

# ***ABSTRACTS***

XXVI Dental Meeting of Piracicaba

XI International Dental Meeting

III Uniodonto Dental Meeting



**XXVI JORNADA  
ODONTOLÓGICA DE  
PIRACICABA**

**XI CONGRESSO INTERNACIONAL DE ODONTOLOGIA**



**TERCEIRO  
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UNIODONTO**

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## All abstracts appear as submitted by the authors without editing

**β-CATENIN AND ITS RELATION TO MECHANICAL DEFORMATION ALVEOLAR BONE - A STUDY CONDUCTED IN RATS WITH TOOTH LOSS**

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**Aim:** The aim of this study was to analyze the relationship between alveolar bone deformation and B-catenin expression levels in the occlusal overload environment caused by dental loss in adult rats.

**Method:** Twenty-four male rats (*Rattus norvegicus albinus*) at 2 months of age, were used. The upper central incisor was extracted (right side), and euthanasia occurred in periods 5 (n = 6), 7 (n = 6) and 14 (n = 6) days after day 0. In the control group (n = 6), the dentition was maintained without dental extraction and the euthanasia occurred within 14 days after day 0. One head from the control group was submitted to computerized microtomography and the three-dimensional reconstruction of the skull and jaw. The computational simulation for finite element analysis were performed to simulate the maximum bite force in the incisors. The strain patterns were evaluated after the application of bite force. The left jaw was removed and submitted to immunohistochemical protocol to mark the expression of the primary B-catenin antibody (antibody ab6302, Abcam, USA).

**Results:** The results obtained in Strain analysis showed uniform distribution and the regions with bone deformation were related to the analysis of B-catenin expression. The number of osteocytes with positive expression of B-catenin antibody was concentrated in lingual alveolar bone and the ANOVA test showed significative differences (p= 0.00303) for 14 days group when we compared all groups with the control.

**Conclusion:** The findings of the present study were in accordance with our hypothesis that the condition of dental loss can cause the expression of B-catenin and by the regimens of bone deformation.

**3D PRINTING IN DENTAL PROSTHESES: BIOMECHANICAL BEHAVIOR COMPARATIVE STUDY OF TWO DIFFERENT MANUFACTURING SYSTEMS**

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**Aim:** This in vitro study evaluated the influence of milling and 3D printing (Selective Laser Melting (SLM) and Electron Beam Melting (EBM)) CAD-CAM systems in full-arch fixed dental prostheses (FAFDPs) manufacturing on marginal fit, screw loosening, strain and stress in the implant-support system.

**Method:** Fifteen maxillary FAFDPs were obtained in Ti-6Al-4V alloy: milling (n=5), SLM (n=5) and EBM (n=5). The marginal fit was analyzed according to the single-screw test. Prosthetic screws were tightened with 10-Ncm, retightened after 10 minutes and the screw loosening value was obtained after 24h with a digital torque meter. Strain gauge analysis measured the strain induced in the mini abutment analogs and photoelastic analysis investigated stress around the implants. The results were submitted to one-way ANOVA followed by Tukey HSD test ( $\alpha=0.05$ ).

**Results:** Milling frameworks presented higher marginal fit values when compared with SLM (p<0.0001) and EBM (p<0.0001). Screw loosening values of milling frameworks were higher than SLM (p<0.0001) and EBM (p=0.008). 3D printing frameworks did not show different marginal fit (p=0.661) nor screw loosening (p=0.168) values between each other. Strain gauge analysis did not present differences between groups (p=0.178). Photoelastic stress values were similar between milling and SLM (p=0.213) and between SLM and EBM (p=0.586), and different stress values were found between milling and EBM (p=0.039).

**Conclusion:** 3D printing technologies did not improve FAFDPs marginal fit, screw loosening, and stress values when compared with milling technology. Corrective techniques should be investigated to improve these results.

**A MINIMALLY INVASIVE TECHNIQUES FOR THE REESTABLISHMENT OF ANTERIOR AESTHETIC OF FLUOROSSED TEETH: A CASE REPORT**

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**Aim:** This case report describes the step-by-step that was performed for the treatment of Fluorose spots.

**Method:** An extrafine granular diamond bit was used to remove surface enamel followed by the use of an Opalustre enamel Microabrasion compound (Ultradent Products Inc.). Then, the application of fluorine and a fluorine-containing paste was performed to re-establish the polishing of the enamel surface. The teeth were then bleached with 10% carbamide peroxide (Power Bleaching BM4).

**Conclusion:** From the microabrasion technique, it was possible to remove most of the superficial spots present in the enamel, and the bleaching allowed to obtain a uniformization of the rest of the spots, reaching the aesthetic result desired by the patient.

