

# Dental Caries in the Child and Adolescent

- Dental caries continues to be a major problem in dentistry and should receive significant attention in everyday practice, not only from the standpoint of restorative procedures but also in terms of preventive measures designed to reduce the problem.



- Caries is on the decline in the industrial countries but it is on the increase in the developing countries such as Saudi Arabia due to increased sugar consumption.



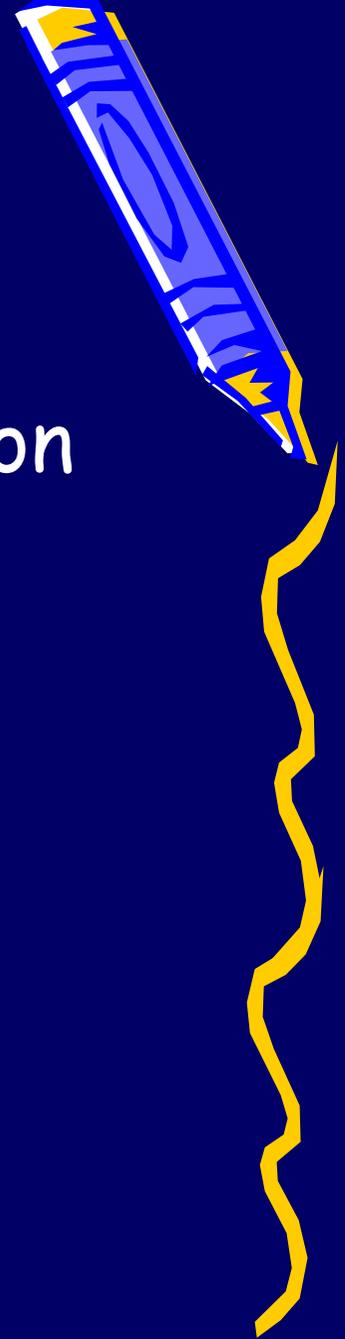
# Sequelae of Dental Caries

- Bacteria ferment sugar to produce acid.
- The acid dissolves tooth surface → tooth decay or dental caries which affects the enamel → dentine → pulp → pulpitis → periapical infection → dental abscess.

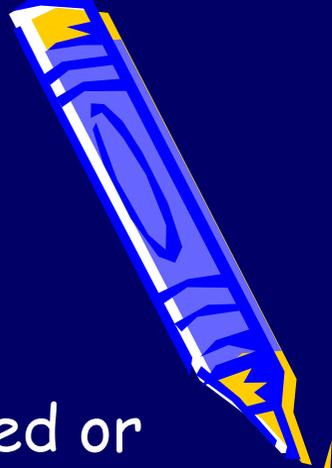


# Caries in the primary dentition

- Sequence of caries in primary dentition is as follows:
  - First to be attacked are the mandibular molars followed by maxillary molars, followed by maxillary anterior teeth.



- Only rarely are mandibular anterior teeth affected or the lingual/buccal surfaces of the primary teeth generally, except in cases of rampant caries.
- First primary molars in both the mandibular and maxillary arches are less susceptible to caries than the second primary molars, though the first primary molars erupt earlier than the second.

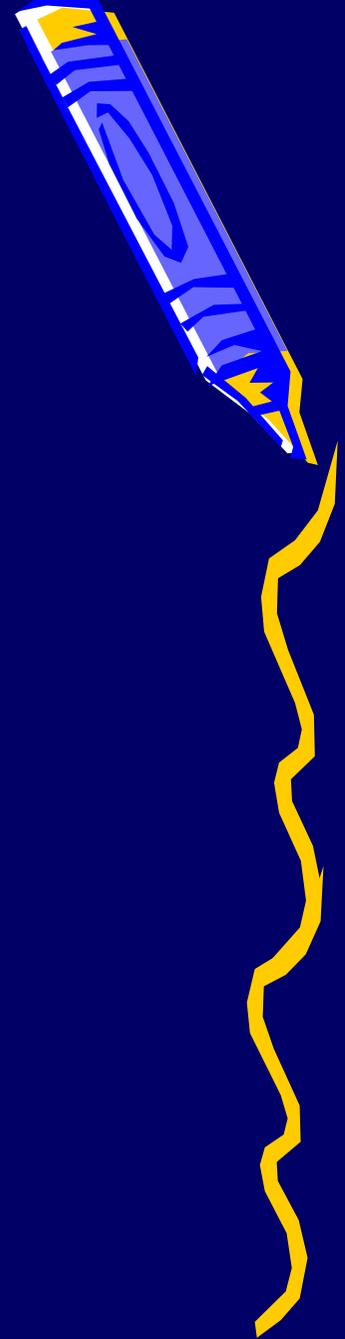


- Difference is thought to be due to differences in morphology of occlusal surfaces as the pits and fissures in second primary molars are deeper, less completely coalesced.
- Proximal caries progress more rapidly than occlusal caries and cause higher percentage of pulp exposure.
- Therefore, regular bitewing radiographs are essential for children once there are no spaces between the teeth or after proximal contact is established.



