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Abstracts

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was 2.07 ± 1.78 (SD) per patient. After 10 years, there was a reduction of 29% amalgam fillings and an increase of 75% resin and other materials. An average of 1.86 ± 1.80 restorations per patient was found. 78 (57%) restorations were made due to recurrent caries. 41 restorations were not replaced. After 20 years there has been a replacement of 71 restorations (70 due to recurrent caries and 1 fracture), 62 remained acceptable, 28 restorations were restored with amalgam, 29 photo polymerizable resins; 8 with cast metal restorations and 4 teeth were extracted. An average of 2.8 ± 1.80 restorations per patient were found. Recurrent caries were most often the reason for replacement of the fillings ($p < 0.05$, chi-square). Amalgam fillings were less frequently replaced than resin fillings ($p < 0.05$, chi-square). The criteria of renewal of dental restorations were mainly secondary caries. Restorations made by photo polymerizable resin showed more recurrent caries during their lifetime than amalgam. Since the initial treatment until the 20-year follow-up, there was a repetitive restoration cycle showing the need for a re-orientation to replace disease focus to oral health promotion both in teachers and dental students in UERJ.

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Use of Conscious Sedation in the Management of Carious Lesions in Paediatric Dental Patients

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Objective: In paediatric dentistry, anxiety or behavioural impairments often challenge dental treatments. Sedation procedures can then be a helpful tool. The present study aimed to evaluate the success rate of dental procedures of a 50% nitrous oxide in oxygen premix for the management of dental caries and their complications on children scheduled for dental treatments under sedation in the Nice University hospital, in France. **Methods:** This one-year (2012) clinical study examined first-visit sedation performed in healthy children who were non-compliant with dental treatment. They were aged between 2 and 16 years, ASA I or II, had no mental or motor retardation. Parents gave their informed consent. The type of dental treatment performed was recorded. The session was considered successful if the planned dental treatment could be carried out whereas it was considered as a failure otherwise. Logistic regression analysis, conducted using SPSS 18.0 for Windows, using a stepwise selection of independent variables. The dependent variable was the success of sedation. **Results:** Among our 60 patients, 53.3% were male. The average age was 6.0 ± 3.3 years and the mean sedation time was 23.5 ± 9.2 min. The overall success rate was 85.0%. Only minor side effects were reported (6.7%) and they were more frequent for females (Fisher exact test $p = 0.041$). In multivariate modelling, the association between gender and success disappeared and side effects were shown to negatively affect the success rate ($p = 0.042$). **Conclusion:** Provided this technique is used by dentists skills in sedation, with the appropriate staff and equipment at their disposal, moderate sedation can be successfully used in the clinical management of paediatric dental patients and represents a reliable alternative to general anesthesia.

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Caries Incidence and Progression in Young Adults: Baseline Clinical Data

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This is a prospective cohort study on oral health of young adults aged 18–30 years. The aims were: (1) to analyze caries incidence and progression at clinical as well as radiographic levels; (2) to identify predictors for caries incidence and progression in early adulthood. The subjects were 612 new patients seeking treatment at the University Hospital, Brussels, Belgium in 2010–2011. The participants answered a validated questionnaire about their socio-demographics, oral health related behavior and attitudes, and patient-reported outcomes. Caries experience was summarized in DMFT/S scores ($D_{\geq 1}$ = decayed active and inactive at non-cavitated and cavitated levels; $D_{\geq 3}$ = decayed active and inactive at cavitated dentine level; M = missing due to caries, F = filled, T = tooth, S = surface). Inter-examiner reliability of caries scores showed kappa of 0.86. Belgian citizens represented 80% and non-west European 10% of the sample (55.7% female and 44.3% male). Patients were residents in the three regions of Belgium: Brussels (57.4%), Wallonia (22.3%) and Flanders (20.3%). Poor oral health was perceived by 13.0% of patients. About half of the sample had experienced pain or discomfort due to caries whereas periodontal conditions were mentioned in 15.5% of cases only. A limited number of patients were diagnosed as caries-free at $D_{\geq 3}$ MFS level (13%). Difference between means $D_{\geq 1}$ MFT 7.05 (± 2.94) and $D_{\geq 3}$ MFT 5.51 (± 4.75) was significant (t test, $p < 0.0001$). The same trend was observed at surface level, 13.58 (± 14.14) and 11.43 (± 12.85), respectively ($p < 0.0001$). Occlusal surfaces had significant higher $D_{\geq 1}$ MFS mean scores of 5.19 (± 3.97) compared to approximal surfaces of posterior teeth with a mean of 4.00 (± 5.25) ($p < 0.0001$). In conclusion, our baseline data indicate that the oral health of individuals deteriorates considerably in early adulthood, i.e. between the age of 18 and 30 years.

