PREVENTIVE DENTAL MATERIALS

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Preventive Dental Materials

- Tooth Paste
- Mouth Washes
- Fluorides
- Sealants
- Mouth guards

Tooth Paste

Components/composition

- ***Colloidal binding agents*** - Na Alginate, methy cellulose

  Function: prevent separation of the components in the tube during storage.
- ***Humectants*** (moistens or dilutes) - glycerin

  Function: reduces water loss by evaporation.
- ***Preservatives*** - used to inhibit bacterial growth.
- ***Flavoring agents***

Tooth Paste

5. ***Abrasives*** - Ca carbonate, hydrated silica
   Ca pyrophosphate, Na bicarbonate
   Function: removal of plaque, stains, calculus.
6. ***Detergents*** - Na laurylsulphate
   Function: used to reduce surface tension and enhance the removal of debris from the tooth surface.
7. ***Therapeutic agents*** - Stannous Fl
   Function: increased uptake of Fl ion leading to increased resistance of Fluorapatite to acid demin

Mouth Washes

- Active agent - anti-caries, antimicrobial
- Solution - water, alcohol - preservative
- Surfactant - Na laurylsulphate

ph - 3.4 - 6.6

Ethanol 0-27%

- carcinogenic effects
- staining

Preventive Materials

- Fluoride gels, foam and varnish:
- Used for remineralisation of decalcified enamel and incipient caries.
- Sealants:
- Indicated for preventing and arresting incipient lesions.
- Available as clear or white, filled or unfilled, containing Fluoride or not.

Fluorides

Gels, Foams, Rinses, Varnishes

APF gel - 2% NaF, 0.34%HF, 0.98% Phos acid

- 4 min application is optimal
- No eating or drinking for 1hr post application
- Applied twice a year

Fluoride

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

Fluoride Supplements

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

ADA-Recommended Supplemental Fluoride Dosage Schedule

Age of Child	Water Fluoride Concentration (parts per million)		
	Less than 0.3	Between 0.3 - 0.6	Greater than 0.6
Birth to 6 Months	0	0	0
6 months to 3 years	0.25 mg liquid drops	0	0
3 to 6 years	0. 5 mg drops or tablet	0.25 mg	0
6 to 16 years	1.00 mg	0.5 mg	0

Question

- A 5 yr old pt lives in an area with .75 ppm flouride. What is the recommended Fl supplement in this case? NDB-87

Fluoride Supplements

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

Topical Fluoride

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

Fluoride Varnishes

- 5% NaF
- Long History in Europe
- Excellent Clinical Effectiveness
- 0.1% Difluorosilane
  - Durafluor, Omnifluor, etc.
- Easy to Use: Paint THIN Layer on Dry Teeth
- 24 Hour Slight Yellowing

Fluorosis

Question

- A child spends his first seven years in a community in a temperate zone, water supply contains 3 ppm flouride, mottling will develop in which teeth? NDB'87

NDB Excerpts

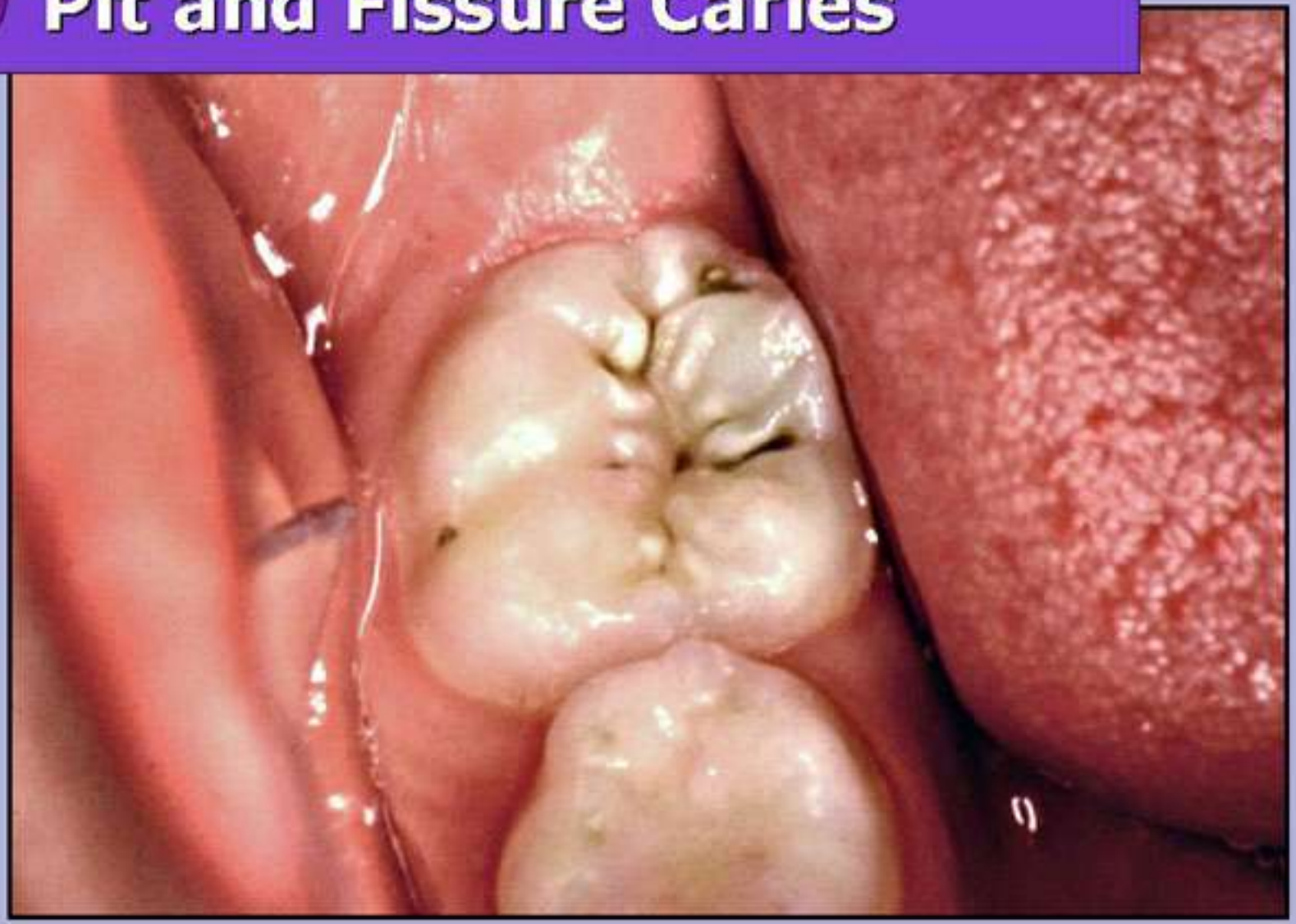
- F inhibits glucosyltransferase. Strep mutans uses this to produce dextrans to attach to teeth.
- Fl prevents smooth surface caries NOT pit and fissure caries….Sealants prevent pit and fissure C.
- Toxic flouride dose =5mg/kg.
- Lethal dose=20mg/kg.
- Antidote-milk and antacids containing calcium.

