

Stain Removal

in vivo study

Evaluation of tooth shade change following stain induction and Sonicare FlexCare use

Master A, Jenkins W, Putt M, Milleman J, Wei J, Strate J. Evaluation of Tooth Shade Change Following Sonic Toothbrush Use. *J Dent Res* 88 (spec Iss A): 2581, 2009

- Objective** To evaluate the efficacy of the Sonicare FlexCare to remove induced extrinsic tooth stains.
- Methodology** Twenty healthy adults aged 19-53 years participated in a forced-stain model study to assess the ability of the Sonicare FlexCare to mechanically remove extrinsically induced stain. The stain inducing slurry consisted of 0.12% chlorhexidine, double-strength instant tea, instant coffee and grape juice concentrate used over a period of three weeks. Subjects were known stain formers and included coffee, tea, tobacco and red-wine users. Tooth shade was assessed on at least 3 buccal surfaces of the anterior dentition. The evaluation of tooth shade and color change was assessed using the X-Rite ShadeVision® device, a digital imaging analysis tool. Vitapan® Classical shades were derived on the system, as were changes in color parameters using the CIE color equation, $\Delta E = ((\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2)^{1/2}$. Following the period of stain induction, subjects were dispensed a Sonicare FlexCare for use over a 6-week period, with safety and efficacy intervals assessed at two, three, and six weeks post product use. A low abrasive dentifrice was used throughout the study.
- Results** Sonicare FlexCare was proven to significantly reduce stain over a period of two, three and six weeks ($p < 0.0001$). Vitapan Classical shade improvements of at least two shades were seen at all time points. ΔE values greater than 3.5 were also observed at these intervals ($p < 0.0001$).
- Conclusion** Sonicare FlexCare was shown to be effective in removing commonly observed extrinsic stain-forming pigments from tooth surfaces. An improvement of two Vitapan Classical shades was seen following two, three and six weeks product use.



Before



After 2 weeks of use