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Comparison of Brushing Regimens on Caries Progression over One Year

S.F. McClanahan¹, L. Archila², P. Walters¹, R.D. Bartizek¹, R.W. Gerlach¹
¹Procter & Gamble, USA; ²University of Texas at San Antonio, USA

The role of brushing regimen in caries clinical trials potentially has a profound effect on caries experience over the course of a trial. **Objectives:** This study was conducted to assess the effects of brushing regimen on caries progression over a one year period. **Methods:** A total of 963 children, ages 5-16, were enrolled in three schools in Guatemala City, Guatemala. Caries examinations were performed at baseline and one year by a calibrated examiner using a visual tactile examination method performed with the aid of an artificial light, mouth mirror, compressed air, and a dental explorer employing a modified Radike criteria. Subjects were assigned by school to one of three brushing regimens; supervised brushing twice a day with 1100 ppm sodium fluoride dentifrice, unsupervised brushing with 1100 ppm sodium fluoride dentifrice, or a no treatment regimen. **Results:** The adjusted baseline mean DMFS in the 779 children that completed the study was 7.42, 7.66, and 7.12 for the no treatment, unsupervised, and supervised brushing groups, respectively, and were not significantly different ($p > 0.05$). After 1 year, the adjusted mean gross DMFS increment was 1.48, 1.34, and 0.93 for the no treatment, unsupervised, and supervised brushing groups, respectively. The increment in the supervised group was statistically significantly lower relative to both the no treatment and unsupervised treatment groups with $p = 0.0009$ and $p = 0.004$, respectively. The unsupervised brushing and no treatment groups were not statistically significantly different. **Conclusions:** Supervised brushing results in a significant reduction in caries increment relative to unsupervised brushing and a no treatment regimens and imparts a caries benefit in the absolute.

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Vital Bleaching with Two Professional Systems: Clinical Trial Comparing Strips to Custom Trays

R.W. Gerlach¹, P.A. Sagel¹, X. Zhou¹, K. Karpinia², P. Harris², I. Magnusson²
¹Procter & Gamble, OH, USA; ²University of Florida, FL, USA

Objective: A randomized clinical trial was conducted to compare the whitening effectiveness of two professional vital bleaching systems. **Methods:** Balancing for baseline color, 69 adult volunteers were randomized to either a whitening strip containing 6.5% hydrogen peroxide or a custom tray-based system using both hydrogen and carbamide peroxide. Total contact time was 21 hours for the strip system and 28 hours in the tray system, following manufacturers instructions. Whitening was measured objectively using digital image analysis to assess $L^*a^*b^*$ each week over a 3-week period. **Results:** The predominantly female (74%) and non-smoking (90%) study population ranged from 18-65 years of age. Both treatments resulted in significant ($p < 0.05$) improvements in yellowness (Δb^*), brightness (ΔL^*) and overall color (ΔE^*). For between group comparisons, strip subjects had statistically significant or directionally favorable whitening response relative to the tray system at intermediary time points, while at the end-of-treatment, the strip group had highly statistically significant ($p < 0.003$), superior whitening response with respect to all color parameters measured in the study. Both treatments were generally well-tolerated, with 35-40% of the subjects in each group reporting minor tooth sensitivity or gingival irritation. **Conclusion:** The 6.5% hydrogen peroxide strip system yielded a two-fold improvement in yellowness (Δb^*), along with significant improvements in brightness (ΔL^*) and overall color (ΔE^*) compared to the hydrogen peroxide/carbamide peroxide, custom tray-based system.