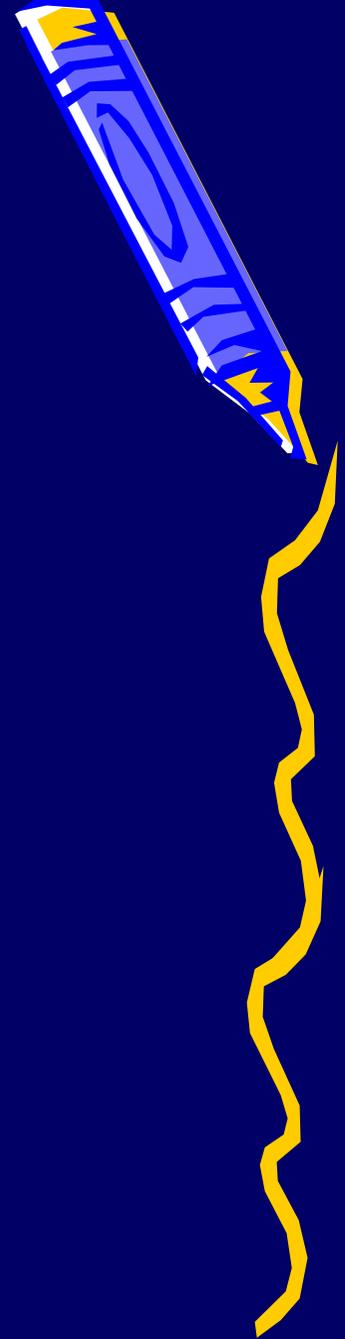
# Caries in the primary dentition may be:

- Rampant caries
- Nursing caries
- Nursing bottle syndrome
- Baby bottle decay
- Early childhood caries (ECC)



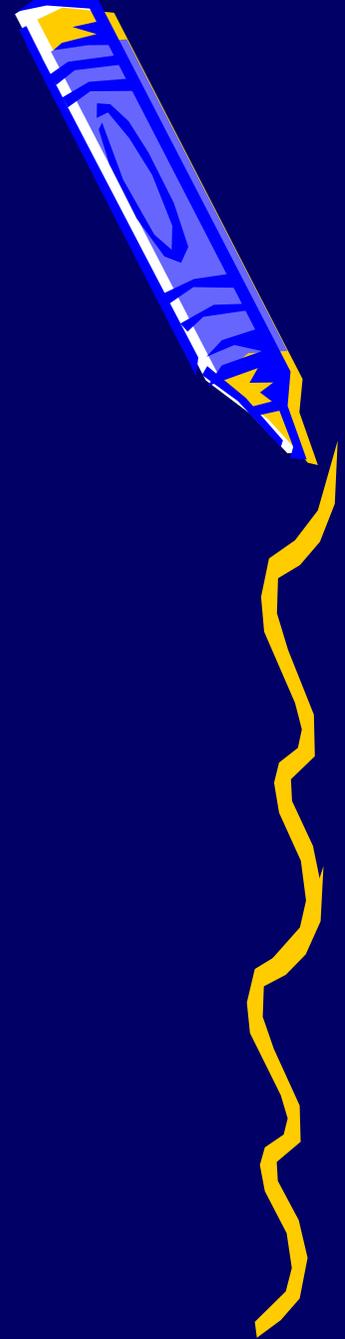
# Treatment:

- Topical application of F to early decalcified areas e.g. cervical, upper incisors.
- Restorations:
  - Anterior teeth:
    - Glass ionomer cements
    - Acid etch technique, sandwich techniques composite restorations

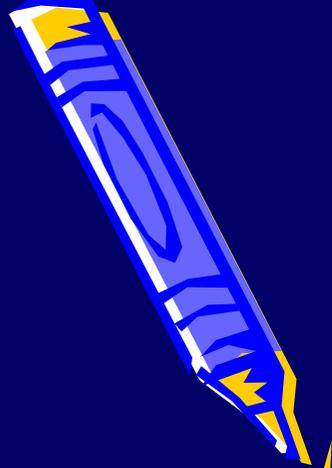


- Posterior teeth:

