Abstract

- **Objective:** The purpose of this study was to determine the plaque removal effectiveness of a new children’s powered toothbrush and compare it to that of a manual brush.
- **Methods:** This examiner-blind, randomized study used a cross-over design. One-hundred and five qualifying male and female subjects (52 ages 8-12 and 53 ages 13-17) were randomly assigned either the powered brush (Spinbrush® GLOBRUSH) or a manual toothbrush (Oral-B® Indicator 30 Compact Soft Toothbrush) and instructed to brush at home with a standard fluoride toothpaste twice daily for two minutes during a one-week familiarization period. At the end of this period, the subjects returned to the study site after refraining from oral hygiene for twenty-four hours and from eating and drinking for four hours. Plaque was scored using the Rustogi Modification of the Navy Plaque Index, subjects brushed under supervision with their assigned toothbrush for two minutes, and plaque was rescored. They were then given the alternate toothbrush and the familiarization routine and evaluation process were repeated.
- **Results:** Within-group analysis showed that both toothbrushes produced statistically significant reductions from the pre-brushing baseline in whole mouth and regional plaque scores ($p < 0.0001$), with respective whole mouth reductions of 73.3% and 61.8% for the powered brush and the manual brush. Between-group analyses showed that the powered brush produced a statistically significantly greater plaque reduction than the manual brush, both whole mouth (12.8%, $p < 0.0001$) and at all subset sites, including difficult-to-reach areas such as the posterior lingual gingival region (74.9% greater plaque reduction, $p < 0.0001$).
- **Conclusion:** The Spinbrush GLOBRUSH was significantly more effective in reducing plaque than the manual toothbrush when evaluated using this single-use clinical model.