Oral Health Care for the Special Needs Patient

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US dental health care system's capacity to treat children with SHCN.

• **Provider Base**
  - 57 dental schools, 61 advanced education in general dentistry programs,
  - 174 general practice residencies,
  - 87 children's hospital dental clinics in the United States.

• **CSHCN** was determined to be 10,221,436
• **CSHCN** patients per provider, if distributed equally, was 1,792.

*Kerins et al., Pediatr Dent. 2011 Mar-Apr;33(2):107-12*
Dental and Oral Development

• 6-12 months
Dental and Oral Development

- 12-24 months

- 24-36 months
The American Academy of Pediatric Dentistry recommends the first visit to be at what age?

A. One
B. Two
C. Three
D. Five
E. Six
First Dental Visit - Anticipatory Guidance

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

- Age three is too late for this 25 month old.
Untreated Dental Caries (Cavities)

- Case of GG, 8 year old healthy female
  - Admission to ER for dehydration, fever, pain and antibiotic therapy
  - Extraction of both primary and permanent teeth
Dental Caries: Etiology

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

- **FLORA**
  - Strep. Mutans (Substrate)
  - Oral Hygiene
  - Fluoride in Plaque

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

Flow Rate DH

Saliva

Caries

Flow Rate DH

Saliva
Dental Caries: Etiology

Demineralization $\iff$ Remineralization

- Frequent carbohydrate intake
- Frequent exposure to acids
- Decreased salivary flow

- Fluorides
- Plaque removal
- Balanced diet
- Limit frequency of carb intake
Early Childhood Caries
Barriers to adequate dental care

- Disability of individual
- Society's unresponsiveness
- Transportation
- Physical barriers - architectural
- Lack of motivation/fear
- Financial limitations
- Parental/ institutional neglect
Mutans Streptococcus Transmission
Dental characteristics patients with SHCN

- Greater risk of dental disease
- Difficult to provide dental services
- Difficult to maintain hygiene
- Greater prevalence of periodontal disease
- Greater risk of abuse/neglect/trauma
Caries Risk

• Increased risk of decay
  – Prolonged feeding
  – Special diet
  – Use of food rewards
  – Oral motor and gross motor dysfunction
  – inadequate fluoride
  – preoccupation with the disability by parents
Medications

- Check sucrose content
- Evaluate medications taken for chronic conditions

<table>
<thead>
<tr>
<th>Medication</th>
<th>gram/5ml</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actifed, syrup</td>
<td>3.50</td>
<td>70</td>
</tr>
<tr>
<td>Dilantin</td>
<td>1.04</td>
<td>21</td>
</tr>
<tr>
<td>Dimetapp, elixir</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Phenobarbital</td>
<td>0.64</td>
<td>13</td>
</tr>
<tr>
<td>Sudafed, syrup</td>
<td>3.50</td>
<td>70</td>
</tr>
<tr>
<td>V-Cillin K, Soln</td>
<td>3.00</td>
<td>60</td>
</tr>
</tbody>
</table>
Assessment of the patient with disability

- Goal of the exam
  - Treatment planning
  - Behavior assessment

- History
  - Medical history

- Past Dental History
  - Past Treatment
  - Oral hygiene status
Tooth brushing should begin...

...with the eruption of the first tooth
Supervised Tooth Brushing

• Only a small pea-sized amount of toothpaste is needed
Amount of Fluoridated Toothpaste for Preschoolers - Mod/high risk

“Smear” – under 2 yrs.

“Pea-sized” – 2-5 yrs.
Fluoride Varnish

• Developed in the late 1960s and early 1970s
  – By 1980s were widely used in European countries
  – In US, FDA approved as cavity liners and for treatment of hypersensitivity

• Effectiveness
  – Helfenstein and Steiner, 1994
  – Strohmenger and Brambilla, 2001
  – Petersson et al, 2004
Sleep-time Habits
## Cariogenicity of Snacks

<table>
<thead>
<tr>
<th>Snack Item</th>
<th>Cariogenicity Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peanut butter, nuts, vegetables</td>
<td>0</td>
</tr>
<tr>
<td>Cheese</td>
<td>1</td>
</tr>
<tr>
<td>Milk</td>
<td>2</td>
</tr>
<tr>
<td>Fruit juice, fresh fruit (excluding bananas)</td>
<td>3</td>
</tr>
<tr>
<td>Tortillas, pasta, rice, beans</td>
<td>4</td>
</tr>
<tr>
<td>Cereal</td>
<td>5</td>
</tr>
<tr>
<td>Crackers</td>
<td>6</td>
</tr>
<tr>
<td>Bread</td>
<td>7</td>
</tr>
<tr>
<td>Soda, Kool-Aid</td>
<td>8</td>
</tr>
<tr>
<td>Apple sauce, yogurt, ice cream, pudding, gelatin desserts</td>
<td>9</td>
</tr>
<tr>
<td>Cookies, donuts, chips</td>
<td>10</td>
</tr>
<tr>
<td>Bananas, raisins, jam</td>
<td>11</td>
</tr>
<tr>
<td>Candy</td>
<td>12</td>
</tr>
</tbody>
</table>

Table modified from Feigal, 1982
Supernumerary - rudimentary
AI- Hypocalcified type III
Dental Calculus
Multiple supernumerary teeth in Cleidocranial dysplasia
Dental Treatment

• Special considerations beyond dental decay
  – Bruxism
  – Orthodontics
  – Prosthetics
  – Periodontology
Ectodermal dysplasia

- Congenitally missing teeth
Dentinogenesis Imperfecta
Caries and Abscesses in the O.R.- Prader Willi
Drug induced gingival hyperplasia

- Clinical features
  - Starts as painless enlargement
  - May progress to cover crowns of teeth
Down Syndrome

- Prevalence of periodontal disease 60-100% in those under age 30
- Low risk for caries
- Etiology
Self injurious behavior

- Lesch- Nyhan
- Autism

Treatment options:
- smoothing teeth
- bonding materials
- occlusal guards
- extraction of teeth
Lesch- Nyhan Syndrome

• Case of JB. 2 year old
• Biting of lips and cheeks
  – Smooth canine teeth
  – Placed “filling “ material on posterior teeth
• Re-evaluated
  – Multiple teeth extraction
Dental Trauma

I. Etiology
II. Soft Tissue
III. Hard Tissue
IV. Avulsion
Etiology of Dental Trauma

- Falls in infancy
- Contact sports
- Bicycle/roller-blading
- Skateboarding
- Horseback riding
- MVA
- Assault
- Child/domestic abuse
- Epilepsy
- Drug/alcohol
Dental Treatment

• Spectrum of treatment options
  – Behavior management
  – Nitrous oxide
  – Sedation
  – General anesthesia

• Strive for reasonable prognosis
  – Eliminate diseases/ maintain oral health
  – Less is Better!
Dental Home

- Provide anticipatory guidance
- Long term continuity of care