

ABSTRACTS from 3rd EADPH Congress

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The third congress of the European Association of Dental Public Health, EADPH, was held in Strasbourg, France on September 8th and 9th. The Co-president of the congress was Professor Pierre-Michel Cahen. The abstracts were refereed by the scientific committee consisting of :

- Professor Gert-Jan Truin (editor), Nijmegen, The Netherlands
- Professor Annerose Borutta, Erfurt, Germany
- Dr. Lucien Brisset, Reims, France
- Professor Pierre-Michel Cahen, Strasbourg, France
- Dr. Cynthia Pine (president), Dundee, Scotland
- Dr. Roberto Ferro (vice president), Cittadella, Italy
- Dr. Anne-Marie Obry-Musset, Strasbourg, France
- Professor Klaus Pieper, Marburg, Germany.

Abstracts

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| 1 | Title | A survey of health and oral health spending in 17 European countries in 1996 |
| | Author | K A Eaton* and E Widström. Eastman Dental Institute for Oral Health Care Sciences, London UK |

This survey aimed to ascertain health and oral health spending in 17 countries within the European Economic Area in 1996. Data for each country's total population gross national product (GNP) and percentage GNP spent on health (excluding social costs) were obtained from the EOCED Health DataBase. A questionnaire was distributed to Members of the Council of European Chief Dental Officers which asked for the percentage of GNP spent on total (public plus private) oral health care. Actual health care spend per capita was calculated. The percentage spent on health care ranged from 6.8% in Greece to 10.5 % in Germany (mean 8.0%) and per capita spent on health care from \$ US 867 in Portugal to \$ US 3003 in Germany (mean \$ US 1999). No data were reported for percentage of GNP spent on oral health in 3 countries. It was unclear how much was spent on oral health care spending from 0.2% in Luxembourg to 0.9 in Sweden. It was concluded that there is a need to develop reliable methodologies to assess total oral healthcare spending in a standardised manner throughout Europe.

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| 2 | Title | Evaluation of a new dental benefit plan for children conducted in Auvergne (France) since 1992 |
| | Author | S Tubert-Jeannin*, A Morel-Papernot, H Goussaud, A Woda. U.F.R. d'odontologie de Clermont-Ferrand, France |

A French sick-fund is testing a new dental benefit plan for children providing an incentive to

develop office-based preventive activities. The programme that started in 1992 concerns all the 4-year-old children whose parents are self-employed workers in a single French region (Auvergne). Participants undergo an annual examination by the dentist of their choice until their fifteenth birthday. If the child is seen every year, all services related to dental caries (preventive and restorative) are provided free of charge. An ongoing evaluation of the programme was undertaken to assess its success. Results after 6 years indicate that the initial participation rate for 4-year-old children increased from 49.1% in 1992 to 61.4% in 1998. For the children enrolled in the plan in 1992, 46.8% of the initial participating group were still included in the program in 1998. The proportion of children needing restorative care varied from 24% at 4–5 years to 43.7% at 9–10 years and each year, more than 85% of those children received restorative treatments. Dentists declared having recommended a fluoride supplement to about 75% of the children but they rarely used preventive treatments such as sealants. Advice concerning fluoridated salt remained low (20%). Dentists preferred to describe fluoride tablets (48.8% at 4–5 years and 22% at 9 years). Fluoridated toothpastes were recommended to 33.6% of 4-year-old children and to 53% of 9-year-old children. It seems that the plan did not provide an incentive for dentists to develop office-based preventive activities.

3	<p>Title Eruption pattern of permanent teeth in a transversal sample of children from Strasbourg</p> <p>Author L Bigeard* and MA Obry-Musset. Faculté de Chirurgie, Strasbourg, France</p>
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Current standards for the timing and sequence of tooth eruption are generally based on the comprehensive analysis of Logan and Kronfeld (1933) and Hurme (1949). Since, several authors observed variations in these eruption patterns due to ethnic origin, gender, temporal variation, socio-economic condition or fluoride concentration. The aim of the study was to provide recent data about tooth eruption chronology in France and to compare them with previous studies. An epidemiological study was conducted in 1997 in Strasbourg (France) on a representative sample of 1977 children aged 6 to 15 years (982 girls and 985 boys, sampling rate 1/16). According to Hurme's criteria the mean eruption age of a tooth was determined as the age at which the tooth was present in 70% of the children of the sample. Values corresponding to the age at which the tooth was present in 50% and 90% of the children were considered as the limit of normality values. Results showed a great variation in the ages of tooth eruption. The discrepancy between the limit values ranging from 9 months for the central incisors to 15 months for the lateral incisors eruption. The mean age of permanent teeth eruption was earlier in girls, excepted for the canine, the upper first molar and the lower second incisor. The sequences of eruption that the central lower incisor erupted before the upper first molar in both boys and girls and before the lower first molar in girls. The upper canine erupted at the same time as the first premolar in boys and after the first premolar in girls. Compared to Hurme's study, a general retardation of the eruption age was observed, excepted for the upper central incisors in the two sexes, the lower second molar in boys and the lower first premolar in girls. The delay in tooth eruption was in line with previous reports from Europe and USA for fluoridated areas, and concerned in particular the canines and premolars. The principle reasons of a general retardation of tooth eruption need to be analysed taking into consideration the fluoride intake, the oral health improvement but also the general growth and maturation of the children.

4	<p>Title Curriculum structure in South African dental schools with regard to child abuse and neglect</p> <p>Author S Naidoo. University of Stellenbosch, Cape Town, South Africa</p>
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Health and Social Services seem unable to deal with the increasing number of reports on child abuse and neglect. Most cases go undiagnosed and unreported. Although reporting by health care workers has been mandatory since 1984, the law does not seem to be enforced. Absence of a co-ordinated record keeping system and lack of a clear definition in terms of the Child Care Act (1983) makes it difficult to monitor child abuse. Studies have shown that as many as 50–75% of all cases of child abuse involve trauma to the mouth, face and head. The aim of the present study was to determine the extent the five South African dental schools have incorporated the subject of child abuse into their undergraduate curriculum. A 12-item questionnaire was administered to the Deans, Heads of Paedodontic or Oral Medicine Departments of the dental schools. The results show that comprehensive child abuse and neglect information is absent in all the South African dental school curricula. Those schools dealing with it offer it as a single lecture. The seriousness of child abuse and the need for increased reporting from dental personnel is acknowledged. All recognised the need to increase the time and curricula hours spent on this topic. When asked whether 'a full module on child abuse and neglect needs to be incorporated into the curriculum', all participants said yes. Attempts to address the lack of a comprehensive child abuse module in the under-graduate curricula should focus on increased awareness, training in diagnosis, reporting. Other studies have shown that students exposed to the effects of child abuse in their undergraduate curriculum are more likely to properly diagnose and report suspected cases. Dental schools need to evaluate their curricula with regard to incorporating a comprehensive child abuse and neglect module to ensure that graduates are receiving adequate training to diagnose and report suspected cases.

5 Title Dental risk factors for burning mouth sensations (BMS)
 Author Ch Hirsch*, M John, A Zwijnenburg¹, T Reiber¹, Martin Luther
 University Halle, Halle/S., ¹University Leipzig, Germany

Burning mouth sensations (BMS, burning sensations on lips and tongue for no apparent reason) are chronic orofacial pain conditions with a prevalence in adults between 0.7% (Lipton *et al.*, 1993) and 7.5% (Tammiala-Salonen *et al.*, 1993). The etiology is multifactorial and the pain condition is characterised more as a chronic illness than as a specific disease with structural changes of oral tissues. Dental and non-dental factors are assumed to play a role in the etiology (van der Waal, 1992). The aim of this study was compare the oral situation of (non-) BMS subjects in terms of kind of dentures, fillings and various metals in the mouth. Subjects were 22 BMS pain patients (age: 20–60 years, mean: 47.9 ± 11.4 years; 50% female) of a random sample population (n=620) of the urban area of Halle/S. and Leipzig. BMS during the past 6 months were diagnosed using the NHIS-questionnaire. Controls were 22 subjects without BMS of the same random sample matched by age and gender. Prevalence of BMS was 3.5%. Removable dentures were found in 32% of BMS patients and in 19% of controls. 75% of BMS cases had amalgam fillings, 86% in the control group. 59% (BMS) and 57% (controls) had different kinds of metal in the mouth. There were no significant differences between groups (chi-square: $P > 0.05$). These findings indicate that dental factors don't play an important role in the etiology of BMS.

This study was financially supported by Deutsche Akademie der Naturforscher Leopoldina, Grant LPD96 (BMBF), and by Forschungsverbund Public Health Saxony, Grant 01EG9532/0

Title Effect on interdental mutans streptococci in subjects with fixed orthodontic appliances during 6 months of daily toothbrushing with

6
fluoridated toothpastes with and without antibacterial agents
Author K Magnusson*, H Andersson, LG Petersson. Department of Preventive Dentistry, Medical and Dental Health Centre, Halmstad, Sweden

Subjects undergoing orthodontic treatment with fixed appliances are exposed to higher bacterial plaque accumulation and subsequently higher risk for dental caries. The aim of this study was to evaluate the levels of cariogenic mutans streptococci (MS) at interdental sites after daily brushing with "blend-a-med" F-toothpastes (0.0145% F) without and with antibacterial agents. 46 healthy children (12–14 years) with MS in saliva and interdental sites (n=184 plaque sites) were sampled in 3 groups. Group 1 (n=60 sites) were receiving a F-toothpaste (0,145%F); Group 2 (n=64 sites) a F-toothpaste with 0,7% zinclactate and Group 3 (n=60 sites) a F-toothpaste with 0,3% triclosan. The subjects in all three groups were followed for 6 months after daily use of the different toothpastes, respectively. The MS levels at interdental sites were enumerated by using a modified Strip mutans technique. After one and three months, no statistical significant changes of MS could be detected interdentally in the different groups. However, after 6 months, the levels of MS were statistically reduced ($P<0.05$) among the subjects brushing with an F-toothpaste containing triclosan (Group 3). To conclude, subjects undergoing orthodontic treatment with an increased caries risk should be recommended to use F-toothpaste containing antibacterial agent such as triclosan.

