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In Vitro Demineralization Inhibition of Tooth Enamel Adjacent to Dental Sealants

Dental caries (tooth decay) is the most prevalent infectious disease among children and affects 85% of adults 18 or older in the United States. Since dental caries develops mostly in the pits and fissures (grooves) of the tooth, dental sealants are used to protect the area where grooves have formed. These sealants are proven to protect the area directly under which they are applied. It is also known that fluoride is another means of caries prevention. By taking the conventional sealants and combining it with fluoride, a fluoride containing sealant was produced. Fluoride might add an advantage in preventing dental caries beyond the sealant perimeter. In my research, I wanted to find out if this new sealant could protect not only the area under which it was applied, but the surrounding areas of the tooth as well. It was determined that due to the fluoride released, this new sealant did indeed protect the surrounding areas of the tooth. With this finding, it is now possible to not only protect pre-existing pits and fissures but also protect the surrounding tooth enamel - thus preventing dental caries before it starts.

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