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### *Plaque Vitality Changes During Antimicrobial Use*

**H.C. VAN DER MEI**<sup>1</sup>, D. WHITE<sup>2</sup>, G.I. GEERTSEMA-DOORNBUSCH<sup>1</sup>, and H.J. BUSSCHER<sup>1</sup>

<sup>1</sup> University of Groningen, Netherlands

<sup>2</sup> P&G, Mason, OH, USA

The biofilm mode of growth in the oral cavity offers protection against chemical plaque control. The degree of protection offered by topical antimicrobials can be assessed by Confocal Scanning Laser Microscopy (CSLM). **Objectives:** The aim of this study is to assess effects of topical antimicrobials on the average viability of plaque in vivo. **Methods:** Subjects carried out standard oral hygiene with Crest® Regular dentifrice, Colgate® Total™ (triclosan antimicrobial) dentifrice or Listerine® (essential oil antimicrobial) dentifrice. After one week applications, the four dentition quadrants were sampled for plaque after refraining from all oral hygiene during 24h. Plaque was dispersed by sonication and immediately analyzed after BacLight® fluorescent staining with CSLM analysis (Busscher et al., Journal of Dental Research, 2003 Abstract 158). **Results:** During use of standard 'non-antimicrobial' dentifrice, sampled plaque vitality averaged 43%. Use of either triclosan or essential oil antimicrobial formulations produced reductions in plaque vitality to 25 and 26% (sig. vs. Crest Regular  $p < 0.001$ ) respectively. **Conclusions: These results substantiate that patient application of topical antimicrobial formulations produce average reductions in plaque viability supporting therapeutic advantages of these ingredients and formulations. These results also support the modeling of antimicrobial activity with plaque vitality assessments in this panel design.**