



## Stain Removal

in vivo study

# Evaluation of stain removal by Philips Sonicare DiamondClean power toothbrush and manual toothbrushes

Colgan P, DeLaurenti M, Johnson M, Jenkins W, Strate J. Data on file, 2010

### Objective

To evaluate the reduction of naturally occurring tooth stain for Philips Sonicare DiamondClean and manual toothbrushes over two weeks of product use.

### Methodology

A randomized, multicenter, examiner-blinded, parallel, two-stage group, sequential-design study was conducted in a population of 179 healthy adults (124 females, 55 males) aged 18-65 years (mean age: 40) who had naturally occurring tooth stain on the buccal surface of the anterior teeth. The subject population included smokers and consumers of coffee, tea and red wine. The subjects were screened and consented at Visit 1 for qualification to enroll in the study. Subjects were instructed to abstain from smoking, eating or drinking fluids other than water for two hours prior to clinical visits and presented to the clinic within three to six hours of their last toothbrushing encounter. At Visit 2 (day 7 to day 1), stain was re-evaluated to confirm eligibility and participants were randomized either to the Sonicare DiamondClean power toothbrush or to the ADA reference manual toothbrush. Subjects were instructed on product usage and brushed at home twice daily using Crest Cool Mint Gel dentifrice. At Visit 3 (day 7) and Visit 4 (day 14), subjects returned to the clinic for safety and stain evaluations. Stain was assessed by using Modified Lobene Stain Index (MLSI).

### Results

All 179 subjects completed the study. Sonicare DiamondClean power toothbrush removed significantly more surface stain than a manual toothbrush. The mean baseline overall MLSI score for Sonicare DiamondClean was 0.55 and 0.56 for a manual toothbrush. The mean percent reduction in MLSI for Sonicare DiamondClean following one and two weeks of use was 20% and 33% respectively ( $p < 0.0001$  at each time point). The Sonicare DiamondClean power toothbrush was significantly superior to a manual toothbrush, reducing surface stain by 137% following one week of product use and by 67% following two weeks ( $p < 0.01$ /week 1;  $p < 0.01$ /week 2). Both products were safe for use.

### Conclusion

Sonicare DiamondClean power toothbrush effectively removed extrinsic tooth stain within one and two weeks of use, and it was significantly superior to a manual toothbrush at both time points.

% of Stain Removal