Title Dental knowledge and oral health behaviour of mothers and schoolteachers in Poland
7
Author PE Petersen(1), M Wierzbicka(2), F Szatka(3), E Dybizbariski*(2), M Zawadzinski(2)2.
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2Dept. Conservative Dentistry, Medical University of Warsaw,
3Dept. Hygiene and Epidemiology, Medical University of Łódź, Poland

The aim of the study was to describe the level of dental knowledge and behaviour of mothers of 12 year olds, and knowledge and involvement in oral health education among teachers. The total of 866 mothers and 471 teachers responded to self-administered questionnaires. The majority of mothers and teachers acknowledged the role of bacteria and or sugar in caries. Among mothers, sugar was conceived mainly in terms of sweets, whereas teachers were also aware of the harmfulness of "hidden" sugar. 83% of mothers and 90% of teachers agreed that toothbrushing prevents caries, but only 58% of mothers and 67% of teachers recognised the need to help younger children with brushing. Toothbrushing, at least twice a day, was reported by 64% of the children and 91% used fluoride toothpaste. About half of mothers and teachers had received dental health information from a dentist, and about half from their mothers. 83% of mother reported brushing their teeth at least once daily, and 76% had been to the dentist within the last year. Oral health habits varied by level of education. Most teachers agreed that they should teach children about oral health and nearly half had done so during the last year. Reasons for not doing any instruction included insufficient capacities within health education, and the opinion that teaching oral health is better left to health professionals. To conclude, the application of modern approaches in school-based health education would seem relevant to the continuous improvement of oral health of children in Poland.

8
Title Caries prevalence and treatment needs of six- to seven-year-old children in Germany in the years 1994–95 and 1997
Author K Pieper. Department of Pediatric and Community Dentistry, Dental School, University of Marburg, Germany

A few years ago, the federal legislature in Germany passed a law requiring the national health insurance system to pay for preventive measures which were then being introduced in schools. Most federal states introduced examinations of representative samples of children to control the effectiveness of these measures. For this study, clinical examinations were carried out on representative samples of six- to seven-year-old children from twelve different states, applying the WHO System for caries diagnosis. The samples were selected by a two-stage random procedure and consisted of 21600 (1994–95) and 23418 (1997) children. All examinations were performed by calibrated dentists. For the statistical analysis a special programme for dental surveys (GPRZ) was used. Between 19.6 and 45.9% of the children in the various federal states had a sound permanent dentition in 1994–95, while in 1997 this percentage was between 30.2 and 53.3%. Mean dmft values varied between 2.4 and 4 in 1994–95, while in 1997 dmft values ranged between 1.9 and 3.0. A high proportion of untreated cavities in deciduous teeth was observed (range: 43.9 to 68.7%). The decline in caries from 1994 to 1997 ranged from 8.0 to 24.0% and some federal states even managed to attain the WHO criteria for the year 2000 three years ahead of time.

- 9 Title Monitoring clinicians' decisions in a school dental service
 Author P J Riordan. Perth Dental Hospital & Community Dental Services, Perth, Western Australia

Management of health services attempts to guide organisations towards increased effectiveness and efficiency. Discrepancies in diagnostic standards and treatment choices are wasteful. The School Dental Service in Western Australia is a large (>250 000 patients) dental care provider. It is organised into "Areas," comprising 8–12 clinics and clinical operators (dental therapists), who provide most of the treatment. Each Area is supervised by a dental officer. Two sets of information are available for analysis. Epidemiological monitoring provides, for a sample (about 10%) of all the patients, caries (d and D) data for all age levels 5–16 years old. A separate data base records the clinical activities of each operator, including counts of different types of restoration provided for deciduous and permanent teeth. The purpose of this exercise was to compare for 1993–1997 reported caries levels in deciduous and permanent teeth with the actual numbers of restorations provided. The unit of analysis was the Area (this is the smallest identifiable unit in the epidemiological data). The results indicated that there was a very consistent relationship between diagnosed lesions and restorations placed in most Areas, but that in one Area many more restorations were placed than the service-wide average. After 1996, as a result of determined management interventions with staff in that area, the treatment profile of that Area has approached those of the other Areas. This example illustrates the usefulness of good management and health information systems.

- 10 Title An enquiry into attitudes and practices of young Muslim Asian families in a fluoridated area
 Author SA Williams(1)*, A Malik1, Y Thomas(2), R Hamburger(3).
 1Leeds University,
 2North Birmingham NHS Trust,
 3Birmingham Health Authority, UK

Birmingham, UK, has fluoridated water and lower caries experience nationally, but higher 'dmft' values have been reported among 5 year olds from Saltley District, compared with other deprived localities in the city. Many Muslim Asian families reside there. This study explored diet and related factors which could contribute to such differences. Trained bi-lingual female interviewers conducted home visits on a stratified random sample of 100 mothers of pre-school children aged 2–4 years (50 Mirpuri (Pakistan), 50 Bangladeshi), selected via the Child Health

Register. Mothers were ambivalent about sugar use, thinking it less harmful for young children than for older people. Family sugar consumption was pervasive, 83% added it to family drinks, 91% to tea; diabetics seen as the exception. 78% gave a feeding bottle to the child, 29% sweetening the milk, one third providing the bottle for sleeping. Bottles were given for comfort, convenience and nourishment. 70% of children snacked on sweets on demand. A higher proportion of Bangladeshis (a) gave 'Ribena' in the bottle compared with Mirpuris (44% v. 10%) and (b) all the family consumed carbonated drinks (60% v. 30%). Some mothers thought children would have no dental problems before 5 years. Half reported receiving dental advice; e.g. oral hygiene and visiting the dentist, but no-one mentioned fluorides. Health visitors were seen as important, particularly by Bangladeshis. To conclude, many habits and practices found here will contribute to poorer oral health in young children, even in a fluoridated area. Community-based health promotion approaches plus appropriate training for health professionals are recommended.

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| Title | Prevalence of <i>Actinobacillus Actionomycetemcomitans</i> (Aac), <i>Prevotella Intermedia</i> (Pi) and <i>Prophyromonas Gingivalis</i> (Pg) in adult periodontitis before and after treatment using the multiplex Pcr method |
| Author | C Larrinnaga*, A Calvo, M Barranquero, J Goiriena, A Anta, E Ramila. Department of Stomatology, School of Dentistry, University of the Basque Country, Leioa, Spain |

The aim of the study was to investigate the prevalence of three suspected pathogens in chronic adult periodontitis patients. 40 persons aged 29–64 years (11 male, 29 female) with chronic adult periodontitis participated in the study. Probing depths, clinical attachment loss, bleeding on probing, mobility and subgingival plaque samples in four sites were measured at baseline. The plaque samples, analysed using the multiplex PCR technique, were collected before and one month after periodontal therapy that included oral hygiene instruction, scaling and root planing. One month after having therapy, patients were re-examined. The reductions in the prevalence of these pathogens observed after therapy were: 52.5%–14% for Aac, 86.2%–53.6% for Pg. and 87%–46.34% for Pi. Results show that the PCR method is a sensible method for the detection of this pathogens and periodontal therapy is effective to reduce periodontopathic microbiota.

- 12**
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| Title | Epidemiological study of oral health mentally handicapped patients |
| Author | M Barranquero*, FJ Goiriena, E Ramila, A Anta, C Larrinnaga, A Calvo. Department of Stomatology, Faculty of Medicine and Odontology; University of the Basque Country, Leioa, Spain |

A randomised sample consisting of 226 mentally handicapped adult patients aged 17–52 yrs (mean age 33.6 (8.9 years) was examined, from which 52.2% had a slight and 47.8% a moderate disorder. The etiology was: 13.7% environmental, 25.6% genetical and 60.7% unknown. The following kinds of disorders were recorded: macroglossia, 48.7% (predominating in those with unknown etiology 55.4%, and in those with highest mental handicap 63.6%); fissured tongue 33.6% (48.3% in those with genetical etiology); oral breathers, 47.8%; enlarged size of lip size, 38.1%; hypotonia of the muscles, 65.5%; general microdontia, 5.3% and located microdontia, 9.7%. Diastema (38.1%) and dental crowding (40.3%) were usually located in anteroposterior zone. The DMFT was 15.8 (6.1. 58.8% of the sample needed upper prosthesis, and 61.1% lower prosthesis. The prevalence of Angle's I was 49.6%. 92.9% had some form of periodontal diseases. In conclusion: the group examined had a low level of oral care, a high prevalence of oral pathology and is in need of proper assistance including preventive oral care.

13 Title The caries predictive power of findings based on clinical examination and different salivary tests
Author HW Hausen*, L Seppä, S Kärkkäinen. Institute of Dentistry, University of Oulu, Oulu, Finland

Studies on the ability of different risk markers to predict future caries increment often suffer from the fact that high-risk individuals are likely to get more intensive prevention during the follow-up. To avoid this pitfall we studied the caries predictive power of findings based on clinical examination and different salivary tests among teenagers who received uniform prevention. Caries risk was first assessed in 1465 12–13-year-olds using a set of six criteria which included combinations of the number of decayed tooth surfaces, salivary flow rate, salivary buffer capacity, salivary mutans streptococci and lactobacilli scores, and the estimated need of fillings after 1 year according to judgement of dentist. The children who were regarded as having a high risk were randomised into two groups. Half of them were offered intensive prevention, and they were excluded from the current analyses. The rest (n=168) were given the same basic prevention that was given to low-risk children (counselling, one F-varnish application/year). A random sample of the low-risk children (n=212) was followed up for the same three-year period as the high-risk children. The original set of criteria for high risk had a 53% sensitivity and 78% specificity in identifying the individuals who developed at least one new lesion during the follow-up. By using baseline DMFS only (0 vs.>0) the sensitivity would have been 59% and specificity 82%. The results confirm the earlier findings that past caries experience is a strong predictor of future caries increment among teenagers and that salivary tests have little caries predictive power in this group.

