



Title	ART restorations in Chinese schoolchildren - six-year results
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35 Evaluation of the Chinese version of the Oral Assessment in Down Syndrome (OADS) questionnaire. D O'DONNELL* and C McGRATH (Faculty of Dentistry, University of Hong Kong, Hong Kong)

OBJECTIVE: To evaluate a Chinese version of the Oral Assessment in Down Syndrome (OADS) questionnaire among individuals with Down syndrome (DS) in Hong Kong. **METHOD:** Primary caregivers (PCG) of individuals with DS attending an outreach dental programme were recruited to participate in the study. PCG's completed a 31-item questionnaire covering seven domains related to oral health: access, function, development, signs, pain, disability and a global rating of oral health status. The OADS measure was assessed for validity and reliability. **RESULTS:** Sixty-one PCG participated in the study. There was a number of access issues among the DS group. More reported difficulties accessing a dentist (51%, 31) than a medical doctor (39%, 24). Many reported functional issues (67%, 41) reporting that their child had difficulty eating certain types of foods. Over forty percent (43%, 26) reported developmental issues, claimed that their child's primary teeth took a long time to exfoliate. Common signs reported included bad breath (59%, 36) and tooth grinding (48%, 29). Approximately half (48%, 29) of the group claimed their child had in the past suffered from some form of dental pain. Few (8%, 5) perceived any disability issues. However, while most rated their child's general health as good or excellent they were less likely to rate the child's oral health as good or excellent. Various OADS domain scores were associated with oral health behaviour: performance of oral hygiene ($P<0.05$), use of oral hygiene aids ($P<0.05$), and with clinical oral health status: presence of decayed teeth ($P<0.05$). This demonstrated the measure discriminative ability. The internal reliability was acceptable with Cronbach alpha values of >0.69 for domains with Likert responses. The study concludes that the Chinese version of the Oral-Assessment-in-Down-Syndrome (OADS) questionnaire is a valid and reliable assessment tool.

36 A psychosocial study of the impact of cervical dentine sensitivity on quality of life. EF CORBET*, C McGRATH and M Wong (Faculty of Dentistry, University of Hong Kong, Hong Kong)

Aside from the pain effects of cervical dentine sensitivity (CDS), little is known about how CDS may affect peoples' day-to-day living or life quality. **OBJECTIVES:** To assess the psychosocial impact of CDS, and to determine associations between self-reported experiences of CDS, clinical findings of CDS and psychosocial impact. **METHODS:** Patients (178) attending a dental hygienist clinic were asked about their experiences of CDS, underwent an evaporation assessment for CDS, and the impact of their oral health status on their life quality (psychosocial impact) was assessed (using the short form Oral Health Impact Profile, OHIP-14). **RESULTS:** Most, 58%, claimed to have experienced CDS and 76% had clinical evidence of CDS. The perceived impact of oral health on their life quality (OHQOL) was immense; 89% subjects reported experiencing one or more psychosocial impacts. Their OHQOL was associated with self-reported experience ($P<0.05$), severity ($P<0.05$) and frequency of CDS ($P<0.01$), and whether they had sought care for CDS ($P<0.05$). In addition, OHQOL was associated with clinical findings such as the presence ($P<0.01$), severity ($P<0.05$) and location ($P<0.05$) of CDS. The study concludes that self-reported experiences of CDS and clinical findings of CDS are associated with how oral health affects day-to-day living and life quality. This has implications for understanding the impact of CDS on patients' lives and in evaluating outcomes in the management of CDS.

37 Oral health survey in Macau students: last 5 years evolution. CHAN IS*, NGAI WIL, CALADO R, CU ST (Macau SAR Health Department)

To determine the oral health level amongst MSAR school population in 2001 and the analysis of its evolution since 1996. The dental screening was made of a randomized and representative sample of the Macau school population with ages 6, 9 and 12 (stratified random sampling). The findings were that the 6 years old have a DMFT index of 4.45 ± 4.14 (S.D.) and 83% of them had temporary teeth decayed. At 12, DMFT index is 2.70 ± 2.70 (S.D.) and 75% of that youth had permanent teeth decayed. However, comparing the DMFT of those with retained sealants and those without, amongst the 9 and 12 years old students, the differences are very significant (around half the values) and the difference of decay experience between these two groups is also significant (Chi-square is 8.7 and 5.0, for 9 and 12 years old students, respectively). Comparing further the 2001 results with the 1996 values, the dmft of 6 and 9 year olds decreased ($p<0.0436$ and $p<0.0006$, respectively, Mann Whitney Test), while the DMFT of 9 and 12 year olds have no significant differences ($p=0.3085$ and $p=0.4761$, respectively, Mann Whitney Test). Moreover, the Patient Hygiene Performance Index of the 12 year old group decreased by 10%, and is now 0.46. The conclusion is that the Macau population has a moderate level of dental caries, and although some of its preventive activities are efficient, it needs to review its strategies in order to improve their impact on the dental health of Macau school population. This study was supported by the Macau SAR Health Department.

