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Abstract of the Scientific Literature

The Effects of Fluoride Varnish on Demineralized Enamel

Fluoride varnish has been proven to inhibit dental caries, but little has been done to investigate its remineralization effects. The purpose of this study was to evaluate in vitro this property of a topical fluoride varnish when applied directly to a carious lesion vs being applied to the tooth surface surrounding the lesion.

Fifteen extracted human molar teeth, which had been kept hydrated, were sectioned mesiodistally—with one half serving as a control. The buccal surfaces were coated with a protective nail varnish, intentionally leaving a window of enamel 1x5 mm in size. Lesions were created by suspending the teeth in an artificial caries-producing medium. After sectioning through the area of each lesion, a quantitative analysis was performed. All teeth were then painted with a 5% NaF varnish: half of the sample size had the entire tooth painted, including the lesion; the other half had the tooth up to the lesion surface painted. All teeth were stored in an artificial saliva solution for 30 days and then requantitated. The results showed that remineralization did occur, with no significant differences noted between the 2 different application techniques. Both techniques showed effective remineralization.

Comments: This study showed that fluoride varnish remineralizes substrate enamel lesions. This is of considerable value to practitioners, who frequently see "white spot" lesions. The application of a fluoride varnish is a conservative, simple, cost-effective, and easy treatment approach to stop the demineralization process and initiate remineralization. We can easily examine patients on a frequent recall basis to check on the progress of these "white spots" and take appropriate action, if warranted. **GM**

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Casellano JB, Donly KJ. Potential remineralization of demineralized enamel after application of fluoride varnish. Am J Dent 2004;17:462-464.

39 references