

# Plaque Biofilm Disruption

*in vitro study*

## In vitro evaluation of interproximal biofilm removal with power toothbrushes

Aspiras M, Elliott N, Nelson R, Hix J, Johnson M, de Jager M. In vitro evaluation of interproximal biofilm removal with power toothbrushes. *Compend Contin Educ Dent.* 2007; 28 (suppl 1):10-14

Objective	To compare the removal of interproximal biofilm beyond the reach of the bristles of the Sonicare FlexCare and a rotating-oscillating power toothbrush, using an in vitro model.
Methodology	The ability of the Sonicare FlexCare and Oral-B Triumph® to remove biofilm without direct bristle contact was evaluated using a dental plaque model of a multispecies oral biofilm grown on hydroxyapatite discs. In a typodont model, the discs with plaque biofilm 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. An inactivated Sonicare FlexCare was used as a control. Plaque removal efficacy was determined by enumeration of the percentage of viable bacteria removed from the discs as a result of brushing.
Results	The active Sonicare FlexCare toothbrush removed a significantly higher percentage of biofilm bacteria when compared to both the inactive state ( $p < 0.0001$ ) and the active Oral-B Triumph toothbrush ( $p = 0.0001$ ). Moreover, with 73% plaque biofilm removal, the Sonicare FlexCare removed three times the amount of plaque biofilm when compared to the Oral-B Triumph, with 23% removal.
Conclusion	Sonicare FlexCare removed significantly more biofilm 2-4 mm beyond the reach of the bristles than the Oral-B Triumph.

Removal of biofilm bacteria from HA discs in an interproximal site model

