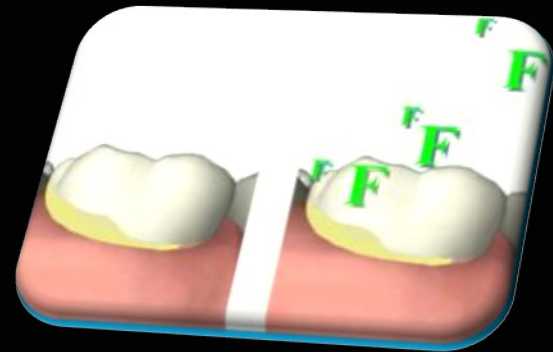


FLUORIDE DELIVERY METHODS & TOXICITY OF FUORIDE



FLUORIDE DELIVERY METHODS

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graph TD; A[FLUORIDE DELIVERY METHODS] --> B[SYSTEMIC]; A --> C[TOPICAL]; C --> D[PROFESSIONALLY]; C --> E[SELF APPLIED];
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SYSTEMIC

Community Water fluoridation
School water fluoridation
Salt fluoridation
Milk Fluoridation
Fl. Supplements

TOPICAL

PROFESSIONALLY

SELF

APPLIED

COMMUNITY WATER FLUORIDATION

- Most efficient , effective & economical method.
- COMPOUNDS USED : Sodium Fluoride, Sodium silicofluoride , Hydrofluorosilicic acid.

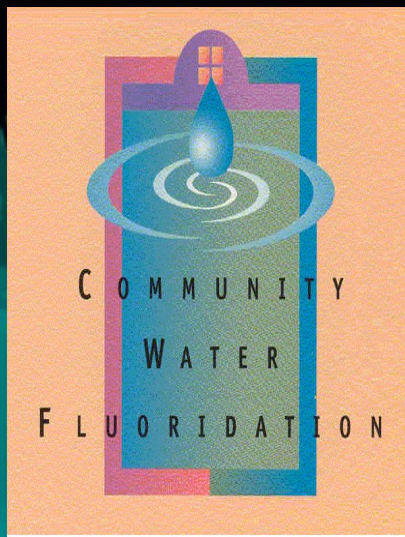
- TECHNIQUE /SYSTEMS :

Dry Feeder

Saturator Feeder

Acid feed

Venturi fluoridation



- ADVANTages :
 - Continuous protection for dental caries.
 - Cost effective
 - No daily dosage schedules to remember.
 - Socially equitable.
-
- DIS ADVANTages :
 - Possible only where there is public water supply.
 - Personal choice.



SALT FLUORIDATION

- 1st introduced by WEPSI (Switzerland) 1945.
- Recommended Concentration is 250 mg F1/kg salt.



- ADVANTages :

- Economical
- Patient's choice

- DIS ADVANTages :

- Consumption of salt till 4-5 years after birth is negligible---So, no protection



YOUNGER CHILDREN

- Cant be used in medically compromised patients (Hypertension& renal failure)

SCHOOL WATER FLUORIDATION

Communities where
there is no central
water supply

School children ,which are high risk group

- 1st initiated as pilot study in 1945 at USA

- RECOMMENDED DOSE : 4.5ppm

MILK FLUORIDATION

- 1st introduced by Zeigler —→ 1955.
- CONCENTRATION: 2.2 mg NaF / 250 ml milk.

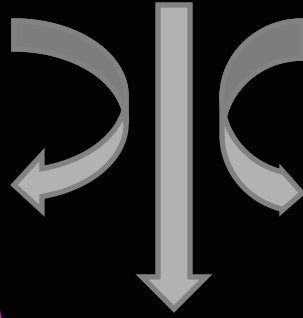
- ADVANTages :
- Approaches the young children



HIGH RISK GROUP FOR CARIES

- Personal choice
- DIS ADVANTages :
- Children from lower socio-economic status tends to drink less milk.
- Costly
- Patient co-operation

FLUORIDE SUPPLEMENTS



Tablets

Lozenges

Drops



Recommended dosage levels of supplemental fluoride

Age	Concentration of F in water (ppm)		
	0.3	0.3-0.6	0.6
Birth-6 months	—	—	—
6 months-3 years	0.25	—	—
3-6 years	0.50	0.25	—
> 6 years	1	0.5	—

TOPICAL FLUORIDES

PROFESSIONALLY APPLIED



Sodium Fluoride	<ul style="list-style-type: none">• Stannous Fluoride• APF
Fluoride Varnishes	<ul style="list-style-type: none">• FI Containing prophylactic pastes
FI containing Dental Materials	<ul style="list-style-type: none">• FI impregnated Dental Floss

SODIUM FLUORIDE

- KNUTSON TECHNIQUE: 2% NaF
- METHOD OF PREPARATION:
2gm NaF powder + 100 ml distilled water

STANNOUS FLUORIDE

- MULER'S TECHNIQUE: 8% / 10% SnF₂ .
- METHOD OF PREPARATION:
0.8 gm/1gm SnF₂ powder + 10 ml distilled water.

APF

- BRUDEVOLD'S SOLUTION (1960)



- APF consists of 1.23% F , in 0.1 M phosphoric acid at Ph of 3.





FLUORIDE VARNISH

- Most commonly used varnishes are ;
- DURAPHAT:22.6 mg F/ml.
- Active F1 available is 22,600 ppm.
- DURAFLOUR:22.6 mg F/ml.
- FLUOROPROTECTOR:
- Active F1 available is 7000 ppm.



FLUORIDE IMPREGNATED DENTAL FLOSS & PROPHYLACTIC CUPS



FLUORIDE CONTAINING DENTAL MATERIALS



SELF APPLIED TOPICAL FLUORIDE

FLUORIDE DENTRIFICE

- Most commonly used FI Dentifrice are :
- SODIUM-MONFLUORO PHOSPHATE
- SODIUM FLUORIDE

- SAFETY : FI tooth paste contains 900-1000 ppm FI (adults)
- 500 ppm FI (children).

FLUORIDE MOUTH RINSES



• DOSAGE

1. Once daily
(Low concentration and high frequency)
0.02 % of NaF
0.05% NaF
2. Once weekly / fortnightly
(High concentration and low frequency)
0.2% NaF
0.5% NaF



TOXICITY OF FLUORIDE

ACUTE
TOXICITY



CHRONIC
TOXICITY

ACUTE FLUORIDE TOXICITY :

- Lethal Dose is the amount of drug likely to cause death.
- **CERTAINLY LETHAL DOSE :**
- ADULT LETHAL DOSE=34-64 mg F/kg body weight
- **SAFETY TOLERATED DOSE :**
- $\frac{1}{4}$ Certainly Lethal Dose



THANK YOU