- Preventive resin restorations
- Glass ionomer
- Posterior composites
- Amalgam
- Pulpotomies/pulpectomies
- SS crowns



Space maintainer in cases of  
extraction and early loss of  
primary teeth





- Fissures sealants on newly erupted 1<sup>st</sup> permanent molars i.e. as they erupt or preventive resin in very early caries.
- Also treat with topical fluorides:
  - Gel
  - Liquid
  - Neutral (NaF)
  - Acidulated phosphate fluoride (APF)
  - Advise F in toothpaste (MFP, NaF, S<sub>n</sub>F<sub>2</sub>)



# Caries in mixed dentition

- Once the first permanent molars erupt, one should expect frequent occurrence of caries in the occlusal pits and fissures.
- Therefore, these teeth will need to be:
  - a) Restored
  - b) Or sealed (with fissure sealants) to prevent extension caries from developing



- A child with 3 or more primary molars carious at age 5 is likely to have caries in first permanent molars at age 7.





- The maxillary permanent incisors are not highly susceptible to caries attack except in children with rampant caries (R.C.).
- R.C. caused by:
  - Poor oral hygiene
  - High carbohydrate diet
  - Mouth breathing or
  - Salivary deficiency

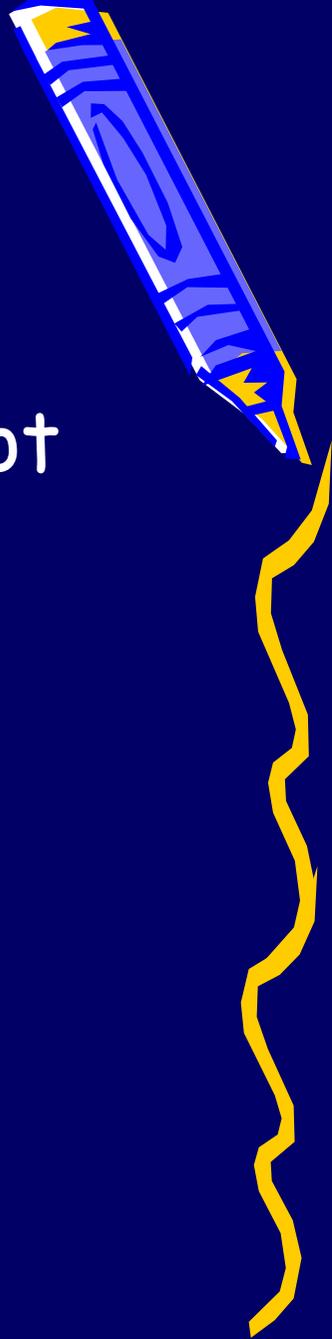




- Sometimes, the 52 and 62 may erupt with defect in the lingual surface i.e. invagination.
- Caries in this defect can progress quickly to the pulp.
- Recommended treatment:
  - Sealant or
  - Cavity prep. and restoration if the probe catches



- Caries in lower incisors is unusual except in rampant caries.



# Caries in young permanent dentition

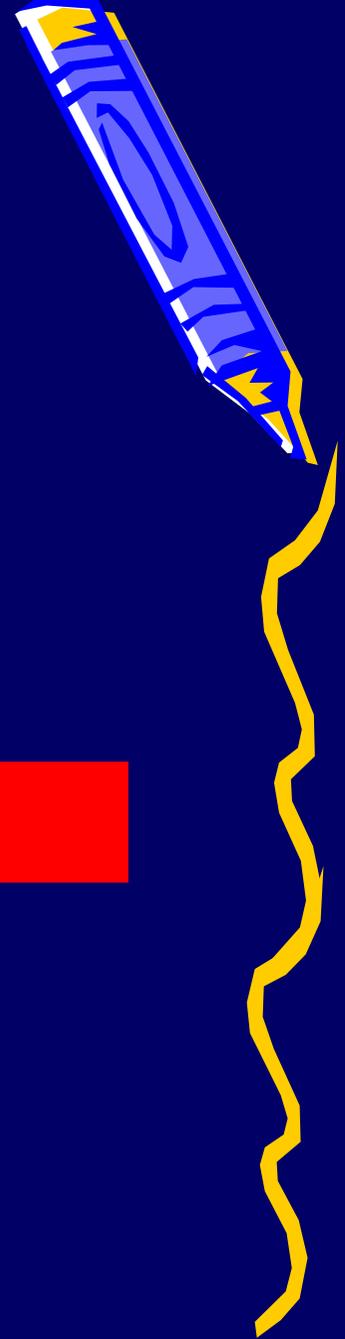
- Caries rate continues to rise with the eruption of the second permanent molars and the premolars.
- The mandibular second permanent molars are more susceptible to caries than the maxillary second permanent molars.
- These teeth need careful attention.