14 Title Oral mucosa pathology in irradiated patients
Author FJ Goirienea*, M Barranquero, P Gutierrez, G Rodriguez Baciero. Department of Stomatology, Faculty of Medicine and Odontology, University of the Basque Country, Leioa, Spain

A randomised sample consisting of 182 patients with oral cancer completed a questionnaire about risk factors. The sample consisted of 79.1% male and 20.9% female (aged 27–92 yrs). Radiotherapy given to the patients was: 78% transcutanea, 19.8% interstitial and 2.2% mixed. In the first month of therapy 94% (72.6% mucositis) and 21.4% had mucositis and infection; during the first year in 25.3% (18.1% mucositis) and 2.8% of the patients mucositis and infection was found; after the first year: 7.1% of the subjects had mucosa damage (1.1% mucositis). Infections without mucositis was found in 4.4% of the patients during the first year and in 2.2% after the first year of radiotherapy. The prevalence of candidas was the predominant reason for the infections in 71.8% of the cases during the first month of therapy and in 64.7% of the cases during the first year. Relationship between these pathologies, sickness phase and irradiation dose was obtained, and it was observed that the best results were found in those patients which had steadily followed prophylactic treatments.

15 Title Prevalence, extent and severity of periodontal disease in a Portuguese population
Author J Frias-Bulhosa. High Institute Of Health Sciences – North, Department of Child's Oral Health and Prevention. 4580 Gandra, Paredes – Portugal

This study reports about the periodontal status found in a sample of 412 individuals of 12 years

of age and older. Measurements of gingival and plaque index were performed on 4 sites for all fully erupted teeth. Periodontal pocket depth and gingival recession were collected from 4 sites at Ramfjord teeth with a periodontal probe. The prevalence found showed that 92.8% of the individuals experienced some clinical loss of attachment (1mm). The severity of the periodontal disease based on the cut-off points used were 32% (>3mm), and only 6.9 % exhibited severe periodontal diseases (6mm). The periodontal health of women was worse than that of man, particularly in the older age groups (higher than 50 years old). According to other studies, severe periodontal diseases was found in a minority of individuals.

16 Title The distribution of caries risk frequency at the index age groups in Turkey
 Author I Oktay*, G Bermek Saydam, F Doan, M Fienocak. Istanbul University, Turkey

The aim of the study was to determine the distribution of low, medium, high and very high caries risk frequencies (percentages) at the index age groups of 5–6, 12, 15–19 and 30–34 years in urban and rural areas of Turkey. The DMFT/dmft data of the index age groups, comprising 1886 people, were selected from the results of the National Oral Health Pathfinder Survey and analysed. The sample group was determined using a stratified proportional random sampling strategy from different cities and related rural areas. The degree of different caries risks in each of the groups were defined according to the normal distribution of decayed, missed and filled teeth. While the percentage of caries free children was only 18.4% at 5–6 years of age, 37% of the DMFT+dmft occurred in 15 % of these children. At the age of 12 years old, 12.2.% of the children were caries free and 8% of them were in very high-risk group having 18% of the DMFT. In the age group of 15–19 yrs 10.7% had no caries and 7% of the very high-risk group had 19% of the DMFT. The prevalence of caries free subjects in the last group was 1.9% and 12% (very high-risk group) constituted 20% of the DMFT score. The percentages of caries free and low caries risk groups were higher in the urban areas. The percentages of high and very high-risk groups were lower in urban than rural areas. To conclude, it is suggested that the results of this study may be useful in planning and maintaining preventive strategies of oral health promotion programs at a nationwide basis and they might be regarded in the national oral health policy development.

17 Title Prevalence of dental caries in children in Sangerhausen district (Germany) over a 10 year period
 Author S Liecke*, C Hirsch, M Waurick. Martin Luther University Halle, Department of Pediatric Dentistry, Harz 42–44, 06108 Halle/S., Germany

The caries experience in 6- to 7-year-old children (1st graders) from Sangerhausen district (Germany) in relation to the number of employees in the Community Dental Service (CDS) was studied over a 10 year period (1988–1993–1998). In 1988 a random sample of 250 children was examined according to WHO (1987) whilst in 1993 and 1998, the examination included the entire population of 1ST graders, i.e. 1010 and 769 children respectively. In 1988, the CDS consisted of 9 dentists and 8 dental nurses, providing dental care to children. Between 1990 and 1993, a new system was introduced based on a cooperation between the CDS and private dentists. The system contained group and individual preventive programs. In 1998, 1 dentist and 2 dental nurses were employed in CDS carrying out dental examinations and group oral health programs, whilst 72 dentists worked in private practice. The dmft index increased from 2.5 in 1988 to 4.1 in 1993, whilst the value was 3.6 in 1998 (ANOVA: $P<0.001$). The DMFT index was 0.2 in 1988, 0.5 in 1993 and 0.2 in 1998 (ANOVA: $P<0.05$). The percentages of

caries free children decreased from 23% in 1988 to 17% in 1993, whilst the prevalence was 26% in 1998. In 1988 23% of the children were classified as high risk children (dmft>4) in 1988, these percentages were 45% in 1993, and 39% in 1998, respectively (chi-square: $P<0.001$). Over the 10 year period the percentages of caries free children increased and less caries in permanent teeth was found.

Title	Presence of <i>S. Mutans</i> , <i>Staph. Epidermidis</i> and yeasts in saliva in children with insulin-dependent diabetes mellitus
18 Author	J Duková(1), K Nováková (2), J Venháèová(3), D Prùová(4). 1, Institute of Dental Research', Prague, Dental Clinic 2, Clinic for Children 3, Faculty of Medicine, Lab. of Clin. Microbiology 4, University of Palacky, Olomouc, Czech Republic

This study was aimed at ascertaining the prevalence of mutans like cariogenic streptococci, *Staphylococcus epidermidis* and yeasts (*Candida* sp.) in mixed saliva samples taken in diabetic children and at determining the putative relationship of these bacteria to diabetes mellitus. Elevated levels of cariogenic streptococci in saliva reflect the higher risk of dental caries, while the presence of *Staphylococcus epidermidis* and *Candida* sp. is related to diabetes and/or to its compensation. The study was undertaken in a group of 21 children, mean age 14.1 years with a mean diabetes duration of 6.4 years. The average level of HbA1C amounted in some of saliva sampling to 9.03 %. Cariogenic streptococci were isolated in all children examined and their salivary levels amounted to 105 CFU/ml. These levels represent a mild to moderate risk of dental caries. *Staphylococcus epidermidis* was isolated in 13 children (61.9 %) and *Candida* sp. in 9 individuals (42.9%). The significant correlation was found among HbA1C plasma levels and salivary levels of *Candida* sp. *Candida* positive children showed mean value of HbA1C 9.35 %, *Candida* negative individuals showed 8.41 % of HbA1C. Other correlations among salivary streptococci and yeasts to child's age, diabetes duration, onset of diabetes age and insulin daily dosage were not statistically significant. The presence of streptococci and yeasts in the oral cavity of diabetic children when compared with generally healthy individuals (where these bacteria belong to transient flora) may reflect metabolically mediated changes in the oral bacterial ecosystem and may thus be taken as a putative marker of diabetic involvement of an individual.

Supported by grant no. 4085-3 IGA Min. of Health, Czech Republic

19 Title	Oral health, treatment need and dental care provided to 5- and 12-yr-old children in the Czech Republic (Intercounty Data 1997)
Author	Z Broukal *, L Mrklas, O Krejsa. Institute of Dental Research, Prague, Czech Republic

The last nation-wide survey of oral health and treatment need was conducted in 1997 and data obtained are representative of individual counties of the Czech Republic. In the Czech Republic more than 90 % of children and adolescents are insured (GHIS). General Health Insurance Scheme data on the reimbursement of dental care delivered by dental practitioners to young policyholders were analysed as to the volume and structure of treatment services provided in 1997. **Results** 5-yr-olds: 1) oral health – mean dmft 3.61 (3.12–4.12), percentage of caries-free – mean 24.7 % (17.1 –32.4 %), 2) treatment need – fillings mean per child at need 1.84 (1.62–2.16), extractions mean per child at need 0.17 (0.11 –0.24), 3) dental care – examinations per 100 children mean 82.3 (50.0–133.5), fillings per 100 children in deciduous teeth 7.6 (4.2–10.9), in permanent teeth 0.9 (0.2–5.0), extractions of deciduous teeth per 100 children 22.8 (17.9–31.7), permanent teeth 0.1 (0.0–0.2), topical fluorides per 100 children

52.9 (19.2–97.5), sealed teeth per 100 children 1.1 (0.0–3.6). *12-yr-olds*: 1) oral health – mean DMFT 3.20 (2.38–4.07), percentage of caries free – mean 19.3 (11.9–25.6), 2) treatment need – fillings mean per child at need 2.95 (2.53–3.15), extractions mean per child at need 0.50 (0.30–0.65), 3) dental care – examinations per 100 children mean 221.0 (121.5289.9), fillings per 100 children in permanent teeth 0.8 (0.4–1.4), extractions per 100 children of deciduous teeth 110.2 (80.6–130.5), permanent teeth 10.8 (6.9–14.4), topical fluorides per 100 children 160.6 (72.7–267.7), sealed teeth per 100 children 4.8 (1.3–10.1). Results showed persisting significant differences among counties of the Czech Republic both in oral health and treatment need of 5- and 12-yr-olds but also in the volume and structure of dental care provided.

Supported by grant no. 4049-3 IGA Ministry of Health, Czech Republic

20	<p>Title Prescription of systemic fluoride supplement</p> <p>Author R Arbab Chirani*, H Foray, A Zerilli. Unité de Formation et de Recherche d'odontologie, Université de Bretagne Occidentale, Brest, France</p>
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To determine dentists' attitude to fluoride supplementation an epidemiological study was carried out. The dental literature contains articles demonstrating mechanisms, sources, benefits and risks of this prophylaxis, but there is no study that has investigated prescription criteria by the practitioners. A questionnaire related to prescribing of systemic fluoride supplements was mailed to all dentists (602 dentists, 1025 general practitioners, 50 paediatricians) in Finistere (France). It contained two principal parts: 1) general information about the practitioner (gender, age, etc.), and 2) his/her prescription behaviour (prescription criteria, quantity of prescription according to patient's age, etc.).

595 dentists returned the questionnaire (response rate: 35.5%). 94.4% of them prescribe a systemic fluoride supplement. Age of patient is a significant factor of prescription for 97.4% of the practitioners and 82% of them prescribe this supplementation from birth. 60.2% take account of systemic contribution of fluoride (water and salt fluoridation). Only 51.8% estimated sufficient the medical information about this prophylaxis. Several elements influenced the practitioners in their prescriptions of systemic fluoride supplements, the most important seems to be age of patient. Medical information's must be developed about this prophylactic supplementation. For most questions, there is no significant difference among dentists, general practitioners and paediatricians.

