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Estimation of Optimal Amount of Fluoride Dentifrice for Adults to Prevent Caries by Comparison between Fluoride Uptake into Enamel *In Vitro* and Fluoride Concentration in Oral Fluid *In Vivo*

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Abstract: Fluoride dentifrice has been accepted widely for use in caries prevention and its effectiveness has been confirmed. In order to enable the use of fluoride dentifrice effectively in daily brushing, the present study was performed to examine the relationship between fluoride uptake and the amount of fluoride dentifrice used and brushing time for adults. We examined the relationship between fluoride uptake into the surface layer (4-6 μm) of enamel and the active fluoride concentration *in vitro* and the relationship between the amount of fluoride dentifrice (1,000ppmF) used and the fluoride concentration in oral fluid *in vivo*. It became clear that fluoride uptake into the enamel was increased at the concentrations of 300ppmF or more. Fluoride uptake at 300ppmF was increased for 2min and became saturated thereafter. The results of the relationship between the fluoride concentration in the oral fluid and the amount of fluoride dentifrice used indicated that the amount of dentifrice that could maintain the mean fluoride concentration at 300ppm or more for 2min was 1.0g or more. From these results, the recommended amount of fluoride dentifrice (1,000ppmF) is 1.0g or more for adults.

Key words: [Fluoride dentifrice](#), [Fluoride uptake](#), [Amount of fluoride dentifrice](#), [Fluoride concentration in oral fluid](#)

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