

Whitening Efficacy of 2.7% Hydrogen Peroxide Serum with LED Light

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Objective:

To investigate the tooth whitening efficacy of a 2.7% hydrogen peroxide (HP) serum delivered via a light-activated whitening device as compared to a matching placebo serum (0.0% HP) in an identical whitening device with deactivated light feature.

Methods:

A phase III, randomized, double-blind, two-cell and parallel-group clinical study was conducted on healthy subjects (18-70 years) from the Dominican Republic, with a mean Vita Extended Bleached Guide shade 17 or darker. Subjects were randomized into two groups (Test and Placebo Group) and instructed to use their assigned serum on a whitening device at home for 10 minutes nightly for a 10 day period. Oral soft and hard tissue assessments, and tooth shade evaluations were conducted at baseline and after 3, 6, and 10 treatment applications.

An independent t-test was used for group comparisons with respect to baseline mean shade rank scores. Within-treatment comparisons with respect to baseline versus follow-up mean shade rank scores were performed using a paired t-test. Comparisons of the treatment groups with respect to baseline-adjusted mean delta shade changes from baseline at the follow-up examinations were performed using an analysis of covariance.

Results:

Eighty (80) subjects complied with the protocol and completed the study. The 4-day, 7-day and 11-day examinations demonstrated that test group subjects experienced statistically significant ($p < 0.001$), shade improvements of 1.51, 2.86, and 4.77 respectively (3, 6, and 10 days of product use). The 2.7% HP serum delivered via a light-activated whitening device was significantly more effective than the placebo in providing whitening benefit after a single daily application at night for 10 days.

Conclusions:

The 2.7% HP serum, delivered via light-activated whitening device, applied 10 minutes/day for 10 days, provided significant tooth shade improvement from baseline as compared to a matching placebo serum used with a deactivated device.

