EARLY CHILDHOOD CARIES

- **Early Childhood Caries**: one or more decayed, missing or filled tooth surfaces of primary tooth surfaces un until 6 years of age (71 months). Previously known as **(nursing bottle caries, baby bottle caries, anterior deciduous decay)** but changed because poor feeding practices are not sufficient to cause carious lesion. ECC is a **preventable** disease.
- There are very few large epidemiological studies due to:
    - Limitations in accessing this group
    - Inability of some dentists to examine
- Health Impact on ECC: Pain, chewing dysfunction, acute or chronic infection, malnutrition, failure to thrive, malocclusion, speech difficulties, absence from pre-school, reduced ability to learn and concentrate, reduced self-esteem, etc.…

<table>
<tr><th colspan="4">ECC Etiology</th></tr>
<tr><th>Social Factors (lifestyle)</th><th colspan="3">Dietary Factors</th></tr>
<tr><td>• Ethnicity
• Family status
• Maternal age
• Child order
• Annual income
• Mother education</td><td colspan="3">• Prolonged night-time bottle feeding
• On-demand breast feeding after 1-yr age
• Frequent snacking
• Frequent daytime sipping through bottle
• Nocturnal Bottle Feeding
When child laid to rest with bottle or breast, nipple rests against palate and tongue covers lower incisions. As child becomes sleepy, saliva flow and swallow reflex reduced. ➔ Sugar remains stagnant around neck of teeth because of constant CHO supply and reduced saliva defenses.</td></tr>
<tr><th>Bacteria</th><th>Substrate</th><th>Host</th><th>Time</th></tr>
<tr><td>• Acquisition of Mutans Streptococci
• Transmission: vertical (maternal) or horizontal (peers)
• Age of acquisition (colornization):
○ <2yrs – 89% develop caries
○ >2yrs – 25% develop caries
• Associated with maternal factors
○ High MS levels
○ Active Caries
○ Poor IF
○ Low socioeconomic
○ Low education</td><td>Fermentable CHO</td><td>• Saliva
• Tooth maturation & Developmental Defects</td><td>• Early colonization is most important risk factor for ECC
• Eruption of primary molars required for colonization
• Some studies found MS in pre-dentate infants on:
○ Tongue furrows
○ Oral nodules</td></tr>
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CLINICAL FEATURES

1- Seen in infants and preschool children

2- Intra-oral decay pattern: (Due to: Chronology of teeth eruption, Duration of deleterious habit, muscular pattern of infant sucking)

   a. **Maxillary** – incisors, canines & first molar

   b. **Mandibular** – canines & first molar (mandibular incisors **not** affected)

3- Demineralization is first seen at next of maxillary incisors then progresses to grind the neck of tooth. In advanced cases, only root stump is left.

CARIES RISK ASSESSMENT

- Lift the lip technique for wide public diagnosis
- First dental visit should be at **6 months** combined with **immunization dates**.
- Most important risk factor for future caries development is current caries experience. **2 or more** active carious lesions ➔ child at high risk.
- **Biomarkers in saliva for ECC (early diagnosis)**: Mutans Streptococci, C. albicans, Prevotella spp., and salivary proteins (IgA, IgG, histatin peptides)

MANAGEMENT OF EARLY CHILDHOOD CARIES – DEPENDS ON SEVERITY

- Identify cause and discontinue habit.
- Provide dietary advice
- Parental instructions of oral hygiene for child
- Professional fluoride applications
- Temporization

Management of non-cavitated lesions	Treatment of ECC under GA	Treatment of ECC by general dentist
• Application of **casein phosphor peptide (CPP)** stabilized calcium and phosphate ➔ preserve them as **amorphous calcium phosphate (ACP)**. • CPP-ACP complexes prevent demineralization and improve remineralization and enhance fluoride activity.	• Aim to provide definitive, long term treatment to avoid repeat GA • Follow up protocol for preventive measures	Dentist need to be competent to preform: • Pulp therapy • Restorative options • Extractions

PREVENTION

- Begins in pre-natal period with information on diet and oral hygiene for mother and unborn child.
    - Mother should have her own dental disease treated. Use antibacterial mouth rinse if high MS
    - Provide information on transmission of MS (spoon sharing, dummy licking)
    - No bottle containing sugar of any kind at bedtime
    - Breast feeding “at will” should be avoided after eruption of first tooth
    - Child should be encouraged to drink from a cup as they approach their first birthday
    - Avoid sugary snacking.
- At eruption of first tooth
    - Wipe/brush teeth and gums
    - Pea size amount of F-toothpaste (**400-500 ppmF**)

EDUCATIONAL INTERVENTION STRATEGIES

1. Dentist patient approach
2. Dentist community approach
3. Media
4. Training of health workers.