

PREVENTIVE DENTAL MATERIALS

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Preventive Dental Materials

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

Tooth Paste

Components/composition

1. **Colloidal binding agents** - Na Alginate, methy cellulose
Function: prevent separation of the components in the tube during storage.
2. **Humectants** (moistens or dilutes) - glycerin
Function: reduces water loss by evaporation.
3. **Preservatives** - used to inhibit bacterial growth.
4. **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

1. Active agent - anti-caries, antimicrobial
2. Solution - water, alcohol - preservative
3. Surfactant - Na laurylsulphate

ph - 3.4 - 6.6
Ethanol 0-27%

- carcinogenic effects
- staining

Preventive Materials

1. Fluoride gels, foam and varnish:
 - Used for remineralisation of decalcified enamel and incipient caries.
2. 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

1. A 5 yr old pt lives in an area with .75 ppm flouride. What is the recommended FI 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

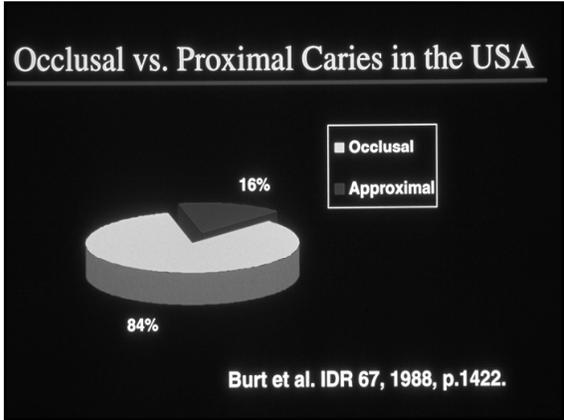
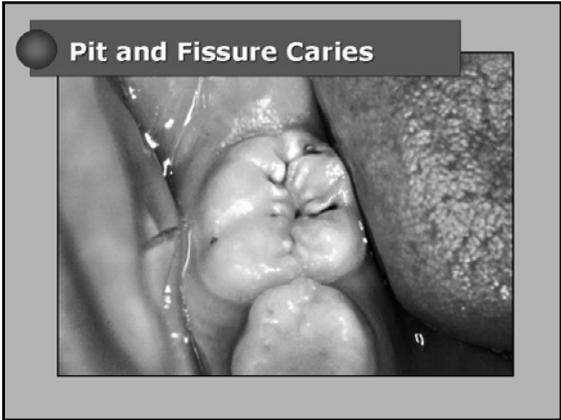
- A child spends his first seven years in a community in a temperate zone, water supply contains 3 ppm flouride, mottling will develop in which teeth? NDB'87

NDB Excerpts

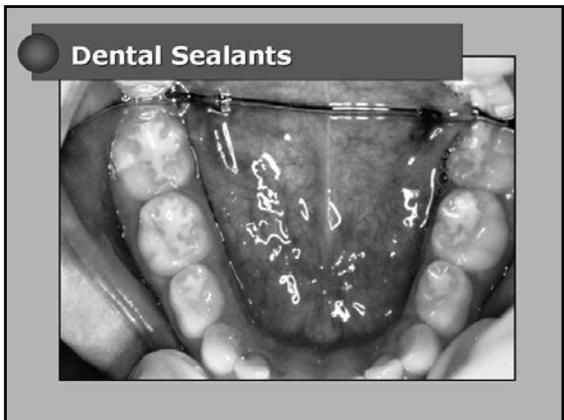
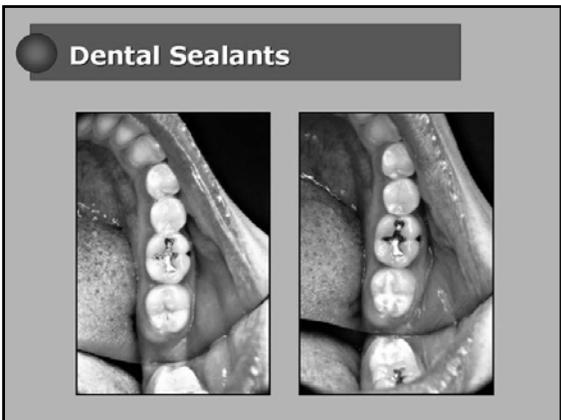
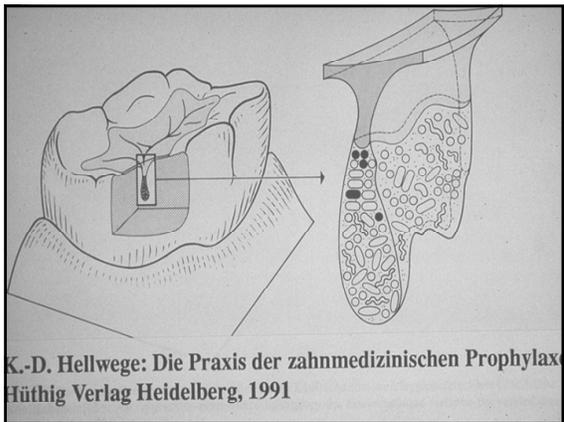
- F inhibits glucosyltransferase. Strep mutans uses this to produce dextrans to attach to teeth.
- F1 prevents smooth surface caries NOT pit and fissure caries....Sealants prevent pit and fissure C.
- Toxic flouride dose =5mg/kg.
- Lethal dose=20mg/kg.
- Antidote-milk and antacids containing calcium.

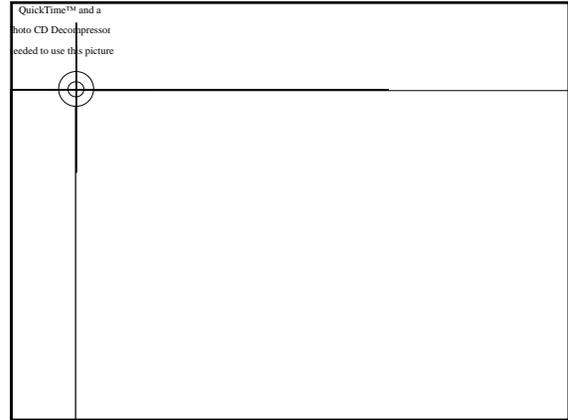
NDB Excerpts

- 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%).



- ### Dental Sealants
- Noninvasive procedure
 - Preventive
 - Seals deep, narrow grooves





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:

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

Mouthguards

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