# Recommended treatment:

- Topical application of F
- Fissure sealant

To prevent rapid penetration of caries



# Secondary factors in dental caries

- Caries is influenced by:
  - Anatomy of the teeth in early eruption
  - Crowding or irregular teeth (makes cleaning difficult)



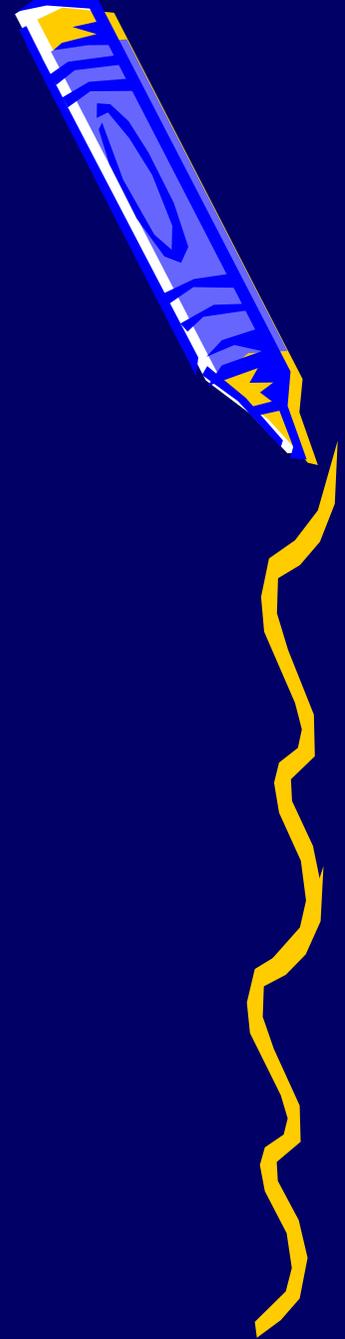
- Presence of dental appliances.

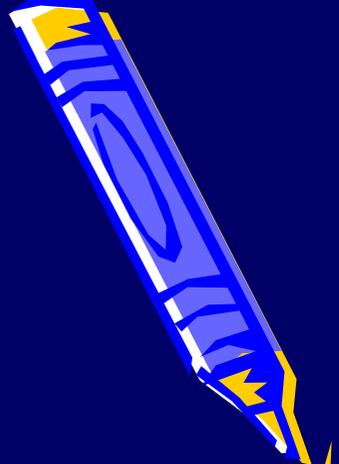
E.g. partial denture

space maintainer

orthodontic appliances

All these make good oral hygiene difficult.





- Hereditary factors.

- Little scientific evidence to support this theory.  
Children acquire certain habits from their parents.

e.g. dietary habits  
oral hygiene habits  
oral microflora

These make caries an environmental problem not hereditary



- Although tooth morphology and enamel defects tend to follow a familial pattern, heredity is thought to play only an indirect role.



# Rampant Dental Caries (R.C.)

- No complete agreement on the definition but rampant caries was defined by Massler (1945) when reporting on teenage caries as “a suddenly appearing, widespread, rapidly borrowing type of caries, resulting in early involvement of the pulp and affecting those teeth usually regarded as immune to ordinary decay.”





- No evidence mechanism of decay process is different in rampant caries or that it occurs only in teeth that are malformed or inferior in composition.
- Need to differentiate between:
  - Rampant caries of sudden onset and
  - Oral condition that represent years of neglect and inadequate dental care.





- Some believe the term rampant caries should be applied to a caries rate of 10 or more new lesions per year.
- Davies (1954) believes the distinguishing characteristics of rampant caries are the involvement of the proximal surfaces of the lower anterior teeth and development of cervical type of caries.

