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In vivo Evaluation of Cheeses Using Intra-Oral Cariogenicity Testing.

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Cheeses are frequently recommended as snack foods which are safe for teeth. The aim of this study was to investigate the degree of demineralisation of human enamel slabs after exposure to four different cheddar cheeses using the intra-oral cariogenicity test of Koulourides et al (1976). Four cheddar cheeses were used in this study: slices, block, spread and toyz. 10% sucrose and 10% sorbitol solutions were used as positive and negative controls respectively. Five adult volunteers with a DMFS score ≥12 wore a lower removable appliance with one gauze covered human enamel slab (2mm x 3mm x 3mm) mounted on each side in the buccal flange. A baseline surface microhardness (SMH) test was performed for each enamel slab using a Knoop diamond with a 100g load. Each volunteer was instructed to immerse the appliance in the test or control solutions for 10 mins four times daily for a period of five days. 10g of the test cheeses were chewed by the volunteers for 60 secs to obtain a cheese/saliva slurry which was used to cover the enamel slabs for the 10 min immersion periods. SMH testing was repeated after the five day test periods. The mean±SD differences in SMH were: sucrose (+ve control) 21.42±4.55μ; sorbitol (-ve control) - 1.66±2.46μ; cheese slices 0.30±1.95μ; cheese block 0.93±0.94μ; cheese spread 2.34±0.53μ and cheese toyz 1.44±0.79μ. ANOVA and Tukey's test analysis showed that sucrose was significantly ($p<0.01$) different to all the test cheeses and to the sorbitol (-ve control). The only difference between the cheeses was for cheese spread versus cheese slices ($p<0.05$). In conclusion the cheeses tested showed low cariogenic potential and can be regarded as safe for teeth.

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The pattern of caries attack and implications for caries control in 16-year-old schoolchildren.

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Most national surveys of dental caries report the prevalence and mean experience using the DMFT and DMFS index. However these indices do not monitor the changing patterns of caries attack when overall caries start to decline. Consequently, the impact of restorative policies to reduce the DMF index cannot be estimated. The aim of the study was: (1) to determine the caries experience using the DMF index: and (2) to identify the predominant pattern of caries attack with a view to find the most effective solution to reduce the mean DMF index in this population.

The sample consists of 648, 16-year-old Malay schoolchildren in Perlis, taken from 5 randomly selected schools. Two schools were urban and 3 were rural. Clinical examination for caries status (DMF) and the pattern of caries attack were recorded for each subject. The mean DMFT was 3.43 (sd 3.04) and DMFS 5.14 (sd 5.65). This may be considered low for a 16-year-old population. However, only 18.8% were caries-free. Almost all restorative treatment needs had been met (99.4%). The biggest contributor to the DMFT index was from the F component (92%). The majority of the caries were concentrated on molar teeth (77.2%). More than two-thirds of the caries (67.5%) were exclusively occlusal caries. Almost 77% of the caries can be traced to a pit & fissure origin. Most of the restorations (87.3%) were simple (one surface) restorations. The most common material used for restorations was amalgam (86.1%).

Given this pattern of caries attack, it is concluded that to reduce the DMFT index in this population, the best strategy is to concentrate on the prevention of pit and fissure caries such as applying fissure sealants to the molars within the first three years after eruption.

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Dental implant service in Hong Kong – demand and supply.

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Dental implant has been shown to be successful and has become an important treatment in the replacement of missing teeth. However, no information on the provision of dental implant service in Hong Kong was available. The objectives of this study were to describe the prevalence of dental implant treatment among Hong Kong adults, to find out the implant training received by dentists, and to compare the characteristics of dentists who provided this treatment with those who did not. This study consisted of a mailed questionnaire survey of 160 randomly selected dentists in Hong Kong and a telephone survey of adult Chinese. 76 completed questionnaires were returned by the dentists and 314 adults were interviewed. Only 16% of the interviewees had heard of dental implant though the percentage was higher in the younger age and higher education groups. None of them had ever received dental implant. Most respondent dentists had received some form of dental implant training but their training varied a lot. One-quarter of them had provided some form of implant treatment to their patients. Proportionally more dentists who provided dental implant treatment had received training involving real patients than dentists who did not. In conclusion, the prevalence of dental implant treatment among Hong Kong adults was very low. Yet a significant percentage of Hong Kong dentists had provided or potentially can provide this treatment.

