

Comparison of Fluoride Varnish with Other Types of Fluoride

2005 Herschel S. Horowitz Symposium

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Dental caries is expensive in terms of teeth, time, and money and can be very painful and disfiguring when left untreated. Yet, for the most part, we know how to prevent or control dental caries with the appropriate use of fluorides and dental sealants.



Considerations when Selecting A Type of Topical Applied Fluoride

- Effectiveness of Agent
- Caries Risk
- Age of Recipient
- Permanent/Primary Teeth
- Acceptability of Product



The Main Requirements of a Successful Public Health Program are that:

- The Procedure is safe
- Effective
- Applicable to large numbers of people
- Low cost
- Acceptable
- Easy to do
- Require few supervisory/professional personnel to accomplish

There are two types and four brands of fluoride varnishes available in the U.S.

Fluoride Varnishes Available in the U.S.

Duraphat

5% NaF (22,600 ppm F)

Duraflor

5% NaF

CavityShield

5% NaF

FluorProtector

1% Difluorosilane, 01.% F (1,00 ppm F)

Operator Applied Fluorides



Relative Attributes of Operator Applied Fluorides

Attribute	APF	FV
Effectiveness	Yes	Yes
Frequency of Application	2X/yr	2X/yr
Taste	Acceptable	Acceptable
Suction Required	Yes	No
Cost		
Tooth Discoloration	No	Yes (except FluorProtector)
Gingival Reaction	No	No
Time Required	< 8 minutes	< 6 minutes
Instructions	Brief	More involved

Post Fluoride Application Instructions

FV

Do not eat-2 to 3 hrs.

**Do not brush until next
Morning**

Do not drink 2 hrs; eat 4 hrs.

Avoid rough/hard food for 24hrs

FG

Do not eat/drink for 30 minutes

A recent Cochrane review noted that based on the results from a single trial comparing fluoride varnish to fluoride gel there is insufficient evidence to confirm or refute a differential effect in caries reduction between the two. There was a non-significant effect in favor of varnish.

It is important to point out that the Cochrane review did not include fluoride foam because there are no clinical trials on these products despite the fact that they are the most used operator applied fluoride in the U.S.

The Cochrane review also noted that there was a general lack of data on acceptability and adverse effects for all topical fluorides.

A Canadian Study by Hawkins et al Compared Acceptability of F Foam and Varnish

Convenience Sample of n= 256

3-15years of age

<6 yrs. = 30%

7-10 yrs = 51%

≥11 yrs. = 19%

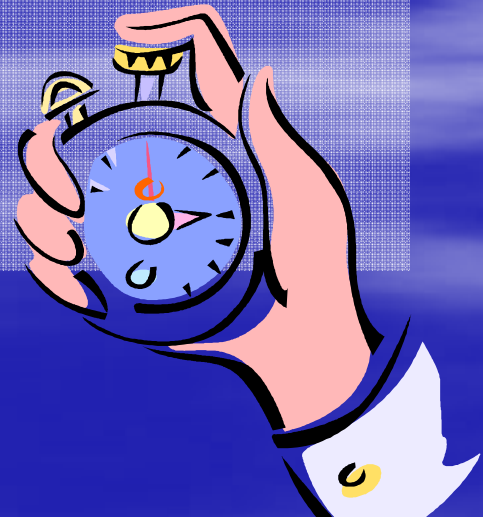
Observed Adverse Outcomes Included

- Vomiting
- Crying
- Gagging
- Excessive arm/leg movements & other signs of distress



This non-randomized study found that F varnishes took significantly less time compared with F foam; thus were considered much less costly.

*It must be pointed out that the fluoride foam used in trays was applied for **four** minutes rather than the suggested....and usually used **one** minute.*



Generally, acceptance of fluoride varnish was higher than the fluoride foam, especially among 3 to 6 year olds.

***Study by Warren et al had
hygienists and patients'
complete questionnaires
comparing FV with FG.
Overall hygienists and
patients preferred
varnishes.***

Self-applied Fluorides



No head to head studies were available to address the question of effectiveness between fluoride varnish and fluoride mouth rinse. Thus, the Cochrane review team conducted a meta-analysis of five trials of self-applied fluoride mouth rinse compared with fluoride varnish. Again, the differences were non-significant in favor of fluoride varnishes.



***Results from a single trial
comparing fluoride toothpaste
with varnish in primary teeth
were inconclusive***

***Cochrane reviewers
concluded: no strong evidence
that fluoride varnish is more
effective than other types of
topical fluorides.***



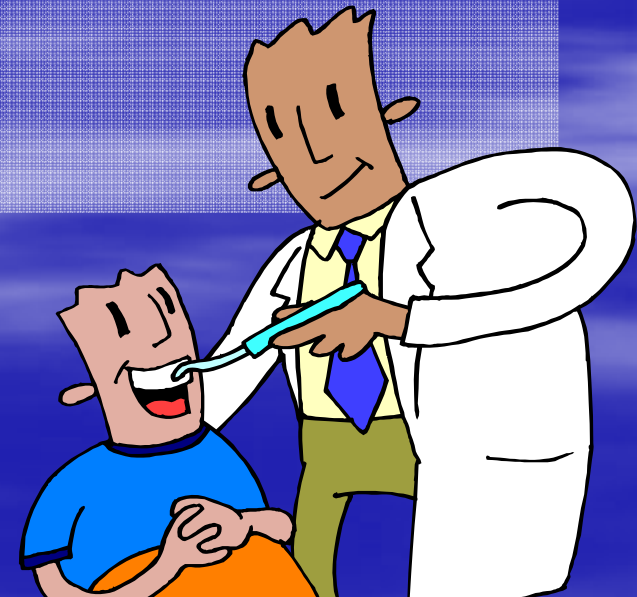
Topical fluorides such as mouth rinses, varnishes, and gels do not appear to be more effective at reducing dental caries in children and adolescents than fluoride toothpaste.

Practicality:

The use of fluoride varnish is as practical as any other operator applied fluoride and likely more practical for use with children less than six years of age



We must ask, is the application of fluoride varnish by a health care provider a public health measure?



There is recent evidence that simply providing free toothpaste with an adequate fluoride concentration could reduce caries among 5-to 6-year-olds.





We must keep in mind that people can do a lot to prevent caries if they know what to do, have the 'tools' and do it.



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