21	<p>Title Medical profile of 591 patients consulting the dental hospital of Reims</p> <p>Author H Siano(1)*, C Francois(2), L Brisset(2), B leFevre(1). 1Department of Oral Surgery, Dental Hospital of Reims, 2Department of Dental Public Health, Dental Hospital of Reims, France</p>
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The initial medical history allows to evaluate health status of patients consulting a dental practitioner. These data, related to past and present pathologies as well as current drug dependent treatment, allow us to plan specific measures in order to prevent complications. The purpose of this study was to analyse the demographic and medical profile of patients consulting the dental hospital of Reims. A transversal retrospective study was performed from October 1995 to January 1996, starting from a patient self-managed medical questioning file,

routinely used in our department. The sample was composed of patients consulting the department for the first time or for emergency. 619 subjects were included in the study and 28 were excluded because of incomplete or empty files. The descriptive statistical analysis was performed on 591 subjects, based on observed frequency measurement. Patient's age ranged from 3 to 92 years, and sample mean age was 32.4 years. Results showed that 75.8% of patients are not followed on a medical standard. The main reasons for medical follow-up were cardio-vascular pathologies (26.6%), allergies, ENT- and respiratory pathologies (23.8%), neurologic and psychiatric syndromes (21.7%), and endocrinal syndromes (17.5%). 33% of the patients took drugs: 16.1% for cardiovascular needs, and 10.8% for psychiatric needs. 39.8% of subjects declared at least one pathologic history: 20.7% cardio-vascular, 12.7% respiratory, and 10.2% psychiatric. 34,52% of subjects are ranged at least ASA 2: 16,53% before 35 years, 33,12% between 35 and 54 years, 59.0% after 54 years. Thus, in 35% of the cases, specific measures and precautions were needed. The patient self-managed medical file allows to identify risk patients for which specific preventive care is needed. It also has an educational interest in medical formation.

22 Title Improving students' appraisal of patients' dental needs when recording a clinical and patient based outcome profile
 Author MJP Weissenbach, NA Cordebar, Universite' H. Poincare' Faculte' de Chirurgie dentaire de Nancy, France

The study was carried out to assess the advantage of using a summarised clinical and patient based outcome profile, when handling the clinical information. Having implemented the Weed's problem oriented approach in treatment decisions for the primary dental care clinic, it was assumed that the quality of the problem list could be improved if, before listing them, the students summarised their clinical findings, in a simple, specially designed, dental and patient based outcome profile. Dental students were paired (student A without experience of the outcome profile and student B instructed in profile utilisation). 47 non-emergency first-visit patients were examined twice. First by student B followed by student A. After examination both students performed the patient problem list in controlled time. The quality of problem lists A and B was compared. **Results** The complexities that accompany patients were better diagnosed when using the outcome profile. The use of the proposed dental and patient outcome profile during the initial dental visit was advantageous for the synthesis of clinical data, their presentation and their computing. However, more research is needed to determine if the oral health outcomes can be effectively appraised by such simple means.

23 Title Differences in oral hygiene education in orthodontic patients aged 8 to 12 years
 Author G Neumann, S Scherer, W Hahn, EA Hoffgrave. Freie Universität Berlin, University Clinic Benjamin Franklin, Dept. of Orthodontics, Berlin, Germany

To evaluate the information situation about oral hygiene in different groups of orthodontic patients 204 children (102 boys and 102 girls) were interviewed by questionnaire. 184 (82 boys and 82 girls) were insured by a government system and 40 (20 boys and 20 girls) by a private company. The questionnaire consisted of questions related to: how to brush, general oral diseases (caries, periodontitis, first symptoms of oral diseases, fluoride applications). A point system was used, which was visible for the patient (maximum number of points: 30). For comparison 20 children insured by the government system were chosen at random. T-tests were conducted to evaluate inter-group differences. The average scores were: boys government insured 18.7 (SD: 5.2), girls government insured 20.2 (SD: 4.3), boys privately

insured 21.9 (SD: 4.7 and girls privately insured: 22.7 (SD: 3.2). There was a statistically difference found between boys and girls that were government insured and between the sample of boys that were government insured (n=20) and girls that were privately insured. To conclude, government insured girls achieved higher scores than boys and selected, privately insured girls achieved higher values than government insured boys.

24 Title Oral health status and oral quality of life in German children
Author A Borutta*, M Brocker. Department of Preventive Dentistry, Friedrich-Schiller-University of Jena, Germany

Within actual oral health outcomes research, quality of life is evaluated together with the normative oral health status. Oral quality of life data have been also collected as part of the WHO initiated International Collaborative Study of Oral Health Outcomes (ICSII). Germany with the new Federal State of Thuringia participated in this project in 1991. In 1995 a replication study was done with the partial aim to analyse the findings of oral health and quality of life. 1000 randomised 12 to 13 year old subjects from rural and urban regions of Thuringia were evaluated for oral health (DMFT, CPITN) and for three dimensions of oral quality of life: the number of oral health symptoms, perception of oral well-being, and social and physical functioning as affected by oral health problems. Caries prevalence was 3.1 DMFT (DT=0.3 FT=2.7, MT=0.1). The periodontal status revealed 37.1% healthy conditions, 55.8% showed bleeding on probing and 7.2% had calculus. 70.3% of children perceived one or more symptoms of oral health problems, the average number of items checked was 1.4. More than 80% of children perceived their oral health better than "OK". Dislike appearance of teeth was experienced in 5% of children. Approximately 3 to 9% of 12 to 13 years olds avoided laughing (8.8%) or meeting other people (3.0%). Due to oral problems 5.8% of children missed school. Comparing the data with those of 1991, it could be concluded that, together with an increase of some oral health indicators, there was also an increase in oral quality of life by reduced of self reported oral disease symptoms, and by increased oral well-being and social and physical functioning, as well.

25 Title Underestimation of the prevalence of inadequate approximal restorations in a clinical epidemiological study
Author JHG Poorterman and IHA Aartman. Dept of social Dentistry and Dental Health Education, ACTA, Amsterdam, The Netherlands

An adequate assessment of the quality of restorations is essential to both dental practice and epidemiological research. Unfortunately, clinical examination alone leaves much to be desired when uses as a sole diagnostic method. The aim of this study was to determine the degree of underestimation of approximal caries in a clinical epidemiological project. In this project clinical data were collected by calibrated examiners, and, after an informed consent procedure, bitewing radiographs were taken. One examiner assessed the approximal surfaces on the radiographs of 621 participants, all being either 17 or 23 years old. For the clinical and radiographic examination the same protocol was used in which a restoration was deemed inadequate based on established criteria. A second examiner judged 20% of the radiographic material to determine the inter-observer agreement. Of a total number of 572 inadequate restorations, 7.7% was observed clinically, 86.2% radiographically, and 6,1% with the combination of both methods. Thus, only 13.8% of the inadequate restorations was found clinically, with over six times as much additionally on the bitewing radiographs. Chi-square test showed statistically significant differences ($P<0.05$) between the percentages clinically underestimated inadequate restored approximal surfaces for premolars (20.7%) and molars (29.0%), upper (29.2%) and lower jaw (21.6%), and the 17-year-olds (28.6%) and 23-year-olds

(24.4%). However, the size of these effects, measured with Cramer's phi-coefficient was small. It was concluded that the number of inadequate approximal restorations in this clinical epidemiological study was highly underestimated.

26 Title Prosthetic treatment access in a Parisian dental public service
Author O Fromentin*, ML Boy Lefevre. Département Prévention, Epidémiologie, Economie , Santé, France

Among factors that limit access to health care socio-economic and socio-demographic barriers are essential to be taken into consideration. The aim of this study was to show the influence of these factors on patient's access to dental care in the dental public service (Hôtel-Dieu Public Assistance-Paris Hopitals) for obtaining a prosthetic rehabilitation. 167 patients filled in forms, which were distributed at the beginning of the prosthetic treatment. This form was divided into three parts: 1) demographic and socio-economic data (age, sex, citizenship, employment status, income, social security and complementary cover, medical assistance, estimated price for the prosthetic treatment), 2) referral (private dentist, hospital or social aid structure, parents or friends), and 3) main motivation to come to the dental service (failure in a private practice, cost of the treatment, habit of care in this structure, quality of care). The results showed that patients treated for prosthodontics in this dental service are about 52.6 years old, (+/- 15.5), 56% females; more than 85% French of EEC citizen; 30% retired; more than 55% stated an income of more than 8500 FRF, 100% had social security cover, about 70% have the advantage of a private or a complementary insurance and less than 55 benefit from a social support. The average cost for the prosthetic treatment was about 8750 FRF (+/- 7144). 57% of the patients are referred by their relatives. Cost and treatment quality are main factors which are reported by patients. For prosthetic treatments, these results suggest that this population prefers private health care than a free health clinic.

27 Title Epidemiological caries survey of schoolchildren in Saarland
Author E. Reich*. University of Saarland, Federal State of Germany

The caries prevalence of schoolchildren is examined every three years in most states in Germany. No survey was yet done in Saarland. The goal of this study was therefore to obtain caries prevalence data of schoolchildren as baseline data. Every 10th school was selected and, in the appropriate classes, every second pupil was examined. Between April and July 1998 clinical examinations were performed by 5 calibrated dentists. The clinical examination consisted of an examination of every tooth surface, differentiated according to initial lesions and cavities. The age of the children was 7, 9, and 12 years. In every age group around 600 children were examined. The mean DMFT values were: 7 years: 0.2 DMFT; 9 years: 0.5 DMFT; 12 years: 1.4 DMFT. These caries prevalences are comparable to other states in the south-west of Germany. In Saarland, dentists in schools did prevention as information for many years. Only two years ago the kindergartens were included in this scheme. Since 1993 individual prophylactic treatment is reimbursed by the sickfund. The caries prevalence of children in the Saarland looks promising, but further prophylactic schemes remain necessary.