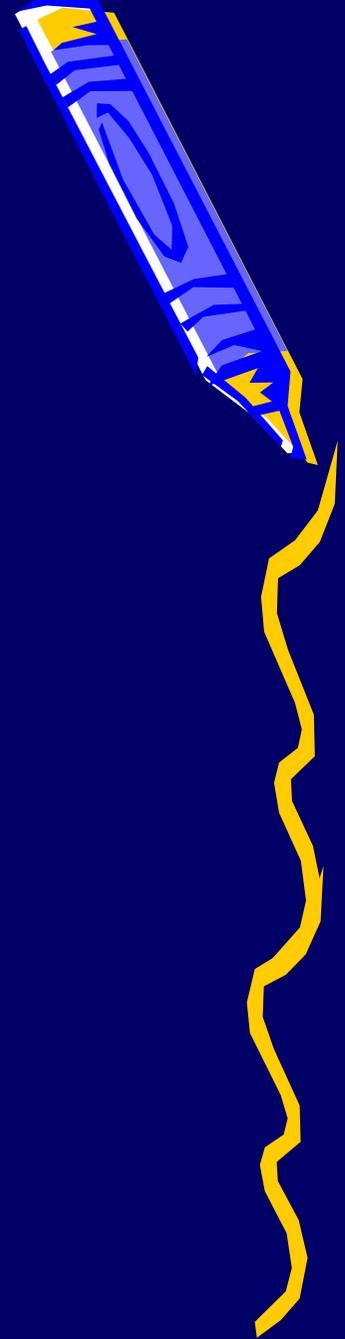


- Sucrose is thought to be more likely to cause rampant caries than glucose, fructose, sorbitol, hydrogenated starch and starch.



# Other causative factors of rampant caries observed in children and adults with R.C.

- Emotional disturbance
- Repressed emotions and fears
- Dissatisfaction with achievement
- Rebellion against a home situation
- A feeling of inferiority
- A traumatic school of experience
- Continuous general tension and anxiety



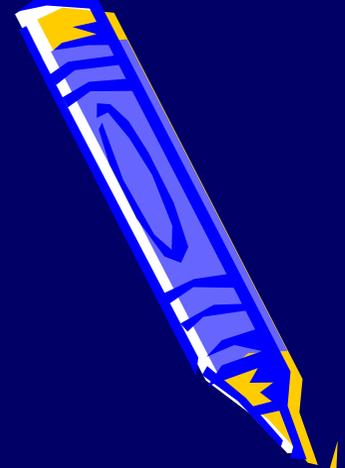


- An emotional disturbance may initiate an unusual craving for sweets or the habit of snacking.
  - Decreased salivary flow
  - Decreased caries resistance caused by impaired remineralization



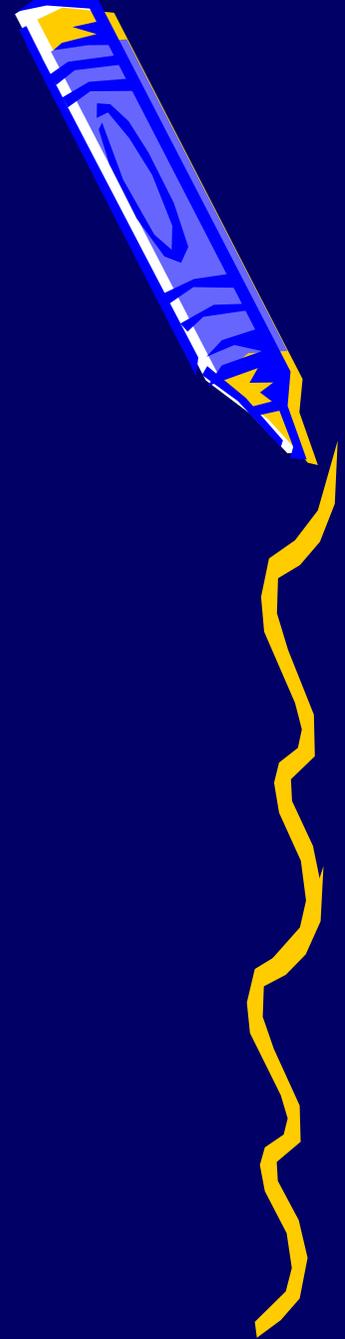
# Nursing Caries (N.C.), BBTD, ECC

- In recent years, it has been reported that:
  - Prolonged bottle feeding beyond the usual time when the child is weaned from the bottle and introduced to solid food, may result in early and rampant caries.
  - This is known as Nursing Caries or Nursing Bottle Syndrome or more recently as Early Childhood Caries (ECC).



Typical appearance of the teeth in a 2, 3 or 4 year old follows a definite pattern:

- Early carious involvement of maxillary anterior teeth as cervical caries labial and/or lingual.
- The maxillary and mandibular primary molars and the mandibular canines. Mandibular incisors are usually unaffected.



