Chlorhexidine Varnish
 - Not USA
- Vaccines (Cell Wall X Rx)
 - ABs via Saliva
- Transgenic Plants for IGA

Sucrose Substitutes

- Xylitol
 - Non-acidogenic
 - May Support Remin
 - Mutans Inhibition

Food Additives

- Enhanced Remineralization
 - Buffering
 - Lactoperoxidase, Lactoferrin
- Fill Micropores in Enamel
 - Amorphous CaPo₄

Future Preventive Efforts

- Chimeric Molecules
- Food Additives Mimic Salivary Chem.
- Biofilm Inhibitors Block Attachment
- Selective Niche Infection:
Nonpathogen
- Genetic Engineering
 - Patients? Microorganisms?

HP/DP and Managed Care

- Directed Utilization
 - Most Services to High Need
- Prevention = Less Treatment
- Less Treatment = Decreased Overhead
- Decreased Overhead = Increased Income

HP/DP Overview

- Fluoride + Sealants= 85% Caries Reduction
- Dietary Control
- Antimicrobials
- Food Additives