**A POSSIBLE ASSOCIATION BETWEEN DESQUAMATIVE GINGIVITIS AND FABRY'S DISEASE: CASE REPORT**

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**Aim:** The aim of this case is reporting a possible association between desquamative gingivitis and Fabry's disease

**Method:** Fabry's disease is an X-linked metabolic disease caused by the deficiency of the lysosomal enzyme  $\alpha$ -galactosidase A. We report a case of a 55-year-old woman, with previous diagnosis of Fabry's disease, that was referred complaining of pain in gingiva for about one year. The physical examination revealed short fingers, angiokeratomas in the neck, fissured

tongue and desquamative gingivitis. An incisional biopsy was performed in the gingival lesions and the histopathological analysis revealed a subepithelial blister, compatible with the diagnosis of mucous membrane pemphigoid. A topical corticosteroid therapy was instituted associated to conventional periodontal treatment. After three weeks, all areas of erythema or ulceration were healed, and the symptoms had disappeared.

**Conclusion:** Fabry's disease is a rare disorder with a few cases of oral abnormalities described. It is reported a high incidence of autoantibodies in Fabry's disease patients, which may explicate the development of the desquamative gingivitis condition.

**A SECOND NON-SURGICAL AND SURGICAL RETREATMENTS IN A PERSISTENT APICAL PERIODONTITIS - A CASE REPORT**

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**Aim:** To present a case report of a second conventional retreatment followed by a second surgical retreatment in a persistent endodontic lesion with fistula and symptomatology.

**Method:** A 44-year-old female patient was referred complaining of moderate pain associated with her lower incisors. After clinical and radiographic examination was detected that teeth 31 and 41 were endodontic treated. Tooth 42 had fistula, an attempt of endodontic surgery with amalgam used as a root-end filling material and periapical lesion that affected the other teeth either. Conventional endodontic retreatment was fulfilled in teeth 31 and 41. Tooth 42 was mechanical-chemical prepared and its obturation was performed with MTA in all long the root canal, because of the presence of amalgam in the apical region. In a follow-up after three months, the fistula was persistent indicating failure and the need of surgical endodontic retreatment. The apical region was resected, a retrograde cavity prepared with ultrasonic inserts and retrograde filling was performed using MTA as root-end filling material. After 2 years, the area of the lesion was completely healed, the teeth were asymptomatic and in function.

**Conclusion:** Surgical endodontic retreatment is indicated in cases of conventional retreatment failure. However, a second approach could be performed in particular cases which better outcomes may be expected, instead of extracting the teeth.

**A SYSTEMATIC REVIEW OF THE PINK TOOTH PHENOMENON IN DENTAL AUTOPSIES REPORTED THROUGHOUT THE FORENSIC LITERATURE**

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**Aim:** The pink tooth phenomenon (PTP) is thanatological sign that may be detected during dental autopsies. The interpretation of this phenomenon in the routine of medico-legal services remains uncertain in the scientific literature. This systematic literature review aimed at screening the available studies on the PTP and to retrieve case-specific characteristics reported in dental autopsies.

**Method:** The study was designed following PRISMA guidelines. Seven main databases were considering (PubMed, SciELO, Embase, Scopus, Web of Science, LILACS and Science Direct) in the search for descriptive studies, namely case reports and case series. Three additional databases were searched for "grey literature" (OATD, OpenThesis and OpenGrey). Risk of bias was assessed with The Joanna Briggs Institute Appraisal tool. Poisson's regression model with robust variation was performed as supplementary statistical analysis.

**Results:** The search resulted in 1.004 articles, out of which 11 were eligible and presented low risk of bias. Seventy-one cases reporting the PTP were detected. Most of the victims were males. Victims' age ranged between 4 and 85 years (mean age: 31.13  $\pm$  13.32). Out of the postmortem pink teeth, 163 were anterior (incisors and canines) and 168 were posterior (premolars and molars).

**Conclusion:** Based on the study design, outcomes and limitations, the occurrence of the PTP varied from case to case - confirming that this is an unspecific phenomenon in Forensic Dentistry.

**ACCESS TO TREATMENT OF DIABETES MELLITUS THROUGH JUDICIALIZATION**

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**Aim:** To analyze the judicial actions for access to medicines, supplies, and materials for the treatment of Diabetes in SUS focusing on health management.

**Method:** This is an exploratory, descriptive study based on secondary data obtained in the judgments of the Court of Justice of São Paulo, 2006- 2016.