28 Title Prevalence of circumscribed opacities of enamel in schoolchildren in the Rhine-Neckar-region
Author MJ Koch*, U Reiss, U Niekusch. Conservative Dentistry, Ruprecht-Karis-University, Heidelberg, Germany

The aim of this study was to determine the prevalence of circumscribed opacities in schoolchildren of different ages (6–11 years old) in 22 different regular schools. In addition, correlation to diffuse opacities was evaluated. Within the school-year 1997/98, 6371 children were examined. Criteria of the DDE-index were used; all surfaces of erupted permanent teeth were included. Circumscribed opacities (of at least one permanent tooth) were noted in 14.9% of all children. The percentage of affected children varied in the different schools from approximately 9% to approximately 27%. Age, sex, and the presence of diffuse opacities did not show a correlation to circumscribed opacities. Of all teeth, upper central incisors appear to be most likely to show a circumscribed opacity. The data show a high prevalence of circumscribed opacities, which is comparable to findings of other studies.

29	<p>Title Use of subsidised private dental care by young Finnish adults 1986 – 1997</p> <p>Author AL Souminen-Taipale* and E Widström. National Research and Development Centre for Welfare and Health, Finland</p>
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In Finland adults born in 1941 to 1965 and later were progressively entitled to subsidised dental care by private practitioners during 1986 to 1990 (in addition to inclusion in the PDS). The purpose of this study was to investigate the use and costs of private dental care of young Finnish adults during 1986–1997. All persons who had received reimbursement for dental care in 1986, 1990 and 1994 from the Social Insurance Institution were included in the study. Five separate age cohort were compared. Individuals were tracked using their civil registration numbers from their first contact with a private dentist in one of the years 1986, 1990 or 1994 until the year 1997. While the total number of young adults who had received reimbursement for private dental care increased from about 53 000 to 200 000 (due to "new persons" becoming eligible), the number of utilisers in the youngest group decreased from 53 000 to 23 000. Attending infrequently (just once or twice during the study period) was most common among the youngest adults and frequent attendance (annually) among older adults. The annual mean cost was lowest among the frequent attenders in almost every cohort. Variation in mean number of annual visits paralleled variation in costs. Among the frequent attenders, diagnostic and preventive measures were most often received. Restorations and surgery were most common among the infrequent attenders. The long-term costs highest for the frequent and lowest for the infrequent attenders. A highly significant decline in the use of subsidised private services was detected among the 19–25 year olds, indicating low treatment needs or preferences for the PDS.

30	<p>Title Occurrence and distribution of caries in 6-year-old children in Blekinge, Sweden</p> <p>Author A Holst*, K Braune, M Kjellberg-Larsson. Blekinge County Council, Dep. Of Paediatric Dentistry, Karlskrona, Sweden</p>
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The aims of the present study are to establish baseline epidemiological data on dental caries in the county of Blekinge, expressed as dentin lesions and enamel lesions; to analyse these data; and to formulate program-oriented planning of dental care for pre-school children to achieve the dental health goal for the year 2000. The material comprised a random sample of 213 children. A clinical investigation was performed by one of the authors and was completed with bite-wing radiographs whenever the proximal surface could not be inspected clinically. 56% of the children had filled surfaces and manifest lesions (dfs) and 42% had manifest lesions (ds). 53% had dmft>0. The finding of enamel caries lesions in 65% of the children indicates that caries prevalence is greatly underestimated. The pattern of dental health was very skewed among the children; 23% had 5 to 14 dft and 11% had 5–23 ds. Clinics in Blekinge have had

different strategies for preventive dental care. In 1997, however, all the public dental service clinics in Blekinge, adopted a uniform program for child dental care, focusing on primary prevention and risk assessment for each individual in order to achieve the dental health goal in the year 2000 which is that >65% will have dmft=0.

This study was supported by Blekinge County Council, Sweden.

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| Title | A comparison of area-based measures of socio-economic status used to identify oral health inequalities |
| Author | M J Prendergast , Dental Public Health, Leeds Health Authority, Leeds, England, UK |

The limitations of conventional measures of social inequality (social class, income, education etc.) have led to the development of a number of different census-based indicators which describe the characteristics of an area where people live. This study compared the ability of four such measures to identify differences in caries experience and use of dental services among children in Leeds. Postal questionnaire and epidemiological examination data from a survey of 5-year-old children were analysed following the allocation of children into one of three divisions according to the relative status of their area of residence. The divisions each covered approximately one third of the total population of Leeds and were ranked from I to III in order of increasing disadvantage. The measures used were; Super Profiles (an unranked social classification), the Index of Local Conditions and the Jarman and Townsend indices of material deprivation. There were no significant differences between the mean dmft values for each division when using different measures. The mean dmft range in division I was 1.43–1.51, II 2.33–2.39 and III 3.09–3.17. Similar results were seen for the percentage of parents reporting regular dental attendance by their child (I 87%–89%, II 79%–82%, III 68%–70%) or themselves (I 84%–85%, II 74%–77%, III 59%–62%). Whilst theoretical or practical considerations might influence the choice of indicator for a particular study it can be concluded from this investigation that four commonly used area-based measures of socio-economic status perform similarly in the identification of oral health inequalities in young children.

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| Title | Risk assessment for dental plaque prevalence in 7-year-old Flemish children |
| Author | L Martens*, D Declerck(2), J Vanobbergen(1–3) E Lesaffre(2) , K Bogaerts(2)2.
University of Gent,1
Catholic University of Leuven,2
Flemish Dental Association, Section Health Promotion and Prevention3,
(Flanders, Belgium) |

As part of The Signal Tandmobiel ® Project, a questionnaire was completed by the parents of 3987 seven year olds, regarding, brushing and dietary habits of their children. In addition the children were questioned about the brushing habits of their parents. Logistic regression was applied with the plaque score (i.e. plaque index according to Silness and Loë. 1964) as a response variable. Univariate analysis (significance level at 5%) showed that: age at start of brushing ($P=0.001$), brushing frequency ($P=0.001$), intake of sugar-rich snacks ($P=0.026/$ OR=0.856) and having more than 2 between meals ($P=0.048/$ OR=1.183) have a significant effect on plaque scores. From a multiple analysis, it became obvious that: start of brushing before the age of 3 ($P=0.001$) and at least 1x brushing a day ($P=0.0036$) influenced significantly the plaque score. Minus two snacks a day ($P=0.0154$) and at least 1x brushing a day ($P=0.0002$) also influenced significantly the plaque score. Seeing parents brushing had a

significant effect on the start of brushing (mother: $P=0.0072$, father: $P=0.0048$) and on the brushing frequency (mother: $P=0.0005$, father: $P=0.0095$). From this analysis, it may be concluded that brushing before the age of two and brushing two times a day have a significant effect on oral hygiene in seven year olds. Moreover dietary habits and parental modelling play a major role.

This study was supported by LeverElida

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| Title | Assessing risks factors dental caries in the primary dentition |
| Author | J Vanobbergen(1.3)*, L Martens ¹ , D Declerck(2), W Lesaffre(2), K Bogaerts(2).
University of Gent ¹ ,
Catholic University of Leuven ² ,
Section Oral Health Promotion en Prevention-Flemish Dental Association ³ |

Logistic regression was used to define the influence of risk indicators on the development of caries in 7-year-old schoolchildren recorded in a cross-sectional study of about 5000 children conducted in Flanders. A large set of diet, oral health behaviour and socio-demographic factors were investigated. The clinical finding were completed with data obtained by questionnaires. After adjusting for the confounding variables: educational system and province (stratification variables), gender and age, the following risk indicators remained significant in the multiple analysis (at 5% probability level); the frequency of tooth brushing ($P=0.03$, OR=0.872), the age at start of brushing ($P<0.00001$, OR=1.210) for an increase of one year), the use of fluorides ($P<0.00001$, OR=0.650), the use of sugar containing drinks ($P=0.00061$, OR=1.358), and the number of snacks between meals ($P=0.014$, OR=1.234). Age was significantly related to caries prevalence ($P=0.00059$, OR=1.389 for an increase of one year) and there seems to be some geographical imbalance ($P=0.03$, OR=1.350 when living in the eastern part of Flanders). Health education, including brushing and dietary counselling should be encouraged in a well-defined geographical spread and targeted on very young children.

This study was supported by LeverElida

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| Title | Mother-to-child community health program to prevent caries in babies |
| Author | T Ferro, B Meneghetti, A Isola, PA Smania, C Gallo. Regional Unit for the Study, the Prevention and Therapy of Dental Diseases ASL 15, Ata Pasovana, Cittadella Veneto, Italy |

One of the aims of the community health program is to avoid the transmission of *Streptococcus mutans* from pregnant women to their babies. To date the program has involved 142 pregnant women in the last three months of their pregnancy. The program is being conducted in the ASL 15 Veneto (Italy). The mothers are referred to our clinic during delivery training courses conducted by auxiliary maternity staff. All 142 pregnant women attended a seminar about oral health issues and prevention of dental diseases in children during the first meeting. A salivary test, determining the presence of *Streptococcus mutans* (Dentocult SM Vivadent), was performed on 104 pregnant women. A clinical examination according to WHO criteria was completed for 90 of the pregnant women. For each mother with a high salivary test score, Cervitec varnish (Vivadent) was applied. Follow up salivary tests and clinical examinations have been performed for 22 mothers and their 6 months old babies having erupted teeth. 54% of pregnant women had high salivary test scores and only 8 children out of 20 children born from mothers with high salivary test scores, had low salivary test scores. In contrast all children born from mothers with low salivary test scores had low salivary test scores, but for two mothers who had had high-test scores after delivery. To conclude, it appears that mothers who

did not attend the clinical examination were less motivated to bring their babies to the follow-up clinical examination and for the salivary test in general.

35 Title Mercury exposure from a Finnish crematorium
Author H Mouromaa* and N Rahunen, Institute of Dentistry, University of Helsinki, Finland

Concerns about health of amalgam are still under intensive debate in many countries. In addition to possible clinical intoxication, many effects have indeed been attributed to the mercury vapour that is released from amalgam restorations. The aim of the present study was to assess the quantity of mercury released from a Helsinki crematoria. In this crematoria there were 1910 deceased ashes in 1996. This group was classified into ten-year intervals according to age and gender. The matched controls representing 10% of each age group were randomly selected from patients treated in the Institute of Dentistry, University of Helsinki. Due to high rate of edentulousness only 3.5% of the controls over 70 years were included. The study material thus collected comprised 96 patients. The total number of amalgam filled tooth surfaces was counted from each patient's record. The test fillings according to Black's classification and amalgam crowns for a premolar and a molar were made and weighted. Mercury content of 50% of the weight of the fillings was used to calculate the total mercury exposure. The amalgam fillings of an ashed deceased contained on the average 2.54 grams of mercury (range 0–6.20). This would mean a total mercury exposure of 3 841,2 grams in Helsinki in 1996 through the crematoria. The results support earlier findings and seem to indicate a small environmental exposure.