## Other factors of etiology:

- Nursing bottle with milk or sugar containing beverage left in child's mouth as he falls asleep.
- Salivary flow is decreased during sleep.
- Clearance of liquid (milk & sugar) in the oral cavity is slowed/reduced.
- Also at will breastfeeding habit may cause N.C. or E.C.C.



# Recommended regimen:

- From birth, infant should be held while feeding.
- The child who falls asleep while feeding should be burped and then placed in bed.
- Parent should start brushing child's teeth as soon as they erupt.
- Discontinue nursing as soon as the child can drink from a cup *i.e.* at about age 12 months.
- Avoid prolonged breastfeeding.
- Avoid prolonged bottle feeding with milk in the bottle *i.e.* Beyond 12 months.



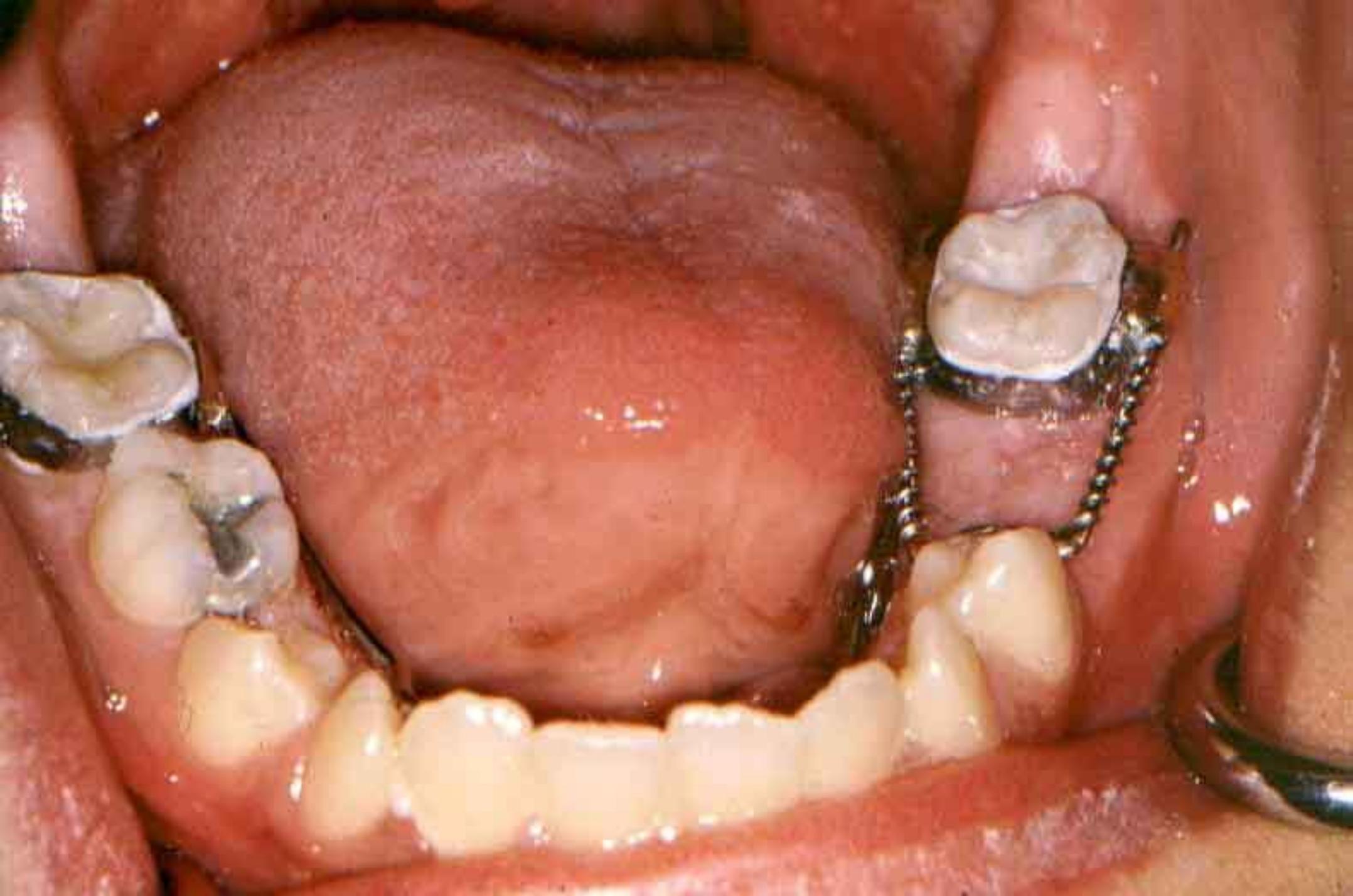


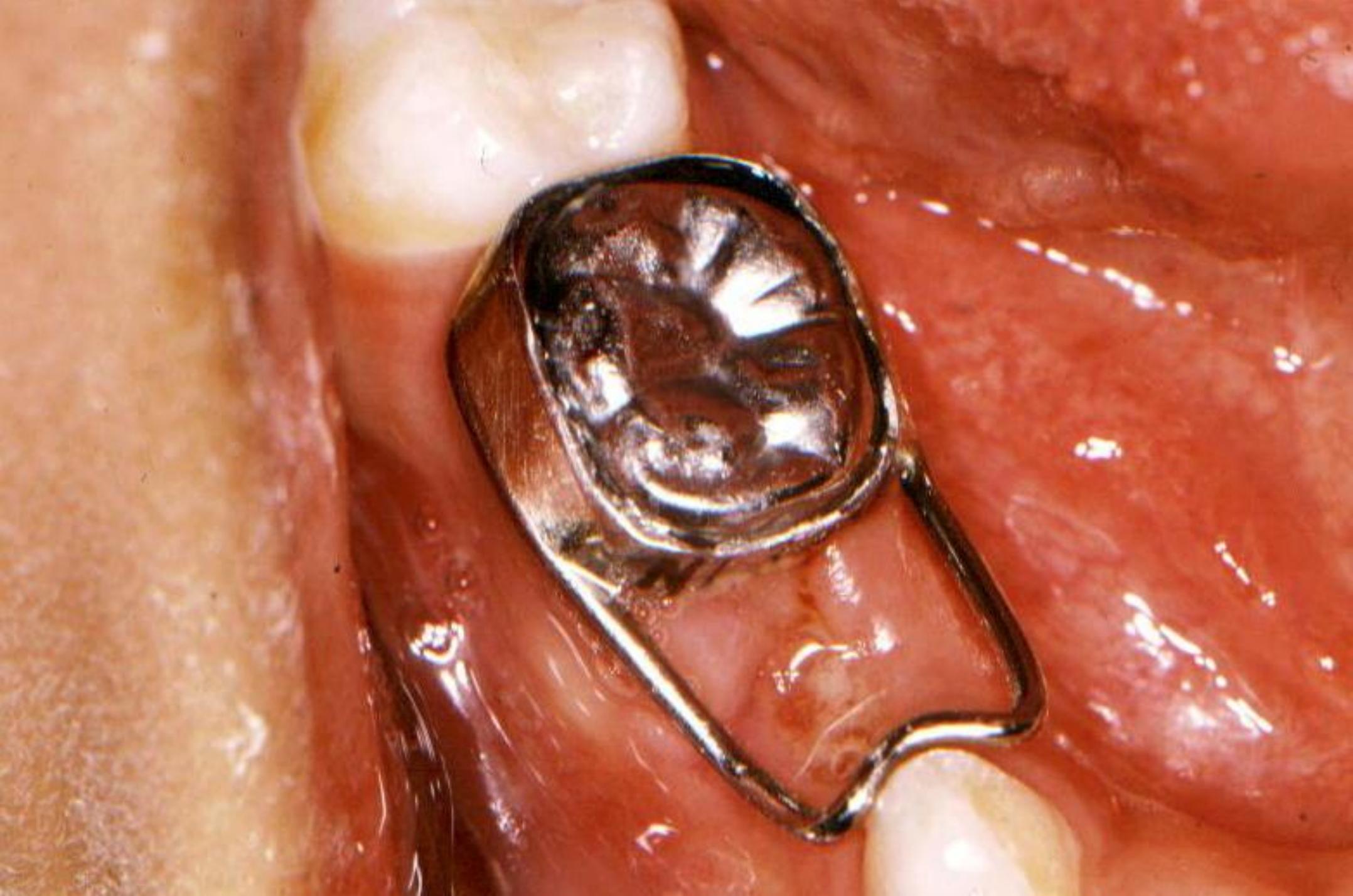
Also:

- Early counseling of parents will prevent NC or ECC
- Suggest children have first dental examination between 6 and 12 months of age
- Need to educate public about NC (Ripa 1988) or ECC.  
eg. By direct contact with pregnant women.  
parents and other care givers in population subgroups that have high prevalence of NC or ECC.



























