

0798 Effects of Children's Toothpastes on Enamel Lesion Progression: pH-cycling Study

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Objectives: To evaluate the de/mineralization effects of different amounts of child formula toothpastes on primary tooth enamel. **Design:** An in vitro single-section pH-cycling experimental model. **Methods:** Sound primary anterior teeth were painted, leaving a 1 mm wide window on the buccal and/or lingual surface prior to being placed in demineralization solution for 96 hours to produce artificial caries lesions 60-100 μm deep. The teeth were then longitudinally sectioned (100 μm thick) and randomly divided into 3 groups. Group A specimens were treated with a pea-sized portion of a non-fluoridated toothpaste while specimens in Groups B and C were treated with half-pea-sized and pea-sized portions of a 500 ppm F toothpaste, respectively. The pH-cycling model was utilized for 7 days. **Outcome measurements:** Polarized light microscopy and microradiography were used to evaluate the progression of the lesions. **Results:** Groups A and B lesions increased in depth and area by 60% while those in Group C increased by 20%. There was no significant difference between the non-fluoridated and half-pea-sized portion of the fluoridated toothpaste ($p > 0.05$); however, a significant difference was found when the non fluoridated and half-pea-size portion were compared with the pea-size portion ($p < 0.001$, ANOVA and Bonferrini comparison test).

Conclusions: Different amounts of child formula fluoridated toothpastes differentially effect the progression of demineralization of early carious lesions. Even though a pea-sized portion of 500 ppm F toothpaste may not promote remineralization of early carious lesion in primary teeth, it slows down the rate of demineralization. Therefore, the reduction of the amount of fluoride toothpaste in order to minimize the risk of fluorosis should be undertaken with great care because it could be expected to compromise the cariostatic effect of toothpastes with a low fluoride content.

[Seq #95 - Fluoride Treatment, Dentifrices, Mouthrinses](#)

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