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Caries Incidence and Progression in Young Adults: Baseline Radiographic Data

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The oral health status of populations changes from adolescence to early adulthood with a considerable reduction of the percentage of caries-free individuals. Studies examining caries incidence and

progression in young adults might contribute to a better understanding of this phenomenon and support treatment decisions in daily practice. For this purpose, we recruited 612 18–30-year-old new patients seeking treatment at the University Hospital in 2010–2011 in Brussels, Belgium. The patients answered a validated questionnaire about their socio-demographics, oral health-related behavior and attitudes, as well as patient-reported outcomes. Periodontal status of selected teeth and caries experience were assessed at the clinical examination. Standardized bitewing radiographs were taken from all new patients. The approximal surfaces were classified according to the scoring system: 0 = no visible radiolucency, 1 = radiolucency in the outer half of the enamel, 2 = radiolucency in the inner half of the enamel up to the enamel-dentin border, 3 = radiolucency with a broken enamel-dentin border but no obvious progression in the dentin, 4 = radiolucency in the outer half of dentin, 5 = radiolucency in the inner half of the dentin [Mèjare et al.: *Caries Res* 2004;38:130–141]. For occlusal surfaces scores 0, 3, 4 and 5 were applied. Restored surfaces were also recorded. Intra-examiner reliability of caries scores showed kappa of 0.91. Half of the patients were university students or students in other higher education. Brushing more than once a day and interdental cleaning were reported by 60 and 23% of the patients, respectively. The number of patients diagnosed as caries-free at score 3 or higher was limited to 19%. The total mean $D_{\geq 1}$ MFS was 9.34 (± 9.15) with decayed component of 3.46 (± 4.88). The contribution of approximal and occlusal surfaces were significantly different, 4.99 (± 5.91) and 4.34 (± 3.87), respectively (t test, $p < 0.0001$). The fact that caries lesions represented one third of mean caries experience of the studied population supports the view that dental disease is still a problem in early adulthood.

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Approximal ART Restorations Using a Flowable Glass-Ionomer Cement as Liner

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Aim: Good survival rates for single-surface ART restorations have been reported while multi-surface ART restorations have not shown similar results. The high-viscosity consistency of the glass ionomer cement (GIC) may lead to its incorrect adaptation into the cavity and thus to restoration failure. The aim of this study was to evaluate the survival rate of approximal ART restorations using a flowable layer of GIC as liner [Bonifácio et al.: *J Dent Child* (Chic) 2010;7:12–16], comparing to conventional ART. **Methods:** A total of 207 primary molars with approximal caries lesions were selected in 6–7-year-old children in Barueri city, Brazil. The patients were randomly allocated to two groups, both restored with Fuji IX (GC Corp): G1 – conventional restoration and G2 – two layers technique. After caries removal with hand instruments, G1 was restored with conventional consistency and G2 was restored using two layers GIC technique (first layer with flowable consistency –

powder/liquid ratio 1:2 and second layer mixed conventionally). All restorations were evaluated after 1, 6, 12, 18 and 30 months according to Roeleveld et al. [*Eur Arch Paediatr Dent* 2006;7:85–91] criteria. Restoration survival was evaluated using Kaplan-Meier survival and logistic regression test was used for testing association with clinical factors ($\alpha = 5$). **Results:** There was difference in success rate between techniques after 30 months, with better performance of two layers technique (OR = 2.29, IC = 1.14–4.60, $p = 0.020$). The overall survival rate of restorations was 60% and the survival rate per group was G1 = 67% and G2 = 59%. No studied factors had an influence in the survival of restorations. The application of a flowable GIC layer in approximal cavities before the insertion of a regular GIC layer improved survival of approximal ART restoration.

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Clinical Trial of an Antimicrobial Pit and Fissure Sealant

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Aim: The aim of this study was to evaluate pits/fissure sealant containing an organo-selenium for clinical retention, plaque and caries formation. **Methods:** 120 subjects, age 7–20 years, at either moderate or high caries risk status, received SeLECT Defense sealantTM (SD, a selenium-containing sealant) on either left or right side of the dentition and UltraSeal XT PlusTM (UXT) on the corresponding tooth on the opposite side. Sealants were evaluated every 3 months for 12 months for clinical retention, plaque and caries formation around sealant. Lost sealants were re-applied but sealant was considered as failure in future analysis. Differences in evaluated factors between UXT and SD at each assessment period were analyzed statistically by McNemar's test. Logistic regression was used to test any association between evaluated factors and other variables. Retention was significantly ($p = 0.0004$) higher in SD (96%) than UXT (81%) after 12 months. No significant difference in retention between the two sealants at 3, 6 or 9 months. SD exhibited 100% prevention of plaque growth around sealant, while plaque growth was observed around 7 and 12% of UXT at 9th and 12th months respectively. No caries formation was observed around either sealant. **Conclusion:** SeLECT DefenseTM sealant completely prevented plaque growth around sealant with better clinical retention than UltraSeal XT Plus, which offered only limited protection against plaque accumulation.

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