

0491 Diagnosis of Developmental Defects of Enamel Made from a Direct Clinical Examination and from Photographs

[H.M. WONG](#), C. ZHENG, E.C.M. LO, and N.M. KING, The University of Hong Kong, Hong Kong SAR, China

Objectives: The aim of the study was to examine the level of agreement of diagnosis of enamel defects made of a direct clinical examination and from photographs.

Methods: A series of three intra-oral photographs (one central and two lateral views) at 1:1/2 magnification were taken of 257 Chinese children aged 11 to 12 years using a film-based Nikon FM2 camera and a Fujifilm FinePix S1 pro digital camera both fitted with Medical-NIKKOR 120mm lens. The buccal surfaces of the twelve maxillary and mandibular anterior teeth were examined clinically and photographically for enamel defects which, if present, were recorded using the modified FDI (DDE) Index. Two observers agreed a score for each 1/3 of the tooth surface. For the clinical examination, the children were examined with a fiber-optic examination light and a probe. For the photographic examination, each "3-view" slide set taken of each child with the conventional camera were projected simultaneously onto white screens and viewed in a darkened room; while the digital photographs were directly viewed on the computer screen.

Results: The levels of agreement between the diagnosis made from the clinical examination and digital photographs were in the range of "substantial" to "almost perfect" ($k=0.78$ to 0.92), which were as good as the agreement between the clinical examination and the assessments of conventional photographic slides ($k=0.66$ to 0.91). No significant differences were noted in the scoring for each type of enamel defect except that the category "diffuse lines and patchy" was scored more frequently from the digital photographs than clinically for the maxillary left central incisors ($p=0.048$).

Conclusion: The findings suggest that a series of three digital photographs taken using a high-resolution digital camera can provide records of sufficient quality to study developmental defects of enamel on the buccal surfaces of anterior teeth.

[Seq #61 - Sealants, Caries, Bacterial Transmission, Behaviors](#)

11:00 AM-12:15 PM, Thursday, 26 June 2003 Svenska Massan Exhibition Hall B

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