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Denture Quality and Patient Satisfaction in Elderly Chinese in Hong Kong.

H.C. SHUM* and J.E. DYSON (Oral Rehabilitation, Faculty of Dentistry, HKU).

Relatively little information is available on the denture status and wearing habits of the elderly (>65 years old) population in Hong Kong.

The aim of the present study was to investigate the relationships between denture quality, denture wearing habits and patient satisfaction in this group.

216 elderly individuals (64 male, 147 female) aged 65-96 (mean age 77) who possessed one or more partial or complete denture were included in the study. 81 of these were residents of one of three homes for the aged, a further 67 were attendees of one of two day care centres and the remaining 68 were patients attending the Reception and Primary Care Unit of the Prince Philip Dental Hospital, Hong Kong.

Participants were questioned about their satisfaction with their dentures and the periods for which the dentures were worn. Using criteria adapted from previous authors (Rise 1978), Magnusson 1986, Vigild 1987) the dentures were examined with respect to their extension, stability, retention, occlusal relationships, surface wear and presence of other defects.

Overall, 37% were edentulous in both jaws, and a further 24% were edentulous in one or other jaw. The remaining 39% had some teeth in both jaws.

Although most patients (62%) expressed no complaint about their dentures, many of these had relatively serious defects, particularly with respect to retention. Taking the groups overall, patient satisfaction did not appear to be associated with the variables related to denture quality except with respect to jaw relationship. However, when patient gender and age of the dentures were considered some significant relationships were found.

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The Profile of Partial Denture Patients Attending an Academic Instituition.

S.B.Keng* and P.L.Loh (Faculty of Dentistry, National University of Singapore)

Patients who exhibit partial edentulism require the replacement of lost teeth to restore oral function and appearance. The type of patients seen together with the clinical conditions they present would provide useful information to assist prosthodontic treatment planning. The aim of this study was to obtain basic information as regards to the presenting clinical conditions in the mouth together with the status of prosthesis in use. 310 clinical hospital denture patient records were randomly selected for the study. The data collected were from clinical charts used for removable prosthodontic dental student cases. The following related information were grouped together and extracted for the study.1) Patient: face form, prosthesis history, reasons seeking treatment ,satisfaction of present prosthesis, denture hygiene status, 2) OPG findings 3) Periodontal status. 4) Clinical Condition: occlusal classification, alveolar ridges, abutment teeth status, saddle replacements. The studied sample (137 male, 173 female), aged 17 to 58 years old presented with face form distribution of oval 46.3%, square 32.9%, and tapering 20.8%. Patients response to reason for making new prosthesis were poor function (51.5%), loose (38.9%), and aesthetics (9.6%). 50.3% complained of poor retention of their present denture while 49.7% did not. Of the patients who had worn previous dentures, 85% were acrylic type while 15% were made of chrome-cobalt base of which 60% showed poor denture hygiene. 67.5% of sample were satisfied with the present occlusion and masticatory efficiency. A general OPG survey showed only 7.3% having radio-opaque, radioluscent or mixed type findings Only 16% of abutment teeth examined showed slight mobility. Examination showed 66.6% with marginal gingivitis and 13.1% with periodontitis. Caries was uncontrolled in 27% of cases. Comparing upper and lower arches,37.4% of upper and 61.1% of lower presented with 2 saddle spaces of which only 8.5% of upper and 26.9% lower had poor ridges. The study showed that patients attending institutional clinics came to replace dentures more for functional reasons and their aesthetic expectations were not high.Their teeth, periodontal and denture conditions were not optimal and needed attention before commencement of prosthodontic treatment.

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Design of a Self-contained Apparatus for Air Turbine Handpiece Testing.

