

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

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Introduction: 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.

Patients and Methods: Permission was obtained from regional hospital and school ethics committees and informed consent was given by a parent or guardian for each volunteer child participant. Parents were interviewed 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. Bacterial 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. Cross tabulations of selected categorical variables and grouped caries indices were performed using a Pearson Chi Square analysis.

Results: Baseline caries experience was significantly associated with oral biofilm activity (RLU <9000, 9000-9499, >9500) in 292 children examined to date (p=0.03). Bacterial counts and oral health behaviours were not significantly associated with caries indices.

Conclusions: Oral biofilm activity rather than bacterial counts is significantly prognostic of baseline caries indices in this school child population.

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