36 Title Development of clinical practice guidelines: topic selection
Author WJM van der Sanden*, T.G Mettes, AJM Plasschaert, EH Verdonschot. Department of Cariology and Endodontology, University of Nijmegen, The Netherlands

The aim of this study was to evaluate a method for topic selection for the development of clinical guidelines for the Dutch dental health care system. A questionnaire was mailed to a random selection of 1500 Dutch general dental practitioners (GDPs). In a free-field question the respondents' suggestions for subjects of future guidelines were obtained. The response rate was 77,3%. Fifty-four percent of the GDPs supported the development and use of clinical dental guidelines. Those who were in favour of developing and using guidelines were asked for which clinical dental problems guidelines were desired. In addition, they were asked to define the problem and to describe the precise nature of the clinical problems. The clinical problem areas most frequently mentioned were 'endodontology', 'traumatology', 'dental radiography', 'adhesive dentistry', 'aesthetics' and 'restorative dentistry'. The support of clinical guidelines decreased as a function of the age of the GDP. Female GDPs were significantly more supportive of clinical guidelines than their male colleagues (63% vs. 52%; $P < 0.05$). Justifications for guideline development were 'the availability of a quality reference in clinical practice', 'for ascertainment in clinical treatment decision making', 'to keep informed about the state of the art in dentistry' and 'to be able to inform the patient more accurately'. It was concluded that the development and the use of evidence-based clinical guidelines is supported by a majority of the Dutch GDPs and that a questionnaire was a useful tool in identifying dental clinical problems suitable for the development of guidelines.

Title Maternity caries awareness as a part of perinatal education

37 Author M Kittel, E Rusyan. Dept. Conservative Dentistry, Medical University of Warsaw, Poland

The aim of this study was to establish an easy way to increase awareness among pregnant women of caries transmission to newborn children. The pregnant women's perception of their current oral health status was compared with the results of dental examination conducted using WHO criteria and salivary *Streptococcus mutans* level. A group of 134 women from the Warsaw district, aged 23–30 in their first pregnancy, attending an Antenatal Class, was examined. All participants of the study filled in a questionnaire concerning frequency of dental examinations and treatment, their knowledge of caries prevention principles and their consciousness of their own oral status. SM test was carried out and, according to its results, a high-risk group was selected. An SM level of >10⁵ CFU was found in 70% of pregnant women. This group was informed about results of bacteriological test and then clinically examined using WHO criteria. 54.6% of high-risk women had a mean DMFT of 6.5. According to the questionnaire results, 55% of high-risk women improperly assessed their oral health status, declaring no need for treatment. 100% of pregnant women declared participation in the preventive and treatment program with their newborn children. In conclusion, a presentation to mothers of microbiological results in combination with an offer of treatment encourages them to participate in the proposed preventive and treatment program.

Title A photographic method for recording enamel opacities. lens lighting and film

38 Author JA Cochran, DO Mullane*, C van Loveren, L Seppa, P Holbrook, T Athanassouli, E Barros Fernandes, C Ketley. Biomed 2 Flint Project. Oral Health Services Research Centre. University Dental School & Hospital, Wilton, Cork, Ireland

The development of a reliable and reproducible method for monitoring levels of enamel opacities including fluorosis has been a priority amongst epidemiologists for many years. Various indices such as Dean's, TSIF, TF and DDE have been developed each having its own merits depending on the aims of the study being conducted. More recently the benefits of a photographic method for recording enamel opacities have been recognised. These benefits include the opportunity to grade slides without being aware of their source, to have different examiners trained in different indices to grade the slides, allowing one examiner to grade slides taken at different periods. Thus, any prevalence change may be determined without examiner drift being a factor. As part of an EU funded BIOMED 2 Project a standardised photographic method for recording the labial surfaces of the 2 upper permanent central incisors was developed. In clinical photography the most important aspects of the camera systems are the lenses and the lighting system. (For this study a Minolta 600 Si Camera was used). In choosing the film, long-term stability, colour balance and consistency between rolls are the main factors to be considered. Based on a review of the literature and a professional advice Kodachrome ASA Transparency (positive) film was used in this project.

Title A photographic method for recording enamel opacities, camera angle, drying time and drying method

39 Author JA Cochran*, DO Mullane, C van Loveren, L Seppa, P Holbrook, T Athanassouli, E Barros Fernandes, C Ketley, BIOMED 2 FLINT Project. Oral Health Services Research Centre, University Dental School and Hospital, Wilton, Cork, Ireland

A number of factors affect the quality of the image produced when photographing the labial surfaces of upper permanent central incisors including the angle between the camera, its flash

unit and the labial surface, the time spent drying the tooth prior to taking the photograph and the method of drying the tooth (compressed air, wipe with cotton-wool or allow to dry in the atmosphere). In previous reports the research undertaken to determine the appropriate camera angle and drying time was described (Cochran, J. and O'Mullane D.: *Journal of Dental Research* 1997, **76** Spec. Iss Abstract 3228 and Cochran *et al*: *Caries Research*, 31 Abs 137 1997). It was found that a camera angle of 45° was the appropriate angle. In the case of drying time it was found that there was a positive linear relationship between drying period of 15, 45, 75 a 105 seconds and the amount (prevalence) of fluorosis recorded using the T.F. Index. A drying period in excess of 105 seconds had little further effect on the prevalence of fluorosis observed. In the case of the drying method, data from sixty-one 12-year old children resident in Cork showed that the prevalence of fluorosis was similar using compressed air, cotton wool or allowing to dry in the atmosphere. The photographic method adopted therefore was to use a camera angle of 45°. Two photographs were taken of the teeth, one at 8 seconds after placing the cheek retractor and the second at 105 seconds with the teeth being allowed to dry in the atmosphere.

40 Title A comparative study of male and female dental practice patterns
 Author DE Gibbons*, JT Newton, N Thorogood. Department of Dental Public Health Services Research, GKT, London, UK

Previous research has established differences in the working practices of male and female dental practitioners. The objectives of the present study were to identify differences, if any, in the proportions of male and female dentists in the UK who own general dental practices, and any differences between male and female dentists in the position they occupy in the employment hierarchies of the Community Dental Service and the Hospital Dental Service within the UK. A postal questionnaire survey of a random sample of 10% of all registered dental practitioners within the UK was carried out. Replies were received from 1.791 individuals (66.7% response rate). Female respondents working in general practice (n=374) were significantly less likely than male respondents in general practice (n=872) to be sole proprietor of, or a partner in, the practice (39% of women were sole proprietor or partner, 76% of men: $\chi^2=170.79$, $P<0.001$). Males working in the Hospital Dental Service (n=47) were significantly more likely than females (n=28) to hold Consultant positions (68% of men were Consultants, 18% of women: $\chi^2=15.76$, $P<0.001$). Female dental practitioners working within the Community Dental Service (n=86) were significantly more likely than males (n=48) to be employed in junior positions (64% of women were dental officers, 44% of men: $\chi^2=4.33$, $P<0.05$). Inequalities exist in the employment of women within all three major sectors of dental provision in the UK.

41 Title Oral health care of disabled people in the Czech Republic
 Author M Salandová, A Piliňová*, M Krutina. Institute of Dental Research, Prague, Czech Republic

The project "Monitoring of oral health and treatment need in mentally handicapped people in the Czech Republic" is supported by the Ministry of Health. To obtain data on actual dental care in mentally disabled people, all the 201 institutions, that home these people, were contacted. The authorities were asked (questionnaire) to describe home (institutional) and professional dental care. 58.7% institutions responded. These institutions care for 8805 persons (1853 children from 3 to 18 years and 6952 adults over 18 years of age). Based on these data, it was noted that oral hygiene is provided but with difficulties. In fact toothbrushing is provided to well co-operating persons only. The majority of them use hand toothbrush (98%) whereas cotton buds or swabs are used for less-cooperating mentally handicapped people.

The electric toothbrush is not available. Regular dental check-up is given to 66% of mentally handicapped people in general dental practice. Other patients attend the dentist in the case of acute pain only. The treatment with premedication or general anaesthesia is reserved for surgical treatment, exceptionally for the treatment of multiple dental caries in children. No odontological preventive measures are provided to these patients. The above information gives evidence about insufficient dental care, both home and professional, for mentally handicapped people in the Czech Republic.

Title	Dental caries levels amongst children in the Mid Western Health Board in Ireland
42	K Neville*, D O'Mullane, H Whelton, M Delaney, J Green and J Lemasney. "Oral Health Services Research Centre, University Dental School & Hospital, Wilton, Cork" Mid Western Health Board, Ireland

The aim of this study was to measure dmft/DMFT for 5, 8, 12 and 15 year old children and adolescents in the Mid Western Health Board region of Ireland (counties Clare, Limerick and Tipperary) and to compare results for children receiving fluoridated water, fluoridated mouthrinses and those not receiving such fluoridation. A randomly selected sample of 2.585 children aged 5, 8, 12 and 15 years were examined by trained examiners as part of a regional oral health survey conducted in 1997. Five-year-old children living in areas with fluoridated water had a dmft of 1.7 compared with 2.9 for those living in non-fluoridated areas. For 8-years-olds the DMFT was 0.6 for those in fluoridated areas compared with 0.8 for those in non fluoridated areas. When comparing 12-years-olds the DMFT figures are 1.4 (fluoridated) compared with 2.1 (non- fluoridated) and for 15-years-olds 3.0 and 3.8 respectively. Many of those living in non-fluoridated areas receive fluoride mouthrinses through a school-based programme. The DMFT for 8-year-olds is 0.7 for those receiving mouthrinses and 1.0 for those who do not participate in such programmes. The DMFT for 12-year-olds is 1.7 (receiving fluoride mouthrinse) and 2.9 (not receiving fluoride mouthrinse). At the age of 15 the DMFT was 2.8 and 4.5 for fluoride mouthrinses and no fluoride mouthrinses respectively. It may be concluded that children living in areas with fluoridated water have better oral health children in non-fluoridated areas for all age groups.

