

**Oral biofilm activity, bacterial culture testing and caries experience in children.**

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**Aim:** To evaluate a chair side caries assessment protocol utilising an oral health questionnaire, oral biofilm activity, culture testing and routine dental examination in 5-12 year old children at two regional schools.

**Methods:** Permission was obtained from regional hospital ethics committees and informed consent was given by a parent for each volunteer child participant. Parents were contacted by telephone and completed an interviewer assisted oral health questionnaire regarding current and previous child oral health behaviours. Oral biofilm was sampled from the labial and buccal surface of a maxillary incisor and the lingual surface of the mandibular incisor teeth using a sterile cotton swab. Biofilm activity was measured directly in relative light units (0-9999) using an adenosine triphosphate (ATP) bioluminescence meter. Mutans streptococci (MS) counts were recorded after 48 hours incubation by counting the highest density of colony forming units (Low, Medium and High). Each child's dentition was examined clinically and radiographically and their current caries experience recorded using dmfs and DMFS indices. Bivariate correlation of selected oral health behavioural variables and caries indices were performed using a Pearson analysis.

**Results:** Baseline caries experience was significantly correlated ( $r=0.12$ ) with oral biofilm activity in 369 children examined to date ( $p=0.02$ ). MS counts and current oral health behaviours were not significantly associated with caries indices.

**Conclusion:** Oral biofilm activity rather than oral bacterial counts is significantly associated with baseline caries indices in this child population. This study was supported by a Queensland government clinical research grant and Oral Biotechnologies, USA.