

Plaque Biofilm Disruption

in vitro study

Interproximal plaque biofilm removal of Sonicare FlexCare, National® Doltz and GC Prinia Slim sonic toothbrushes

Hix J, Aspiras M, Wei J, de Jager M. Interproximal Biofilm Removal Sonicare, Doltz and Prinia Sonic Toothbrushes. *J Dent Res* 87 (spec Iss B): 2044, 2008

Objective	To compare the ability of three sonic toothbrushes in removing interproximal plaque biofilm beyond the reach of the bristles <i>in vitro</i> .
Methodology	Using an <i>in vitro</i> typodont model containing saliva-based multispecies oral biofilms grown on hydroxyapatite discs, two studies were executed, comparing Sonicare FlexCare (with ProResults brush head) against either National Doltz EW1045 (with brush head EW0901) and GC Prinia Slim (handle MI-0002, brush head MI-1013). Discs with biofilms were located on interproximal sites of molar teeth at a distance of 2-4 mm from the bristles, and exposed to the fluid dynamic activity generated by the activated brushes. As control, an inactivated FlexCare "off" was used. Plaque removal efficacy was determined by enumeration of the percentage of viable bacteria removed from the interproximal discs as a result of brushing treatment.
Results	The activated Sonicare FlexCare toothbrush removed significantly more interproximal biofilm compared to either Doltz (73.1% vs 37.3%, $p=0.0001$), Prinia (73.1% vs 18.3%, $p<0.0001$) or the inactivated FlexCare "off" ($p<0.0001$).
Conclusion	Of the three sonic toothbrushes tested <i>in vitro</i> , the Sonicare FlexCare removed significantly more dental plaque biofilm up to 4 mm beyond the bristles than the National Doltz EW1045 and the GC Prinia Slim.

