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sonicare

For Kids

Compliance

in vivo study

Brushing duration and use interaction patterns of manual versus sonic toothbrushes in children aged 7–10 years

Defenbaugh J, Schmitt P, Master A, Jenkins W, Strate J. International J Pediatric Dent 2009; 19:s1

Objective

To compare the brushing duration and use interaction patterns in children aged 7–10 years using a Sonicare For Kids power toothbrush versus Oral-B Stages 4® manual toothbrush.

Methodology

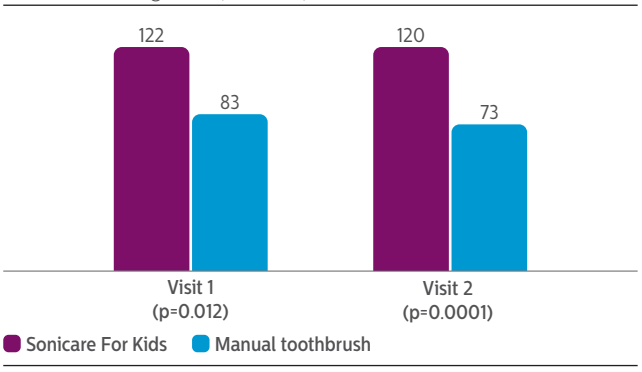
Sixty healthy subjects (31 females, 29 males) were enrolled in an IRB-approved randomized, parallel-design two-week study. Informed consent/assent was obtained. At Visit 1, eligible subjects were randomized and provided brushing instructions. They performed an on-site brushing session immediately thereafter. It was timed and video recorded for duration and use interaction data collection. A home-use period of two weeks commenced with the assigned product in order for subjects to familiarize with the device. At Visit 2, the brushing and recording procedure was repeated and subjects were dismissed. Longitudinal and between-group comparisons were assessed for duration and ergonomic use interaction events. Statistical analysis was performed using the Wilcoxon Test.

Results

Thirty-one subjects were randomized to Sonicare For Kids and twenty-nine to a manual toothbrush. A longer median brushing duration was observed for Sonicare For Kids users at both time points. Sonicare For Kids (122 seconds) compared to manual toothbrush (83 seconds) at visit 1 (p=0.012). Sonicare For Kids (120 seconds) compared to manual toothbrush (73 seconds) at visit 2 (p=0.0001).

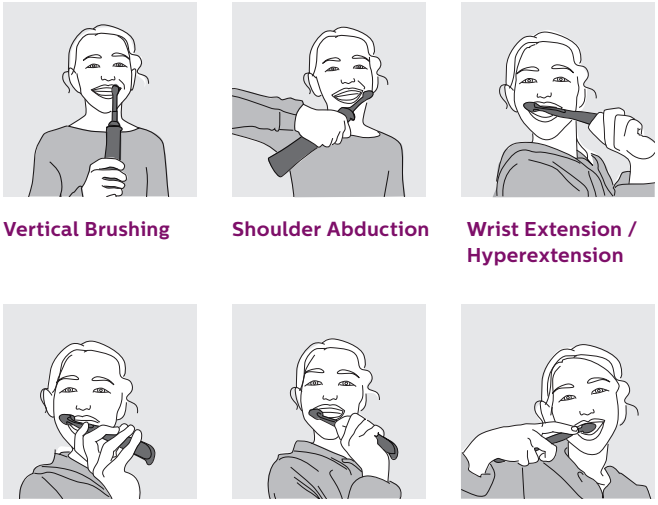
Brushing Duration

Median Brushing Time (seconds)



In video analysis review by an ergonomic expert, use interaction brush artifacts occurred more frequently with a manual toothbrush than with Sonicare For Kids, 1.56 compared to 0.80.

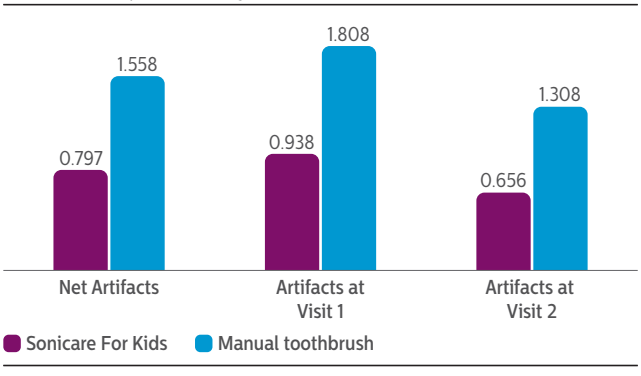
Use Interaction Brush Artifacts



Vertical Brushing | Shoulder Abduction | Wrist Extension / Hyperextension

Obvious Loose Grip | Obvious Over Grip | Finger Extension

# of Artifacts per Brush Cycle

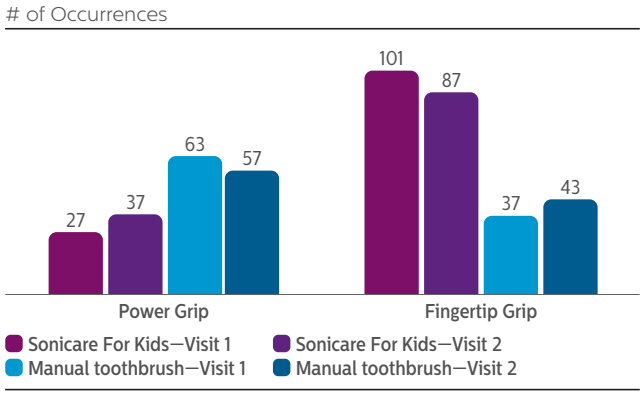


It was also observed that Sonicare For Kids toothbrush users prefer to grip with their fingertips, while manual toothbrush users prefer a power grip.

Grip Types

Power Grip Preferred for Manual Toothbrush

Fingertip Grip Preferred for Sonicare For Kids



For both types of brush, users prefer to grip in the center of the brush handle. Users did not typically switch between grips or hand location during brushing cycles or between brushing cycles.

Conclusion

Children aged 7–10 years brushed significantly longer with Sonicare For Kids than with a manual toothbrush following immediate product introduction and after a period of home use. Use interaction comparison suggests that form factor may influence the frequency of artifact occurrence.

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