The third national conference on dental hygiene research in Sweden

The third national conference on dental hygiene in Sweden was held at Dalarna University Department of Health and Social Sciences in March 2004. Agneta Ekman, who is the Minister of Hand Welfare in Sweden, gave the opening speech. She emphasized the importance of dental hygiene research and was impressed about the progress the dental hygienists profession has made in Sweden. She expressed her support for further development and encouraged the profession to organize future research conferences and even make them better known to the dental profession.

Four doctoral students and three doctors presented their research. The audience participated lively in the discussions. The concluding remarks were made by Yvonne Nyblom who is the Vice President in the Swedish Dental Hygienists Association and a delegate from Sweden in IFDH.

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Enclosed you will find some of the abstracts:

Infrared fluorescence measurements – The influence of calibration frequency on longitudinal *in vitro* measurements with KaVo DIAGNOdent™

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With today's widespread use of fluoride, the nature of cavities has changed. Harder, and therefore more resistant enamel can many times conceal subsurface decay and the caries disease progresses, in many cases, for a prolonged period with low activity and slow progression. The change in pattern of the caries disease calls for a shift in treatment philosophy; the original maxim of 'extension for prevention' has been eschewed for a minimal intervention approach, although this approach is only effective if caries is diagnosed at an early stage. Incorrect diagnosis results in incorrect treatment decisions. In the current age of lower overall prevalence of decay and slow disease progression, the potential risk of unnecessary restorations is greater than the risk of missing early decay. As an adjunct to conventional caries diagnostic methods such as visual inspection and bitewing radiography, a need for objective quantitative detection methods is of high importance.

KaVo DIAGNOdent™ (KaVo Dental, Biberach, Germany) is a laser fluorescence device developed for caries detection and quantification as an adjunct to visual inspection and radiographic examination. The aim of this *in vitro* study was to investigate the stability of the instrument for longitudinal measurements. The study was carried out in two subsequent parts where measurements were performed in two series, with and without calibration. The material in Part I of the study comprised 30 extracted teeth with various stages of carious lesions measured with one DIAGNOdent™ device. In Part II, two devices were used to determine their unanimity and measurements were performed on six fluorescence standards in order to minimize false positive readings.

The first series in Part I, with only one initial calibration, showed a significant change over time: a linear trend with drifting towards lower readings ($P < 0.001$). In the second series, with frequent calibrations, no significant linear trend over time could be demonstrated ($P = 0.09$). Clinically relevant differences in mean value between the series of measurements were seen over time (without frequent calibration, 7.64; with frequent calibration 8.57). The mean value of readings from the series with frequent calibrations was approximately 1 unit higher throughout the study, and single observations were 1–6 units higher.

Results from Part II showed a significant systematic over-time difference between the factor 'without' and 'with' calibration ($P = 0.0023$) independent of which device that was used ($P = 0.67$). There was no significant difference between the devices, DDI and DDII ($P = 0.14$). The interaction, time × calibration, was significant ($P < 0.000$) with stable readings over time in the period 'with calibration', while the readings in the period 'without calibration' was drifting towards lower readings from day 1 and forward.