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The longevity of dental air turbine handpiece bearings has been of concern for a long time, but with routine autoclaving now the norm the focus of this concern becomes a major selection criterion. A satisfactory method of testing for longevity is therefore necessary. The variables relevant to dental air turbine handpiece testing have been identified by Dyson & Darvell (1997). The measurement of these, however, required cumbersome and expensive equipment and involved an elaborate and demanding technique. This approach, as such, would thus not be applicable in the dental surgery. It is the present purpose to describe the design and implementation of a self-contained apparatus for the necessary measurements which can be operated simply and conveniently. Mean bearing resistance and mean stall torque (to a precision of 0.001 mNm), as well as continuous output of the instantaneous values are available. Rotational position is resolved to 1/500 turn, and free running speed to ± 1/s is displayed. It will be the subject of future work to establish specific test protocols through the application of the procedure in a real service context. The equipment will have a variety of other applications in standards compliance testing, design development, and maintenance checks.

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The Discharge of Lubricant from Dental Air Turbine Handpieces.

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Although not well recognized in standard texts, lubricant discharged from dental equipment during restorative procedures may contaminate the field of operation and compromise the results of bonding techniques. The aim of the present study was to report on the discharge of lubricant from dental air turbine handpieces and to discuss its clinical significance in this context.

Experiment I. A marker dye (oil red) was added to a standard lubricant (KaVo Spray, KaVo, Germany) which was used to lubricate 4 examples of one brand of handpiece (Quietair, Midwest, Des Plaines, IL, U.S.A.) according to the manufacturer's instructions. Each handpiece was then allowed to run on air at the manufacturers' recommended pressure at a fixed distance and position over the paper of a chart recorder. Observations were made of the oil discharged on to the chart over a 40 minute period.

Experiment II. A second experiment was undertaken to measure the actual amount of oil discharged over time. One example of each of seven different models of handpiece was tested. For this, each handpiece was dismantled, cleaned and flushed to remove lubricant from internal and external surfaces, dried and weighed. After standard lubrication using degassed KaVo Spray, the handpiece was reweighed. It was then allowed to run on air at controlled pressure for periods up to a total of 240 minutes. At fixed time intervals the handpiece was weighed to determine the amount of lubricant discharged.

All of the handpieces in both experiments demonstrated continued discharge of lubricant over the entire test period, most oil, however, being discharged in the first minute. Analysis of the data from Experiment II, enabled an equation (including two fitted handpiece variables) to be found which described the behaviour of all the handpieces.

It was concluded that, after air turbine handpiece use, tooth surfaces should be degreased prior to carrying out bonding procedures.

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DENTAL PATIENTS' RIGHTS IN HONG KONG

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In Hong Kong, patients' rights and responsibilities became more concerned in recent years. Different authorities have proposed their patients' charters that were mainly related to the medical services. However, no related charter or guidelines has been made in dentistry. This research aimed to study the knowledge of the public on patients' rights and the extent of the public in exercising their rights in dental services. A telephone survey was conducted with a structured questionnaire on Hong Kong Chinese aged 25-49 with dental experience. A total of 1626 calls were made, of which 408 were eligible and 401 questionnaires were completed. Results showed that 67% of the respondents knew at least 10 out of 14 rights. However, 65% of the respondents had exercised at most 3 out of 12 rights. It was found that the more the respondent knew about his/her rights, the more he/she exercised them. The ratio between the number of rights known and the number of rights exercised was around 1/3. A significant positive association was found between education level and the knowledge of patients' rights. Regular dental users had better knowledge than irregular users. Females were found to exercise more rights than males. The commonest reasons for not exercising the specific rights were "trust the dentist" and "dentist has done". In conclusion, it was found that the public knew a considerable amount of patients' rights but further reinforcement in educating the public about the rights of accessing one's own medical information, to receive quality dental care such as treatments with adequate pain control and to be informed of the alternative treatment options was necessary. Approximately one third of the patients' rights the public known had been exercised. This proportion was relatively constant no matter how many rights the respondents knew.