

# Zoom! Chairside Whitening System: A Clinical Study

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The increasing use of take home whitening products has helped create a desire for faster whitening systems. Consequently, in-office whitening procedures with higher concentrations of hydrogen peroxide have gained popularity due to their faster whitening results. In this clinical study, Zoom!, an in-office system combining a light with a new wavelength and a proprietary whitening gel, was used. The light operates between the spectral emissions of 350- 400nm and incorporates an IR (Infra-Red) filter to minimize heat at the surface of the tooth for better patient comfort. The light does not contain a significant UVB (Ultra-violet) or IR spectral component and can illuminate the surface of all the teeth to be whitened simultaneously.

The whitening procedure involves a short preparation to isolate the subject's lips and gums. The proprietary Zoom! Whitening gel is then applied. The whitening gel is provided in a two-part system for greater stability. The contents, 32% hydrogen peroxide (Part 1) and an activator (Part 2), are delivered through a dual barrel syringe to make a 25% hydrogen peroxide gel. The gel is a scientifically formulated, pH balanced hydrogen peroxide that, when activated, decomposes into reactive intermediates. These intermediates gently penetrate the teeth to remove stains and discoloration. The clinician is required to monitor the procedure to ensure any exposed skin or tissue is isolated and protected. Protective eyewear is also required during the procedure.

Twenty subjects with an initial average shade of A3 or greater (VITAPAN® Classical System shade guide) on four of their six maxillary teeth participated in this in-office vital tooth bleaching study. Subjects with following criteria were excluded from the study:

- reaction to peroxide
- glycols
- carious lesions
- broken or lost restorations
- crowns or laminates on anterior teeth
- dental implants on the anterior teeth
- any systemic diseases
- tetracycline staining
- have used tooth whitening products before
- individuals on current systemic anti-infective, anti-inflammatory or immuno-suppressive therapy
- taking any light sensitive drugs or substances that may be photo reactive
- with fewer than six gradable anterior maxillary teeth
- with a medical history of melanoma
- requiring any antibiotic therapy prior to dental prophylaxis
- periodontal disease
- extensive calculus

Qualified subjects completed a demographic and medical history survey and then received a complete supra-gingival tooth cleaning followed by an initial Vita-shade assessment. The outcome measure was the assessment of shade change. Tooth color was evaluated subjectively using a Vita classical shade guide before treatment, post treatment, Day 2, Day 7 & Day 14. The shade guide was arranged in the chromatic rank order as recommended by the manufacturer. Two or more calibrated examiners assessed the shades throughout the study in order to verify the shades. The range of shade change after the procedure was 6 to 10 shade changes. The average shade change post-treatment was 7.4. At Day 2, the average shade change was 7.5. Seventy-percent of the subjects achieved at least 7 shade changes. Thirty-percent of the subjects achieved 8-10 shade changes. At Day 14 there was no Vita shade regression.

Subjects generally tolerated the procedure well. Approximately 20% of the subjects experienced sensitivity, including mild sudden sharp pains or a dull to moderate ache two hours post treatment for a period of up-to six to eight hours. The sensitivity and pain were transient and most of the subjects were relieved from pain and/or discomfort with over the counter Advil® or Tylenol®. In comparison, published literature indicates tooth sensitivity of over 50% with other professional dentist administered take home products.