



Blinded Clinical Evaluation of a New Manual Toothbrush

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Abstract

Objective: The purpose of this single-blind cross-over study was to compare plaque removal associated with a new manual toothbrush, the Curvex™—Ergonomic Dental Technologies, Inc., San Francisco, CA, and a best-selling commercially available toothbrush, the Oral-B 40®—Gillette Co., Boston, MA. The Curvex toothbrush has a convex head that follows the contour of both the upper and lower lingual arches. Its tapered bristle array is expected to provide optimal contact with all of the tooth surfaces and reduce bristle “splaying.” It has a curved neck and handle which may allow deeper reach to the back molars by curving away from the roof of the mouth. Both toothbrushes have a texture in the soft range (the Curvex toothbrush uses a 0.006 filament, and the Oral-B 40 toothbrush uses a 0.008 filament).

Methods: Over a five-week period, twenty-one subjects participated in this investigation. Following random assignment, ten of the subjects started with the Curvex toothbrush, and the remaining subjects began with the Oral-B 40 toothbrush. Crossover occurred after a two-week use of each brush, using a one-week washout period. At the beginning and end of each two-week trial period, subjects were scored before and after brushing using the Turesky modification of the Quigley-Hein Plaque Index (T/Q-H). Findings of reductions in plaque score were limited to “before vs. after” assessments.

Results: Plaque scores were measured in each subject (up to 168 sites) on each of four occasions. The average baseline and test plaque scores for the Oral-B 40 brush were 2.41 and 1.72; for the Curvex brush these values were 2.34 and 1.69. Repeated measures ANOVA revealed no difference between brushes. Paired-comparison t-tests were conducted on each of the 168 evaluated sites, and no patterns of superiority for either brush were identified. Although both toothbrushes effectively reduced mean plaque scores, ANOVA demonstrated no significant difference between toothbrushes.

Conclusion: The Curvex toothbrush is as effective as the Oral-B 40 toothbrush in removing plaque.

A questionnaire administered to all subjects at the end of the five-week study revealed a preference for the Curvex toothbrush.