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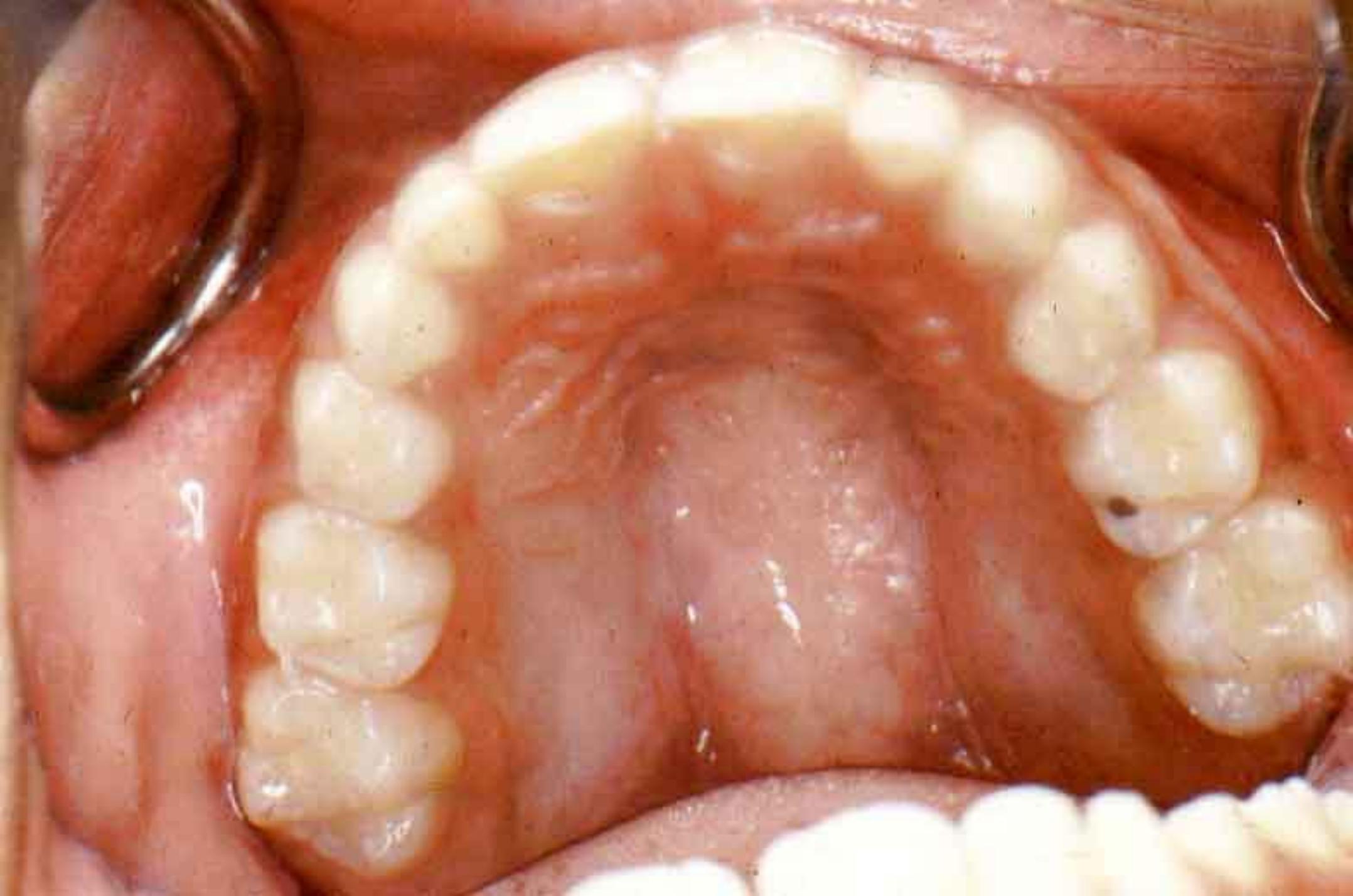














# MOTIVATION OF A CHILD

to

- *Good oral hygiene habits*
- *Correct dietary habits and*
- *Seek regular dental care*



**A child motivated  
from childhood to  
clean his/her teeth  
regularly *DEVELOPS*  
the habit for life.**

# **APF Recommended Technique**

- 1. Clean and polish teeth.**
- 2. Dry teeth with air spray.**
- 3. Apply APF gel.**
- 4. Leave for 4 minutes.**
- 5. Do not allow patient to rinse the mouth for 30 minutes.**

**Apply Gel as Quadrant Dentistry or  
In Upper and Lower Trays**