**Results:** Of the 645 municipalities in the State of São Paulo, 127 were identified in the survey; and of these, 12 counties concentrated a greater number of demands. In 89.67% of the actions analyzed, the plaintiffs sought access to medicines, (61% of the drugs not included in official lists of the SUS, and 28.5% of constant medicines and free coverage), followed by inputs (7.99%) and equipment 4.34%). São Paulo, Sorocaba, Jundiaí, Aracatuba, Bauri, Ribeirão Preto, Piracicaba, and São José do Rio Preto accounted for 60.12% of the demands for medicines and supplies for the treatment of Diabetes Mellitus. Diabetes Mellitus was the most prevalent pathology (30.58%), involving the judicialization by long-acting analog insulins such as LantusR (Glargina) LevemirR (Detemir) and LisproR (Humalog), not yet incorporated in the official lists. Other demands refer to inputs and equipment (12%), requesting, among others, tapes for capillary glycemia, lancets, syringes, and glucometers.

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**Conclusion:** It is concluded that the Judiciary for access to treatment of Diabetes in the State of São Paulo requires a set of broader political and management responses, since it involves pressure on the SUS for the incorporation of certain drugs in official lists of free distribution, as well as failures in the acquisition, dispensing and distribution of drugs, supplies, and materials.

#### ACTION INTEGRATED IN COMMUNITY DENTISTRY: AN EXPERIENCE OF TEACHING / EXTENSION INTEGRATION

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Describe the experience of a project to extend the course of Dentistry of Unicamp that worked through a partnership between Unicamp / Piracicaba Dental School and City Hall of a small city. We discuss the history of the extension project, its methodology of operation, the characteristics of the activities, the receptivity of the community involved.

**Method:** Experience report.

**Results:** The Rio de Sorrisos project is developed by students in Dentistry - Unicamp with the objective of promoting dental care in children and adolescents, and to instruct in the prevention of diseases and health promotion, especially oral health. The students promoted cultural and educational actions with children and adolescents, including dental care, instruction in oral hygiene and supply of oral hygiene material. Guidance was also given by workshops on oral health, healthy eating instruction. A total of 210 children and adolescents, aged 8 to 15 years old, were 47.1% male and 52.9% female. A total of 247 dental treatments were performed, 68 treatments atraumatic restorative, 1 canal treatment, 13 teeth extraction, 42 supragingival scrapings, 32 restorations of photopolymerizable resin, 91 sealants.

**Conclusion:** The integration of students with the community allowed the training of professionals trained to act in prevention and aware of their role in attending to social demands.

#### AESTHETIC REESTABLISHMENT ON SINGLE IMPLANT IN ANTERIOR MAXILA: A CASE REPORT

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**Aim:** Nowadays the use of osseointegrated implants as a prosthodontic solution to an early loss of tooth is already commonly used on the clinics, but to a satisfactory treatment beyond the osteointegration the aesthetic aspect has to be reached, mainly to implants on anterior maxilla. When not reached may not result in a long term establish of the implant and social problems. This failure may be caused by failure to plan, or by bone and tissue remodeling after the implant load, lack of facial bone concentration, and absence of adequate keratinized mucosa, not allowing a soft tissue in the region after implant installation, considering the need for a new procedure seeking a new aesthetic.

**Method:** Patient PK, 25 years, search the dental school of Piracicaba because of peri-implant soft tissue recession in the anterior region of the maxilla. After the periodontal and prosthetic examinations, a surgical procedure was performed in two stages and a replacement of the prosthesis. The first surgery had the objective to the increased thickness of the peri-implant tissue, then was performed a connective graft removed from the tuber region. The second surgery sought a profile of zenith through a new connective graft and a coronal displacement of the tissue through a new connective graft as an adjunct to coronally advanced flap.

**Results:**

**Conclusion:** This case report shows that an interdisciplinary plan should be performed to reestablish the aesthetic aspects of implant, and with the correct diagnosis, a periodontal plastic surgery can establish a better esthetic outcome.

#### AESTHETIC RESOLUTION WITH MINIMALLY INVASIVE TECHNIQUES

CERQUEIRA; GABRIELA ALVES; DAMASCENO; JANAINA EMANUELA; PEDREIRA; PRISCILA REGIS; BUENO; THIAGO OZI; PALLONE; MARIANA VALERIO; FAVA THAIS ESCOBAR; MARCHI; GISELLE MARIA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This clinical article describes the case report of a patient in need of aesthetic and corrective solution for the anterior teeth, who presented a disharmonic smile, in its shape and color, besides the gingival smile.

**Method:** As a result, gingivoplasty, tooth whitening and composite resin restoration were performed. Gingivoplasty with bone preservation was possible because it had a large volume of soft tissues and a distance  $\geq 2$  mm from the bony crest to the cementum enamel junction. Dental bleaching with the use of associated techniques: Whitening HP 35% and supervised homemaker whitening (Whiteness Perfect 10%) were performed, and later the "palatine barrier technique" using the direct IPS Empress resin was performed from of a diagnostic waxing to begin the restorative procedure of the anterior teeth.