NDB Excerpts

- Flourides affect the tooth in the following manner- Chemically reacts with hydroxyapatite crystals to replace the hydroxyl ions,
- Only effects the outer layers of enamel…makes the apatite crystals more resistant to acid,…Increases remineralization.
- Total reduction of smooth surface caries by flouride –

  75-90%, (systemic 30%, topical30%, occlusal sealants-30%).

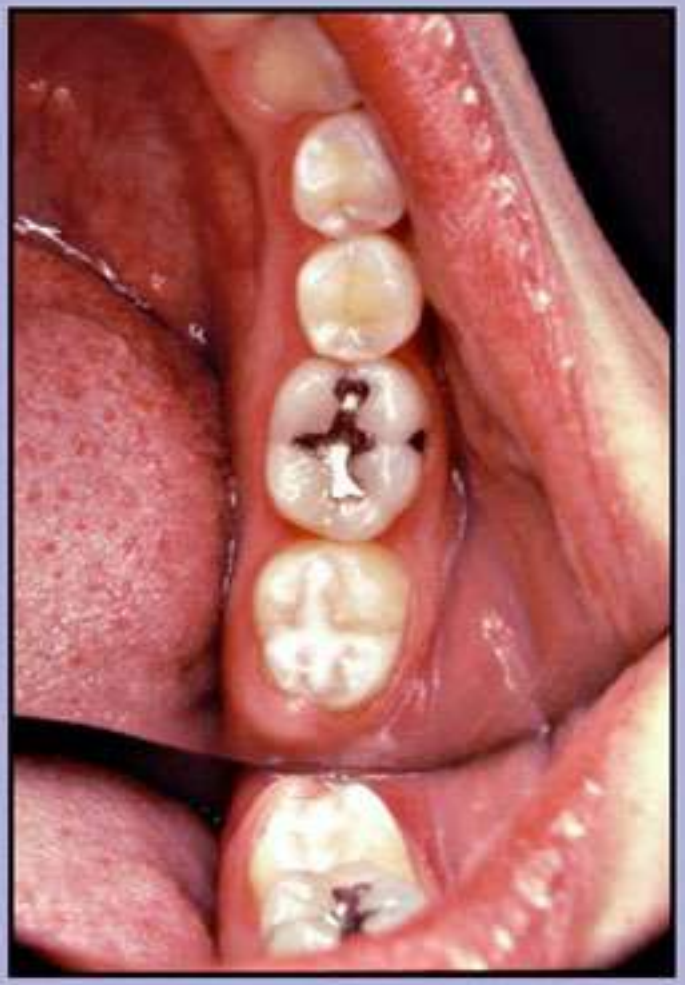
Pit and Fissure Caries



Dental Sealants

- Noninvasive procedure
- Preventive
- Seals deep, narrow grooves

Dental Sealants



Dental Sealants

Glass Ionomer cements

- Fluorosilicate glass powder(base) combined with a water soluble polymer(acid)

  e.g. - Ketac cement
- Resin-modified glass ionomer cements:

  are glass ionomers with a light polymerised resin component.

  e.g.- Vitrebond and Vitremer

Resin-modified glass ionomers

Advantages:

- Increased mechanical properties
- Physiochemically bonds to tooth structure
- Biocompatible, moisture forgiving
- Similar coefficient of thermal expansion as dentin therefore a good dentin replacement material. (sandwich technique)
- Ion lechability - Fluoride release(anticariogenic action)
- Minimal polymerization shrinkage

Mouthguards

- Stock, custom made
- Technique - Place a polyvinyl polyethylene thermoplastic sheet over the model on a vacuform. Trim to fit.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Thank you !

- Recommended reading…
  - “Craig”
  - Dental Decks