Title	Dental caries status of 15-year-old students in Mexico
43	N Molina, P Mendoza, R Bologna, G. Luna. Universidad Autónoma Metropolitana X, Universidad de Guadalajara. F.O. Unam, Mexico

The majority of the Mexican people are affected by dental caries. Most of the epidemiological data available concerns schoolchildren and there are only a few studies relating to Mexican adolescents. The purpose of the present study was to evaluate the oral health of adolescents of Mexico. A total of 174 male and female of 15 years of an school of south of Mexico City (M.C.) and an technical school located in the State of Mexico (S.M.) were clinically examined. The caries experience was recorded according to the WHO Basic Methods criteria by two calibrated dentists. Results showed that the mean DMFT index was 6.2 (DS 4.1) in M.C. and 6.6 (DS 4.5) in the S.M. The main component of this index was decayed teeth: 71% in MC, 72.3% in SM, followed by the filled component with 27% in MC, 25.8% in SM and missing teeth 2% in MC and 1.9% in SM. Females had a higher number of dental caries due to higher number of filled teeth in comparison with males. The prevalence of dental caries is higher than in European countries and caries levels are similar to those of developing countries. The study emphasises the need for reorientation of oral health care in Mexico and the relevance of dental services for the implementation of oral health promotion and prevention is highlighted. The study was supported by the Metropolitan Autonomous University .

44 Title New recommendation for fluoride supplements in a prevention programme
Author C Vite San Pedroc*, B Topuz, B Bereksi-Reguig, M Follignet, Conseil General, France

In 1984, the Seine Saint Denis County initiated a children dental prevention program, 240000 children under 12 years old are concerned. This program is a partnership between the County, its towns and the education ministry. The program relies on the following preventive tools: fluoride administration, oral hygiene measures and dietary counselling. The assessment resulted in (1) a reduction of 41% in dental caries in 11-year-old children after 8 years, and (2) a concentration of the tooth decay among a smaller number of children than before implementation of the programme. New recommendations for the use of fluorides in the County were based on these results. The experience of participants in the program was also taken into account. Recognising the efficacy of fluoride administration to improve dental health the County program advises to replace medicinal fluoride by fluoride salt starting at young ages in daily diet.

45 Title The oral health among children aged 12 to 14 year in Benin: consequences on the development of a dental prevention policy.
Author E Moallic, AM Le Flohic, A Zerilli*, UFR Odontologie, Brest, France

The study was carried out in March 1998. A total of 300 children aged 12 to 14 year and originating for 52% of low socio-economic class were examined. 73% resided in urban area. This study has 3 aims: 1) the evaluation of the youths layers oral health of the population of this country, 2) the determination of their treatment need, and 3) a cost evaluation of the implementation of a dental health policy adapted to local economic possibilities. The background variables were gender, degree of urbanisation, kind of alimentation, type of oral hygiene. Other variables studied included bacteriological and biochemical characteristics (pH, candida evaluation level) and DMFT. Results showed t a DMFT score of 0.83. The F component represented only 4,4. Considering that the classical conservative oral care would represent a prohibitory cost for the economy of this country, it seems more reasonable to put in place a preventive policy based on fluoride salt and associated with the training of health personnel.

46 Title A collaborative study of child dental health between Scotland and Belgium-health related behaviours
Author D Declerk*, CM Pine, L Martens, J Vanobbergen, J Lesaffre, G Burnside. Section of Dental Public Health and Health Psychology, University of Dundee Scotland, Dental School Catholic University Leuven, Dental School University of Gent, Flemish Dental Association, Biostatistical Centre for Clinical Trials, Catholic University of Belgium, Belgium

A comparison of child dental health between age-matched Scottish and Flemish cohort yielded significant differences in caries experience in the primary dentition of the children examined. At the age of 7, Scottish children had a mean DMFT-score of 4.07, while Flemish children had a mean DMFT-score of 2.24. The difference in caries experience in the permanent dentition seems to level out at a later age. Scottish children had a DMFT of 0.94 at the age of 10 and Flemish children had a DMFT of 0.83 at the age of 9. In both cohorts, parents were asked to

complete the same questionnaire on oral health-related habits. This offers possibilities for possible differences between these results. Regarding oral hygiene habits important differences were observed between Scottish and Flemish children with respect to the age at start of brushing (in favour of Scottish children) and brushing frequency (also in favour of Scottish children). Flemish children received more frequently systemic fluoride supplementation while Scottish children started using (fluoridated) toothpaste at an earlier age. Reported dietary habits showed that a significant larger proportion of Scottish children did not take breakfast in the morning and that they took sweets to school more often. Regarding the dental attendance, Scottish children are doing better since a much larger proportion of these children attended the dentist in the six months before the examination. A comparison of oral health-related habits between Scottish and Flemish children showed that in spite of more positive brushing habit Scottish children had a higher caries experience in the primary dentition. Negative dietary habits are probably responsible for these differences. Part of the data used for this collaborative study was derived from the Signal Tandmobiel® project Flanders, supported by LeverElida (Unilever Belgium).

47 Title Salivary bacterial counts after toothbrushing with amine fluoride and sodium fluoride
 Author H Jentsch*, E Beetke, Dental School, University of Rostock, Germany

Fluoride is generally accepted as a mean for prevention and therapy in dentistry. Fluoride influences enamel remineralisation and bacterial metabolism. The aim of this study was to compare the effect of the combination of Elmex toothpaste and Elmex gelée versus sodium fluoride gel on the basis of salivary bacterial counts. 51 male and female volunteers participated in a randomised blind study. After brushing with Aronal toothpaste twice a day for two weeks (conditioning period) group 1 (n=26, mean age 23.5 \pm 1.3 years) brushed the teeth twice a day using Elmex toothpaste and applied twice a week Elmex gelée. Group 2 (n=25, mean age 23.7 \pm 2.1 years) used a sodium fluoride gel (0.125% fluoride) for toothbrushing twice a day. The salivary screening tests Dentocult SM and LB as well as the Oricult N test were applied under standardised conditions at the beginning of the study, after 2 and 4 weeks. The χ^2 – and the Friedman/Wilcoxon-tests were used for statistical analysis. There were no significant changes of the lactobacilli count and the amount of oral yeasts in both groups. A significant decrease in the mutans streptococci count could be demonstrated in-group 1 ($P=0.011$), but not in-group 2. The significant change in-group 1 occurred after two weeks ($P=0.011$) as well as after 4 weeks of the study period ($P=0.007$). The results suggest a stronger antibacterial effect of amine fluoride toothpaste's *in vivo*. The study was supported by Wybert/Lörrach (Germany).

48 Title The importance of oral health to quality of life—findings from a national survey
 Author C McGrath* and R Bedi. WHO Collaborating centre for disability, culture and oral health, NCTOH, Eastman Dental Institute, London, UK

This study was designed to determine whether the UK public perceived oral health as being important to quality of life (QoL) and if so, to identify the most important ways. In addition to identify age and gender variations in these perceptions. Design. Qualitative face to face interviews with a random probability sample of adults resident at addresses selected from the British Postcode Address File. Subjects and methods 1.865 adults aged 16 or older took part in this study. The vehicle for this study was the Office for National Statistics Omnibus Survey. Setting. Respondents were interviewed in their homes about the importance of oral health to their QoL Results 71% (1,332) perceived their oral health status as important to their QoL

through a variety of physical, social and psychological ways. Most frequently its impact upon eating (404, 23%) and comfort (302, 17%) were considered most important. Other ways are presented in the paper. Physical domains were considered more important to oral health related quality of life than social or psychological domains. Age and gender variations were apparent in perceptions of what was most important ($P<0.05$). Conclusion. The UK public perceives oral health as being important to life quality in a variety of different ways and various sub groups of the population's rate what is important differently. This has implications for assessing patient needs.

- 49** Title Utilisation of oral health services among Finnish 50-year-old adults
 Author A Hiiri*(1), E Widström¹, E Honkala(2).
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 2Kuwait University, Faculty of Dentistry, Finland

In Finland, the middle-aged adult population in big cities has good access to private dental services without subsidies, but is excluded from the Public Health Service. This study investigates determinants of the use of oral health services among this group, using a structured questionnaire. A random sample of 50-year-olds living in the Helsinki, Vantaa and Espoo metropolitan area was selected. The response rate was 73%. Eighty-two percent of the respondents had visited a dentist during the last two years. Women ($P<0.001$) and highly educated ($P<0.05$) participants had made visits more recently compared with other groups. Forty-one percent of the subjects had one or two visits, 20% 3–5 visits and 6% more than five visits during past year. The mean cost of treatment received was about FIM 2000 (EURO 336). The major reasons for seeking oral health services were need for check-up, filling, scaling and emergency treatment. Access to private dentists was reported to be easy and 95% of the subjects could choose their appointments freely (the density of dentists is very high). Forty-three percent of the respondents were regularly recalled for check-ups but almost twice as many would like to be recalled by their dentists. Subjects were loyal to their dentists: on average they had been attending the same dentist for 10.3 years (SD 8.4). However, a majority of the respondents (84%) wished to have access the PDS. It can be concluded that the use of dental services among middle-aged adults in Helsinki region is frequent but still related to socio-economical status.

This study was supported by the Finnish Ministry of Health and Social Affairs.

- 50** Title Estimation of treatment need in French schoolchildren
 Author M Souames*, F Bassigny, N Zenati and M L Boy-Lefevre.
 Département Epidémiologie-Prévention-Economie de la Santé. UFR
 Odontologie, Université Paris 7, Denis Diderot. France

Using the Dental Health and Aesthetic Components of the index of Orthodontic Treatment Need (IOTN, Brook and Shaw, 1989), the study was started to investigate the 1) distribution, prevalence and severity of malocclusion and 2) to assess the need for orthodontic treatment in children from the French area, Ile de France. A random sample of 310 schoolchildren aged of 9–12 year was examined by one postgraduate orthodontic student and by one orthodontist. The findings showed that 20% of children had a Angle's class II, 1; 5% had an overjet of 6 mm and more; 26% had crowded teeth; overjet was more observed in girls, and crowding was seen more often in boys. Treatment is necessary or highly desirable for 20% of the examinees. A kappa value of 0.76 and 0.61 for the DHC and AC respectively, representing a substantial inter-examiner agreement was obtained. The Dental Health Component was found to be reliable, quick, easy to use and well adapted. The Aesthetic Component alone failed to identify any children needing orthodontic treatment. For all that, the IOTN may be adequate for public

health planning and epidemiological purposes.

