Objectives: This study evaluated clinical response of a peroxide-containing paint-on gel relative to a marketed peroxide strip control. Methods: 36 adults were randomized to Colgate® Simply White Night, an 8.75% hydrogen peroxide paint-on liquid in an applicator bottle, or Crest® Whitestrips® Premium, a 10% hydrogen peroxide gel on a whitening strip. The paint-on gel was used for 14 nights without a barrier, while the strips were applied twice daily for 30 minutes over 7 days. Efficacy was measured objectively as L*a*b* color change using digital images of the maxillary anterior teeth at Days 2, 8 and 15. Results: Age ranged from 19-70, 69% of subjects were female, and groups were balanced with respect to baseline demographics, behavioral characteristics and tooth color. After two weeks treatment, the overnight paint-on gel had an adjusted mean ± SE Δb* (reduction in yellowness) of –0.51 ± 0.16. After 1 day treatment, the strip group exhibited an adjusted mean ± SE Δb* of –1.06 ± 0.14, differing significantly (p < 0.02) from the cumulative paint-on gel response after 14-nights treatment. The... Day 2 through Day 8 (end-of-treatment for that group). Groups differed significantly (p < 0.0005) for end-of-treatment Δb* and ΔL*. Both treatments were well tolerated, and no subject discontinued treatment early due to an adverse event. Conclusion: One day use of 10% hydrogen peroxide whitening strips resulted in significant color improvement compared to two-weeks overnight use of a 8.75% hydrogen peroxide paint-on gel.