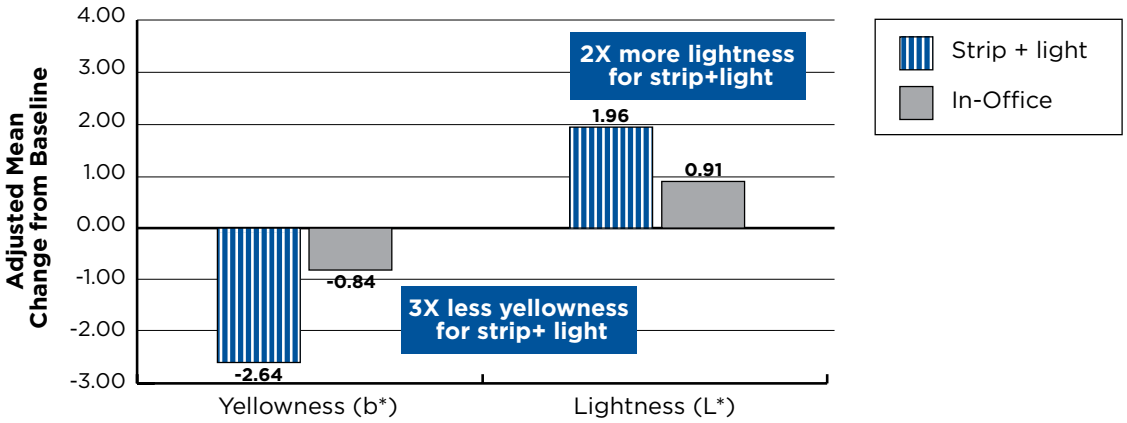
Whitening Strip with Light Technology versus an In-office Whitening Treatment

Reference: N. Gurich, MK Anastasia, P. Amini. Data on file, 2016.

KEY CLINICAL RESULTS

- Crest® 3D White® Whitestrips with Light, a novel technology with 10% hydrogen peroxide whitening strips and LED light, resulted in 3 times less yellowness (Δb*) and 2 times greater lightness (ΔL*) at the end of the treatment (*P*<0.0001) compared to Opalescence® Boost, an in-office treatment with 40% hydrogen peroxide. See Figure.
- Both groups provided a significant whitening benefit, as evidenced by less yellowness and greater lightness, relative to baseline (*P*<0.001).

Figure. Change in yellowness (Δb*) and lightness (ΔL*) from baseline



N=37 for strip + light; 18 for in-office treatment

OBJECTIVE

To compare whitening efficacy of whitening strips in conjunction with a light device relative to a professional in-office treatment.

STUDY DESIGN

This was a randomized, controlled, examiner-blinded clinical trial. After institutional review and informed consent, adults with no history of previous bleaching and a Vita shade of A2 or darker on maxillary anterior teeth were enrolled into the study and were randomized in a 2 to 1 ratio to one of the following groups:

- Crest 3D White Whitestrips with Light; flexible whitening strips with 10% hydrogen peroxide gel with an LED light (Procter & Gamble)

  or

- Opalescence Boost, an in-office professional treatment with 40% hydrogen peroxide gel (Ultradent)

Subjects in the whitening strips with light group performed their first treatment at the clinical site, supervised by trained personnel. Subjects applied and wore a whitening strip on their maxillary anterior teeth for a total of 60 minutes. During the last 5 minutes of wear, subjects applied the light device to their anterior teeth. Subjects were

instructed not to eat, smoke, sleep, or drink (with the exception of water) while wearing the strip and to refrain from wearing a strip the morning of clinical visits. Subjects were then provided with both written and oral usage instructions so they could complete the remaining 9 treatments at home.

According to the manufacturer's instructions, subjects in the professional in-office treatment group received two 20-minute in-office chairside treatments on the maxillary anterior teeth by a trained dental professional at the clinical site.

Subjects in both groups were instructed to brush with the provided Oral-B Indicator soft manual toothbrush and Crest Cavity Protection sodium fluoride toothpaste twice a day in their customary manner. Subjects used the study products exclusively for the duration of the study.

Tooth color was evaluated using Digital Image Analysis (DIA) to assess changes in yellowness (Δb*) and lightness (ΔL*) at Baseline and after both groups completed their treatments. The DIA methodology has been published extensively.*

CLINICAL COMMENT

The introduction of Crest Whitestrips in 2000 represented a significant paradigm-shift in whitening systems for professionals and patients. The innovative strips, coated with a hydrogen peroxide gel, offer a convenient, effective, economical option that significantly expanded the tooth whitening market. In addition, the desire for whiter teeth resulted in patients being more attentive to the appearance of their smile, which can be a motivating factor for oral hygiene. Since their initial launch, new Crest Whitestrips systems have been introduced with various hydrogen peroxide concentrations and gel loads.

Most recently, a novel technology was developed that uses Crest Whitestrips with an LED light to increase whitening efficacy. This research showed the new strip + light technology provided 2 times the whitening effect of a popular in-office system that has 40% hydrogen peroxide. Professionals should consider offering this new strip + light technology as a highly effective, affordable, take-home alternative to patients seeking tooth whitening.

* Sagel PA, Gerlach RW. Application of digital imaging in tooth whitening randomized controlled trials. *Am J Dent*. 2007 Sep;20 Spec No A:7A-14A.

