

Development of the Evolve Toothbrush: Laboratory Evaluations of Gingival Margin Cleaning and Subgingival Access

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Abstract

Objective: The Evolve toothbrush has been developed with three heads that adjust to the tooth shape with brushing. With the exertion of gentle pressure on the center head against the tooth cusps, the two outer heads bend and conform to the tooth anatomy at the gingival areas around each tooth. In preliminary clinical observations, decreased plaque and improved gingival appearance was observed after one and two weeks of unsupervised product use. The purpose of this laboratory research was to evaluate the ability of the Evolve toothbrush bristles to remove artificial plaque deposits at and around the gingival margin (Gingival Margin Cleaning, GMC), and to gain access into and remove artificial plaque deposits from under the gingival margin (Subgingival Access, SA) using standardized, published methods.

Methodology: In the first two laboratory studies conducted, two toothbrush products, the new Evolve and the standard American Dental Association toothbrush (ADA) were evaluated for GMC and SA. In the third assay, three toothbrushes, the Evolve, Oral-B CrossAction, and the Sonicare Elite, were evaluated for SA. Each toothbrush product group was evaluated for 24 assessments using clinical tooth brushing motions on posterior tooth shapes under wet brushing conditions.

Results: In all laboratory tests conducted, the Evolve toothbrush had significantly ($p < 0.001$) greater efficacy compared to both the Oral-B CrossAction and the Sonicare Elite.

Conclusion: The Evolve toothbrush warrants further clinical evaluations as it is believed these future findings will further substantiate those of the initial testing, and demonstrate the Evolve's ability to help improve oral and overall health.

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