



## Gentleness

in vitro study\*

# Comparison of plaque removal by Philips Sonicare DiamondClean and Oral-B Pulsonic

Amini P, Goyal C R, Strate J. Data on File, 2011

### Objective

To evaluate dentin wear associated with the use of Philips Sonicare DiamondClean standard and compact brush heads compared to a manual toothbrush using simulated clinical conditions.

### Methodology

Twenty-four human dentin slices with a surface of 3x10 mm were embedded in temporary crown and bridge material and polished to render a smooth surface as starting condition. Samples were brushed either with Sonicare DiamondClean standard and compact brush heads using externally powered Sonicare handles at 100 grams or with an ADA reference manual toothbrush at 250 grams brushing load. These brushing loads represent clinical use conditions. All specimens were brushed using toothpaste slurry for a period representing six months (3,000 strokes) of clinical brushing. Dentin wear was determined before and after brushing using surface profilometry to establish the mean depth of induced surface wear from toothbrushing.

### Results

Both Sonicare DiamondClean standard and compact brush heads resulted in significantly less dentin abrasion than the manual toothbrush ( $p < 0.05$ ). There was no significant difference between Sonicare DiamondClean standard and compact brush heads.

### Conclusion

In this in vitro study, the Sonicare DiamondClean standard and compact brush heads were found to cause about 50% less dentin wear than a manual toothbrush.

Dentin Wear  
Wear ( $\mu\text{m}$ )