- 51 Title Dental fluorosis and altitude in Mexican and Uruguayan schoolchildren
Author N Molina Frechero, I Méndez Ramírez, JC Hernández Guerrero, R Bologna Molina. Div. Est Postgrado Facultad de Odontología UNAM, UAM-X, IMAS-UNAM, Mexico

The purpose of the present study was to determine the prevalence and severity of fluorosis in the permanent dentition of schoolchildren of Tezontepec de Aldame, Mexico and Fraile Muerto, Uruguay. The altitude in Mexico is 2000m above the sea level and in Uruguay it is 330.

Fluorosis levels were evaluated in 151 schoolchildren of 10–11 years old male and female born and reared in the study community. These were Aldama with a fluoride level of 0.67 PPM and Fraile Muerto with a mean fluoride level of 1.2 PPM. Severity of dental fluorosis was diagnosed according to Dean Index (DI) and the Thylstrup-Fejerskov (TF) Index. The results revealed a prevalence of dental fluorosis of 89.9% in Aldama and of 74.3% in Fraile Muerto. Using the TF Index, 77% in TF1 and TF4 was found in Aldama and 61.1% in F. Muerto. Altitude of the area may be a factor that contributed to the high prevalence and severity of fluorosis dental in Mexican schoolchildren.

The study was supported by UAM an CONACyt #27615/M

- 52 Title Dental health behaviour in families with infants and preschoolchildren – one year after an individual dental instruction
Author B Imnisch* and G Dietrich. University of Technology, Dresden, Germany

The aim of this longitudinal study was to investigate the changes of dental health behaviour in families with infants and preschoolchildren one year after an individual dental instruction. 409 infants (group 1) and 135 preschoolchildren (group 2) and their parents were involved in a dental health prevention program of Saxonia (Germany). Dietary, oral hygiene- and sucking habits, socio-dermographic characteristics of the family, use of fluoride supplements by the child and knowledge of parents of dental health were assessed by an interview of the parents at baseline and follow-up. Toothbrushing for their children was demonstrated to the parents after dental instruction. Statistical analysis were performed by the Chiquadrat-test and the Student's t-test. The mean number of cariogenic meals per day of infants decreased from 4.3 at baseline to 3.7 at follow-up ($P<0.001$), but no significant changes were found in preschoolchildren (4.5 to 4.3). However, the total number of meals per day did not change in both groups. Frequency of consumption of cariogenic beverages decreased less in infants than in preschoolchildren. Non-cariogenic beverages were frequently preferred at follow-up, mainly in families with high educational level. 17% of the infants received cariogenic beverages during the night at baseline and after the instruction 6% ($P<0.001$). 67% of the infants used a nursing bottle at baseline and 35% ($P<0001$) one year later. Mean frequency of toothbrushing increased in infants from 1.4 to 2.1 times per day ($P<0.001$), but preschoolchildren did not change their brush-frequency (2.6 t/d). Knowledge of the reason of caries was improved in families with higher educational level. Conclusion: Although at both examinations almost all parents in both groups were willing to change life-style in their families, real changes of dental health behaviour was registered mainly in families with infants.

- Title Oral health of twelve year old children – the major trends in 1998
B. Hagg1, J. Deegfontein1, E. Balend2, B. Quenqvist2, H. Ulin

53 Author

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Eleven years after the first epidemiological study, UFSBD decided to start a new epidemiological survey in order to establish the current DMFT scores of twelve-year-old schoolchildren. The sample constituted 6000 children divided over 90 secondary schools and was stratified based on two criteria: the category of educational establishment and the size of municipality. The examination was conducted using a lightweight mobile unit (LMU), instrumented with probes and plane mouth mirrors. Clinical examinations enabled us to apply the DMFT index, which gives an overall indication of the prevalence of dental caries and treatment need. The comparison of the current survey, which that carried out in France in 1987 and 1993, permits the assessment of major trends in oral health of these children. The DMFT score decreased from 4.04 in 1987 to 2.07 in 1993 and remained at that level in 1998 (1.94). The proportion of caries free children increased from 35% in 1993 to 40% in 1998. The proportion of decayed teeth had slightly increased compared to 1993 (from 30% to 35.6%). However, in 1993 20% of the children had a DMFT more than 4. Children who don't regularly attend a dentist, had a F/DF ratio different from children attending regularly a dentist, independent of socio-economic class

54 Title

Two year follow up study of the dental health of 5-year-old children residing in Oxfordshire

Author

D Thomas* and Nigel Kipps. England

The objective of the study was to evaluate the current dental health status of a cohort of young children identified two years previously in a dental epidemiological survey as having active dental decay. The basic research design included standard clinical dental examinations of children aged 5 and 7 years. Carried out in Primary schools in Oxfordshire, UK. Participants: Ninety four five and seven-year-old children were examined. The main outcome measures recorded were the percentage of children with active decay and mean caries experience for each survey was recorded. The results showed that the mean dmft of the 94 children re-examined in 1997 had increased to 4.41 from 3.63 in 1995 and that there were no significant differences in mean decay experience between boys and girls were noted. Sixty-three children (39 girls and 24 boys) had received some form of dental treatment. Forty children with evidence of dental treatment had a decrease in the amount of active decay, and 12 of this group had no active decay present. There was evidence of the use of fissure sealants in 43% (26 children) that had received other forms of treatment. On the negative side 19 children (30%) had increased active decay and 4 children remained the same. This can be compared with the group who appeared to have not received any dental treatment, where 33% showed an increase in active decay and 67% showed no change. One can conclude that access to dental services remains an important factor as one of the determinants of dental disease in young children. And that a small proportion of children with severe decay continues to have poor access to primary care dentistry.

Title

Epidemiology of dental caries in the youngest population in Sicily
R Altese(1)* and R Ferro(2).

55 Author

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An epidemiological survey was carried in the Health District of Alcamo (Sicily) to evaluate the prevalence of dental caries in the youngest population. No data on the fluoride concentration in

the drinking water of this area are available. 172 children attending 19 kindergarten and 17 primary schools were randomly chosen divided into two index aged groups: 4 years (97) and 6 years (75). The clinical examinations were performed at school. Carious lesions were registered according to WHO criteria and radiographs were not taken. The intra-examiner reproducibility was high: Cohen's kappa value was 0.93. The percentage of caries free children was 65% at 4 years and 30% at 6 years. The mean dmft score of 4-year-old children was 1.19 and the mean dmfs value was 1.35; 6-year-old children had a mean DMFT value of 0.37 and a mean DMFS value of 0.42. To conclude, this is, the first epidemiological survey carried out in the Sicily Region. The lack of previous surveys does not allow conclusions on trends for caries experience in the region.

56 Title The impact of oral health in relation to gerontology
 Author C Ditsch*, A Devillers, J. Declerc, M Biserte, France

In 1998 an epidemiological survey amongst 400 senior handicapped patients was carried. The patients, living a specialised centre, were separated into short, medium, and long term according to their length of stay. The aim of this study was to establish a medical check up of the residents in order to better understand their oral health as well as their oral hygiene habits. The results showed that 55 out of 100 patients still had their teeth, 63% of these patients had gingivitis and periodontitis. In this group 70 to 80% of the natural teeth were absent. Nearly all the patients required prosthetic treatment. 56% of the 55 patients with natural teeth had practically no oral hygiene. The study shows the need of prosthetic treatment among this group of patients. At the same time an assessment of the clinical knowledge of the paramedical carers was carried out. From these assessments we can deduce how to optimise oral hygiene, prosthetic requirements, the engagement of paramedics and the motivation of patients themselves. A similar assessment would be carried out at a regular basis in view of updating results of our interventions.

57 Title Experimental trial of pit and fissure sealants in caries susceptible children living in Seine Saint-Denis (France)
 Author M Folliguet(1)*, B Moline(2), J.P. Espié(3).
 1Université Paris V,
 2Service Prévention et actions sanitaires, Conseil Général, 3Service Prévention et actions sanitaires, France

Two institutions, Department of Seine Saint-Denis and Caisse Primaire d'Assurance Maladie have initiated a three-year trial of pit and fissure sealants in two cities in a sample of children aged 6 and 7. The idea behind was to reduce caries prevalence in this population, to promote the use of pit and fissure sealants in the whole area and to convince the authorities that this method should be validated as a collective dental health prevention method. In 1997, 2099 children were examined at school and 32.3 % of them (677 children) were included in the program of sealed teeth. The number of children to seal was 669 and in fact, 170 children were sealed, that is 25.8 % of the children. In 1998, on the 2135 examined children, 28.8 % were to seal (596 children), and 573 received a sealing. Only 106 of them had sealed teeth, 18.5 % of included children. The results show that in 1997 51.3 % of the children had a sound dentition and 66.3 % in 1998. In need of treatment was 16.1 % and 21.2 % of the children in 1997 and 1998 respectively.

Title A comparative study of dental caries prevalence in Prague, Czech

The city of Birmingham was fluoridated in 1964 and continues to this day. Prague was originally fluoridated in 1975 but the programme ceased in 1988 as a result of changes to the water supply. Dental caries prevalence in Birmingham children has remained stable since 1985 and remains low when compared to unfluoridated cities in the UK. Dental caries prevalence in Prague has risen since the fluoridation programme ceased, especially in age groups who have never benefited from fluoridated water. The aim of this study was to compare dental caries prevalence in 5- and 12- year-old children in the two cities in order to evaluate the effects of ceasing fluoridation in Prague and to monitor progress against the WHO 2000 goals. The results showed marked differences between the two cities, dmft at 5 years was 2.49 for Prague and 0.83 for Birmingham ($P<0.001$). The proportion of children caries free was 38.1% for Prague and 77.4% for Birmingham. For 12-year-old children the DMFT was 2.98 for Prague and 0.87 for Birmingham. Fluoridation of drinking water has allowed Birmingham to achieve and exceed the WHO goals for 2000 and 2010. The cessation of fluoridation in Prague has meant that the city is unlikely to achieve the 2000 goal and, unless the programme is recommenced in the very near future, the city will be unlikely to achieve the goal for 2010. Supported by the Grant Agency of The Ministry of Health of the Czech Republic, Grant 2791-2 and Birmingham Health Authority.