

The Effect of Two Power Toothbrushes on Calculus and Stain

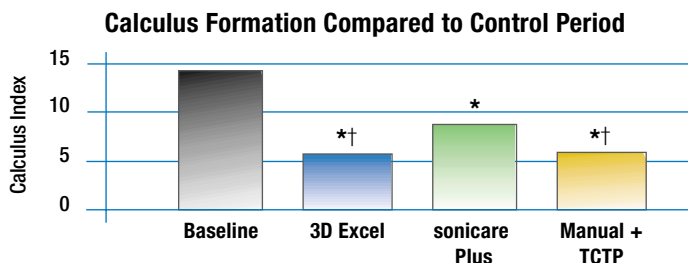
Sharma NC, Qaqish JG, Cugini MA, Warren PR. *J Dent Res* 2001; 80 (Spec. Iss): 548, Abstr. 171
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Abstract

Calculus increases the amount of dental plaque formed and therefore its control is an important part of daily oral hygiene procedures. Information on the ability of power toothbrushes to control calculus formation is rare and therefore this study investigated this aspect of efficacy, comparing the Braun Oral-B D17 and Sonicare power toothbrushes. This was a cross-over study involving a total of 81 subjects from a general population who used in a randomised sequence the D17 and Sonicare toothbrushes, and a manual brush with tartar control toothpaste, which served as a positive control. Following 9 weeks of manual brush use with a non-tartar control toothpaste, each test brush was used for a period of 9 weeks, after which subjects switched to the next brush in the sequence. Calculus was scored using the Volpe Manhold Calculus Index and stain using the Lobene Stain Index. Results demonstrated that all three brushes in the study were safe. All three products significantly reduced the levels of calculus from baseline. The rate of calculus formation was lowest in the D17 group (37% of baseline), followed by the manual brush with tartar control toothpaste (40%) and Sonicare (56%). Both the D17 and the manual brush were significantly more effective than Sonicare ($p < 0.001$). The D17 was also more effective at controlling stain formation than either Sonicare or the manual brush, the difference from Sonicare being statistically significant for all analyses ($p < 0.0001$). It is concluded that the D17 is significantly more effective in reducing the rate of calculus formation than the Sonicare toothbrush. The D17 is also as effective in this respect as a manual brush used with a tartar control toothpaste. This study was sponsored by Oral-B Laboratories, Boston, MA.

Results - Calculus

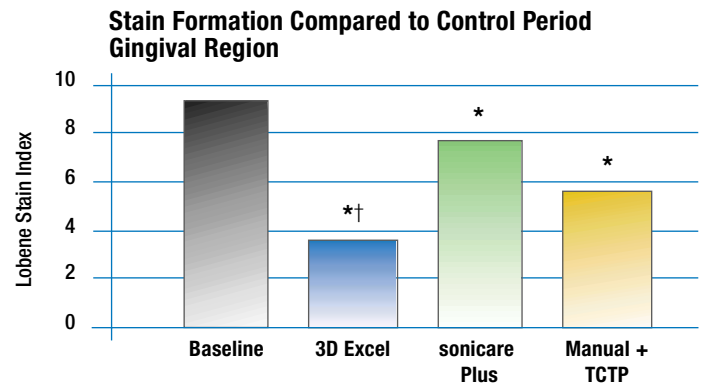
- All 3 treatments significantly inhibited calculus buildup compared to control rate of formation
- The rate of calculus buildup was lowest for D17 (3D Excel). 3D Excel significantly inhibited calculus buildup compared to sonicare Plus
- 3D Excel + non-tartar control toothpaste inhibited calculus buildup as well as a manual toothbrush with tartar control toothpaste



* significant differences from control period $p < 0.0001$
† significantly different from sonicare Plus

Results - Stain

- All 3 treatments significantly inhibited stain compared to control period
- The rate of stain buildup was lowest for 3D Excel
- 3D Excel significantly inhibited stain formation compared to sonicare Plus + non-tartar control and manual + tartar control toothpaste along the gingival area



* significant differences from control period $p < 0.0001$
† significantly different from sonicare Plus and Manual

Conclusions

- The Braun Oral-B D17 significantly inhibits the rate of calculus formation more than sonicare and as well as a manual toothbrush plus calculus control toothpaste
- The D17 significantly inhibits extrinsic stain formation at the gingival margin than either the sonicare toothbrush or a manual toothbrush plus calculus control toothpaste
- No adverse events or oral safety issues were reported over this 36 week study with any regimen