38 Clinical and SEM Evaluation of Direct and Indirect Relined Removable Partial Dentures Using a Light-curing Resin. A ZOELLNER^{1,3*}, S ZOELLNER¹, Z SCOBEL², HP WEBER³ (University of Witten/Herdecke, Germany; ²The Forsyth Institute, Boston, USA; ³Harvard School of Dental Medicine, Boston, USA)

Objectives: The chairside, direct relining of Removable Partial Dentures (RPD) may be a timesaving alternative to indirect relining involving the laboratory. It was the aim of the present study to compare the results of both techniques in a clinical, prospective trial. **Methods:** 10 RPDs were relined with an indirect and 20 RPDs with a direct procedure using the light-curing denture base resin Versyo.com[®] III (Heraeus-Kulzer). The results were evaluated directly after relining (baseline-bl), after 1 and after 3 months. **Clinical, Photographical and Micromorphological criteria (CPM-criteria, Gaengler 1999)** were applied including form (grade 0-5), surface quality (grade 0-3), contact denture base/relining material (grade 0-3), clinical quality (grade 0-1) and surface roughness (grade 0-3). The SEM evaluation (JSM-6400 Scanning Microscope[®], JEOL) was based on replicas of the relined areas (Mirapont[®], Hager and Werken). **Results:** The clinical evaluation of the laboratory relining revealed no signs of failure (grade 0 for all parameters). The SEM evaluation documented a slight surface roughness in localized areas (bl; 3 mos: 0.3; 0.4). After direct relining localized visible imperfections between denture base and relining material were diagnosed (bl; 1 mos: 3 mos: 0.2; 0.1; 0.3). The clinical quality was rated 0.2 after 3 months. The SEM evaluation revealed an increased surface roughness compared to the laboratory technique (bl; 3 mos: 0.6; 0.8). A gap formation between denture base and relining material was documented (bl; 3 mos: 0.1; 0.3). **Conclusions:** Within the limits of this study it can be concluded, that indirect relining with Versyo.com[®] lead to excellent results. The clinical quality of the direct technique was slightly reduced, probably due to moisture contact of the conditioned base during relining intraorally. axel.zoellner@hdsd.harvard.edu

39 Hydrolytic degradation of acid-etched, dentin collagen matrix aged under aseptic condition. SHY WEI¹, FR TAY¹, CKY YIU¹, M HASHIMOTO², DH PASHLEY³ and RL MOURÃO⁴ (Univ of Hong Kong, China; ²Hokkaido Univ, Japan; ³Medical College of Georgia, USA; ⁴Federal University of Minas Gerais, Brazil)

Previous studies on durability of resin-dentin bonds showed that hydrolytic degradation of both the resin and the demineralized collagen matrix (DCM) components may occur. Using acid-etched dentin that were aged in distilled water for 500 days, Hashimoto *et al.* (2002) observed that the DCM was almost completely depleted up to the demineralization front. However, colonization of bacteria was consistently observed. This study examined acid-etched dentin specimens that were aged under aseptic condition for 250 days. Flat dentin surfaces were created in non-carious, extracted human molars and acid-etched with 32% phosphoric acid for 15s. Each tooth was stored in a 5 ml aliquot of artificial saliva containing 0.1% sodium azide, and sealed with a surface layer of mineral oil. Additional teeth were similarly etched and stored in pure mineral oil as the control. Specimens were retrieved after 24 h and 250 days, fixed in Kamovsky's fixative, and processed for TEM examination. Undemineralized, unstained sections were first examined to determine the extent of the DCM, followed by demineralized stained sections to examine the status of the collagen fibrils. In the 24 h experimental and 250-day control specimens, a 5-8 μ m thick layer of DCM was observed, with dense, banded collagen fibrils separated by narrow interfibrillar spaces. Conversely, collagen fibrils were almost completely or completely depleted in the 250-day experimental specimens, in the absence of bacteria colonization. The fibrils that remained were sparsely distributed but still exhibited cross banding. We hypothesize that hydrolytic degradation of the DCM occurs, in the absence of bacteria, via host matrix metalloproteinases from the mineralized dentin matrix (Tjäderhane *et al.*, 2002) that are released and activated during acid-etching of dentin. This has to be further confirmed using dentin that is autoclaved to deactivate these enzymes before acid-etching, or using acid-etched dentin that is aged with protease inhibitors.

40 ART Restorations in Chinese schoolchildren - six-year results. HU DY^{1*}, LO ECM², HOLMGREN CJ², WAN HC¹ (Dept of Preventive Dentistry, Sichuan University, Chengdu; ²Faculty of Dentistry, University of Hong Kong, Hong Kong)

Objective: To evaluate longitudinally ART restorations placed in Chinese school children under field conditions. **Method:** A total of 269 Class I ART restorations (221 small and 48 large) were placed in 175 children, aged 11-14 years, by five dentists in four secondary schools in Deyang, Sichuan Province, China. Standard instruments and procedures for ART were used. The restorative material used was a high-strength glass-ionomer (Ketac-Bond, 3M/ESPE). The status of the restorations was evaluated annually over 6 years after placement by the same examiner who had not been involved in the placement of the restorations using explorers, mouth-mirrors and an intra-oral fibre-optic light. Silicon impressions were taken on a random one-third sample of the restorations in every examination and these were poured in stone casts for indirect assessment of wear of material. **Results:** A total of 155 restorations (57.6% of the original) were examined after 6 years. The cumulative survival rates of the small Class I restorations (\leq half occlusal width) after 2, 4 and 6 years were 96%, 88% and 75% respectively. The corresponding figures for the large Class I restorations (\leq half occlusal width) were 83%, 71% and 59%, which were significantly lower ($p<0.002$). The two most common modes of failure were loss of the restoration and replacement by another restoration. The annual net wear rate of the restorations in the first year after placement was 48 μ m and thereafter remained at around 20-30 μ m. Furthermore, the wear rates of the small and large restorations were found to be similar ($p>0.05$). **Conclusion:** The majority of the Class I ART restorations, especially the small ones, performed well over the 6 years of follow-up. ART is an effective treatment for caries in pits and fissures. This study was supported by 3M/ESPE.