

Oral Presentations - Research Supported by P&G

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0288

Clinical Trial Evaluating Two Peroxide Whitening Strips Used by Teenagers

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Objective: Double-blind clinical research in teenagers was conducted to compare the clinical response of a thin, concentrated peroxide whitening strip relative to a control with preceding safety and efficacy data in this population.

Methods: Informed consent and child assent was obtained from 48 teens, 13-17 years of age. After baseline measurements, subjects were randomized to a thin 10% hydrogen peroxide whitening strip, or a 6.5% hydrogen peroxide strip with a thicker gel layer. Strip use was 30 minutes twice per day for 22 days on the maxillary arch, followed by 22 days on the mandibular arch. Efficacy was measured objectively as $L^*a^*b^*$ color change from digital images taken every 11 days. **Results:** Mean (SD) age was 15.1 (1.5) years. Relative to baseline, both strip groups experienced significant ($p < 0.0001$) color improvement for yellowness (Δb^*) and lightness/brightness (ΔL^*) beginning at the first visit (Day 11). Continued use resulted in significant color improvement through Day 22. At end-of-treatment, the adjusted Δb^* means \pm standard errors for the combined arches were -3.7 ± 0.31 , and -3.8 ± 0.30 for the higher and lower concentration strips, respectively. Comparative results were similar for ΔL^* , with adjusted means \pm standard errors for the combined arches of 2.7 ± 0.19 for the thin 10% peroxide gel and 2.8 ± 0.18 for thicker 6.5% peroxide gel. Groups did not differ significantly ($p > 0.59$) with respect to combined Δb^* or ΔL^* at end-of-treatment. Tooth sensitivity and oral irritation represented the most common adverse events. No subject discontinued early due to a treatment-related adverse event. **Conclusion: Twice daily use of thin 10% hydrogen peroxide gel whitening strips by teens over 44 days resulted in significant tooth whitening, without serious adverse events.**

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0345

Surface Wettability of Oral Surfaces During Vital Tooth Bleaching

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It is well known that the surface chemistry of teeth influence bacterial adhesion, plaque formation and protection from environmental challenges. **Objective:** This study assessed the effects of Crest® Whitestrips™ peroxide tooth bleaching gels on surface thermodynamics of teeth using an in vivo contact angle technique. **Methods:** Six volunteers brushed with Crest® Regular dentifrice reporting to the clinic 2x for tracking of intraoral water contact angles (according to Busscher et al. J Clin Dent 13:38,2002) at defined times: A: pre-brush a.m., B: post-brush a.m., C: pre-lunch, D: late afternoon. In the second phase of testing volunteers included twice daily application of Crest Whitestrips Premium bleaching gel as directed for 30 min bid. The bleach treatments were carried out in advance of both pre-lunch and late afternoon contact angle readings. Volunteers cleaned teeth with tap water and a toothbrush prior to contact angle measurements. The full complement of diurnal contact angles were collected for 4 visits over the one week hence permitting perspective on acute (post treatment) and any potential chronic (a.m. pre- and post-brushing) effects on surface conditioning films on oral surfaces. **Results:** For enamel, diurnal water contact angles matched our published observations while using Crest Regular control with $A=61^\circ$, $B=43^\circ$, $C=56^\circ$, $D=61^\circ$ as a daily response. Bleaching decreased post use contact angles with surfaces becoming more hydrophilic ($C=-10^\circ(5)$; $D=-15^\circ(3)$ ($p < 0.05$ students t), however effects were transient as other diurnal measures $A=1^\circ(5)$ and $B=-3^\circ(2)$ measures were not changed with bleach use. **Conclusion: Vital bleaching of teeth with Crest Whitestrips increases enamel wettability much like conventional dentifrices. Like dentifrices, surface changes are transitory. Crest Whitestrips vital bleaching does not produce lasting pellicle changes.**