Early childhood Caries

* **Cariogenic microorganisms:**
* Children who had acquired staphylococus mutans (MS) before 2 years of age showed greater caries experience in both primary and permanent dentitions compared to children who were colonized at later stage.
* clinical studies showed that children whose mothers have high concentration of salivary MS acquire the bacteria at **younger age** and **higher numbers** compared to children of mothers who have low MS levels
* **Cariogenic diet:**
* The small size of sugar molecules can be easily metabolized by plaque bacteria.
* Between-meal snacking and the frequency of eating and drinking fermentable carbohydrates are related to dental caries incidence.
* Dental caries can be actively increased by consumption of sugar if it was in a form easily retained on the tooth surface. E.g. Sticky, sugary food.
* ***Infant feeding:***

Animal studies showed that cow's milk **doesn't produce caries**. *Its use however is* ***not recommended*** *before the first year of life.*

Infant formulas for infant feeding, even without sucrose in their formulation**, are cariogenic.**

* **Breastfeeding and ECC:**

Research shows that breastfeeding has not been **epidemiologically** associated with caries in the absence of other factors such as poor oral hygiene or a carbohydrate diet.

* Cariogenicity of human milk:.

*Human milk is slightly more cariogenic than cow's milk*

The evidence suggests that cow's milk and human milk are *less cariogenic than sucrose*, with cow's milk being the least cariogenic.

* **Bottle feeding and ECC:**

During bottle feeding, formula collects on the upper anterior teeth

Bottle feeding at night will lead to prolonged and frequent contact of teeth with cariogenic substance, which might predispose the child to caries progression

* **Associated factors for ECC:**

# saliva:

A reduction in the salivary flow may predispose the child to caries.

The viscosity of saliva is related to the rate of dental decay.

# socioeconomic status:

- ECC is more commonly found in children who live in poor economic conditions, and whose parents have low educational level

-Malnutrition may cause enamel hypoplasia. 🡪more prone to caries

- Poor oral hygiene with low exposure to fluoride

- Poor diet with a greater preference for sugary food.

- Emotional stress.

* **Pattern of ECC:**

Carious involvement of the maxillary anterior teeth, the maxillary and mandibular first primary molars’.

The mandibular incisors are usually unaffected except in severe cases( protected by the tongue and saliva pools around them)

* **Presentation:**

Starts with harmless looking white opaque spots on labial surface of the upper incisors🡪 brown spots🡪cavitation.

* **Consequences of ECC:**

1. ECC is associated with reduced growth and reduced weight gain due to insufficient food consumption
2. Pain
3. Disturbed sleep
4. Infections, e.g. abscess, cellulitis
5. Emergency visits and possible hospitalizations
6. Loss of school days with restricted activities
7. Reduced ability to learn and concentrate
8. Need for extractions in a young child which would require treatment under GA
9. Premature loss of primary molars leading to malocclusion
10. Poor oral health and dental disease often continue into adulthood
11. Higher risk of new carious lesions in other primary teeth and the succeeding permanent dentition

* **Treatment:**

Immediate intervention is necessary to prevent further dental destruction*,*

1- fluoride varnish

The reversal of the caries process depends on an intact surface layer of the lesion.

The use of the dental explorer to routinely probe enamel is no longer recommended.

***Fluoride varnish should be applied at least twice yearly in all children***

2- initial treatment of all caries lesions to stop ar at least slow the progression of the disease.

**Interim Therapeutic Restorations (ITR) techniques**, using materials such as glass ionomer. Glass ionomers release fluoride, so they act as both preventive and therapeutic approaches.

3- in advanced cases, aggressive therapy is needed, usually under GA. This involves the placement of stainless steel crowns and extractions.

Prevention should be a priority