

Gentleness

in vitro study

In vitro assessment of the effect of a manual and Sonicare FlexCare toothbrush on gloss and roughness of dental materials

de Jager M, Nelson R, Schmitt P, Moore M, Putt M, Kunzelmann KH, Nyama I, Garcia-Godoy F, Garcia-Godoy C. In vitro assessment of toothbrushing wear on natural and restorative materials. *Compend Contin Educ Dent.* 2007; 28 (suppl 1):42-50

Objective	To evaluate the effect on wear of dental materials of the Sonicare FlexCare power toothbrush and a manual toothbrush using simulated clinical conditions.
Methodology	Four different materials were investigated: the restorative composite materials Solidex and EsthetX, the implant material Titanium, and natural bovine enamel. For each material, 32 samples were embedded in acrylic mounts and polished to render a smooth surface as starting condition. Samples were either brushed with Sonicare FlexCare at 100 and 150 grams, or Oral-B P-35 Soft® manual toothbrush at 150 grams and 250 grams brushing load. All specimens were assessed after 3,000 and 12,000 brushing strokes, representing six months and two years of brushing, respectively, while using a toothpaste slurry based on Crest® Cool Mint Gel. Surface wear was determined before and after brushing using gloss meter and profilometry.
Results	In general, when differences were noted, they favored the Sonicare FlexCare over the manual toothbrush at clinically observed brushing forces (100 and 250 grams, respectively). For abrasion of Solidex, Sonicare FlexCare at 100 and 150 grams, and the manual brush at 150 grams all showed significantly less abrasion than the manual brush at 250 grams. For gloss of Solidex, Sonicare FlexCare at 100 grams, and the manual brush at 150 grams both retained significantly more gloss than the manual brush at 250 grams. For EsthetX and Titanium, no significant differences were observed. For gloss of bovine enamel, FlexCare at 100 grams retained significantly more gloss than the manual brush at 250g.
Conclusion	This study demonstrated that the Sonicare FlexCare is gentle for use on dental materials compared to a manual toothbrush for up to two years of simulated brushing with toothpaste.

