

Type 2 DM patients compared to 656 age- and sex-matched metabolically healthy controls. DM was characterised by postprandial blood glucose, urinary glucose, HBA_{1c}, duration, age at onset, type and level of DM. Caries experience was assessed by the DMF-T index (WHO, 1987). Root-surface variables were determined according to DePaola et al. [Gerodontology 1989;1:3–8] and data were analysed by ANOVA and t-test ($\alpha = 0.05$). Intact teeth were found in 1% of diabetic patients and 1.43% of controls. Diabetic patients had slightly higher mean DMF-T score ($p < 0.01$), fewer decayed ($p < 0.001$), more filled teeth ($p < 0.001$) and, over age 31, more missing teeth than the controls. In properly-controlled diabetic patients DMF-T ($p < 0.001$) and its components were lower ($p < 0.001$) than in patients with poorly-controlled DM. There was no correlation between DMF-T or its components and the type and duration of DM. But the number of extracted teeth over 45 years varied according to the duration of DM ($p < 0.01$). Early-onset DM was associated with significantly higher DMF-T ($p < 0.001$). Above age 30 the highest number of extracted teeth was seen among patients treated with insulin ($p < 0.01$). Root-surface caries was higher in DM patients than in controls ($p < 0.001$), in Type 2 diabetic patients than in Type 1 ($p < 0.001$), and also in early-onset DM ($p < 0.001$). The number of edentulous persons was higher (11.9%) in people with DM, than in the controls (2.25%). They also tended to become toothless about ten years earlier: around age 25. It was concluded that poor glycemic control, long duration and early onset of diabetes may increase the risk of caries.

21

Diabetes mellitus, Toothbrush Abrasion and the Dental Pulp

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Toothbrush abrasion is more frequent in diabetic patients, and diabetic people are particularly prone to bacterial or opportunistic infections. Because the dental pulp has limited or no collateral circulation, it is more prone to infection. The purpose of this study was to determine the presence and distribution of alkaline phosphatase (AP) in clinically healthy and diseased (pulpitis because of caries, toothbrush abrasion without caries) human dental pulp. The material consisted of incisors or canines, with and without tooth wear, which had been extracted because of periodontitis from patients with Type 1 diabetes mellitus (age 20–39, duration of DM 15–24 years), and incisors and premolars extracted because of reversible pulpitis (due to caries) and periodontitis without caries. These pulps were compared with metabolically healthy individuals with dental wear without caries, and control sound premolar teeth, extracted for orthodontic reasons. In every group there were 50 teeth. Toothbrush abrasion was scored according to Eccles [J Prost Dent 1979;42:649] and severity of tissue loss according to Lussi et al. [Schweiz Monatsschr Zahnmed 1993;103:276] and Silness et al. [Acta Odontol Scand 1993;51:15]. The pulps were removed and the presence and distribution of AP determined in unfixed, fresh-frozen histological sections. In DM with periodontitis increased AP

activity was found in the odontoblast layer and in the connective tissue around the vascular elements. Like any other inflammation, pulpitis was also associated with increased alkaline phosphatase activity. A decreased activity was found in tooth-brush abrasion. In conclusion, AP activity generally increased in progressive pulp reactions, while it decreased in regressive changes of pulp.

22

Onset of Active Caries Lesions in First Permanent Molars

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The study investigated the onset of active caries lesions in first permanent molars in a sample of Belgian children. In the Brussels region, children attending the 1st grade in 19 primary schools were sampled ($n = 473$, median age = 6). Forty-seven percent of the children were free from cavitated lesions in their primary dentition and presented a moderate caries experience with dmft scores of 2.39 ± 0.14 and dmfs scores of 5.08 ± 0.35 . The method of diagnosis applied to the identification of caries active lesions (non-cavitated and cavitated) was thorough visual examination. The children's teeth were professionally cleaned and dried before the clinical examination. First permanent molars were classified as partially or fully erupted. Intra-examiner reliability of caries diagnosis in 10% of the sample showed a kappa coefficient value of 0.96. A total of 361 children had ≥ 1 erupted molar (29.6% fully erupted and 46.7% partially erupted). Eighty-two percent of children were free from cavitated active lesions, but only 40% were free from both cavitated and non-cavitated active lesions. DFT score $\pm$ SE was 1.39 ± 0.70 and DFS score was 2.06 ± 0.13 . The mean numbers of teeth and surfaces with active lesions in fully erupted molars were significantly lower than in erupting teeth ($p \leq 0.01$, t test). Non-cavitated active lesions were identified in 41.5% of the erupted surfaces followed by cavitated lesions in 10.5%. The results indicate that a thorough visual examination of erupting teeth may be an important tool for early caries diagnosis and further caries control in individuals.

23

Analysis of QLF and ICDAS Measurements in a Clinical Trial

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Traditionally, DMFS scores have been used for caries assessment in clinical trials, with scores calculated for each subject and averaged within a group to perform comparisons. With the devel-