**Results:**

**Conclusion:** The use of minimally invasive techniques is an effective alternative for rehabilitation of anterior teeth. As in the case, gingivoplasty, dental bleaching with associated techniques and restorations with nanocomposites have allowed satisfactory aesthetic results, even more in relation to tooth preservation, especially in young patients.

#### AGROCHEMICALS AND THE IMPACT ON PUBLIC HEALTH

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To know the problems related to the consumption of pesticides in Brazil and their impact

on public health, focusing on aspects related to handling, more contaminated foods, related disorders, and alternatives to their use.

**Method:** This is a literature review in the database, Scielo, Google academic, Ministry of Health.

**Results:** Brazil is one of the largest consumers of chemical pesticides and fertilizers in the world. The impacts on public health are broad, reaching vast territories and involving different population groups, such as workers in various fields of activity, residents of factories and farms, and consumers. Three factors may influence the contamination of workers by pesticides, such as handling without the use of personal protective equipment, schooling level, and family contamination. The product with the highest percentage of contamination by pesticides was 91.8%, followed by strawberry (63.4%), cucumber (57.4%), lettuce (54.2%), carrot (32.6%), cabbage (31.8%), papaya (30.4%) and tomato (16.3%). Disorders such as abortion, poor fetal formation, cancer, and even suicide are related to its use. Also noteworthy are poisonings related to insecticides, fungicides, and herbicides. Organic agriculture and biological control stand as alternatives to its use.

**Conclusion:** Addressing the problems related to the use of agrochemicals involves a range of complex and diverse facets of the problem from its approach, consumption pattern, agricultural and commercial producers, and population awareness of the risks of contamination with pesticides.

#### AN ALTERNATIVE FOR THE TREATMENT OF ANTERIOR CROSSBITE IN THE MIXED DENTITION: A CASE REPORT

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**Aim:** Among the variety of options available for anterior crossbite correction, the Class III HealthStart™ System series corrector developed by Dr. Bergersen is an interesting option. This removable appliance is well indicated for the treatment of Class III or anterior crossbite associated with Class I and has the advantages of being a removable appliance consisting of a single piece made of rubbery material and requiring no molding for its manufacture. Thus, the aim of this work is to present the clinical case of a male patient with anterior crossbite treated with Class III corrector during the mixed dentition.

**Method:** The male patient (7 years and 6 months) presented Class I malocclusion associated with anterior crossbite (horizontal trespass of -2mm). The device was installed and the patient was instructed to use it for 12 to 14 hours a day. After five months of treatment, an overjet of +0.5mm was observed, which was overcorrected up to +2.5 mm. The results of the treatment until its overcorrection were reached in a year of treatment, when the device began to be used as active retention during the nights. The positive overjet remained stable for up to 5 months of active retention. The Class III corrector presents as advantages the practicality in its installation and good acceptance by the patient and their families.

**Results:**

**Conclusion:** It is concluded that the Class III corrector appliance is a good alternative to the treatment of anterior crossbite.

#### ANALYSIS OF LIPOPOLYSACCHARIDE ACID LEVELS OF ASYMPTOMATIC AND SYMPTOMATIC ENDODONTIC INFECTIONS

MARIANA MONCEFF CAMPOS; EZEQUIEL GABRIELLI; AUGUSTO RODRIGUES LIMA; DANIEL RODRIGO HERRERA; PRISCILA AMANDA FRANCISCO; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to evaluate the LPS levels in cases of symptomatic necrotic teeth with associated abscess and asymptomatic necrotic teeth during the different stages of endodontic treatment.

**Method:** Twenty patients requiring endodontic intervention were selected with or without pain symptomatology. LPS samples were collected before the chemical-mechanical preparation (CMP), after CMP, and after intracanal medication (ICM). The CMP was performed with chlorhexidine gel 2% (CHX), and the intracanal medication used was calcium hydroxide and CHX 2% for 30 days. LPS levels were measured by the Limulus Amebocyte Lysate (LAL) test. After exploratory analysis, the LPS data were submitted to the Friedman test for comparison between the sites and moments of the samples, and Mann Whitney for the comparisons between the symptomatic and asymptomatic groups.

**Results:** Thus, it was possible to observe that the LPS before the CMP in the symptomatic group presented higher values than the asymptomatic group ( $p < 0.05$ ). After CMP, there was a significant reduction of LPS in the symptomatic group ( $p < 0.05$ ), whereas in the asymptomatic group this reduction was only significant after the ICM ( $p < 0.05$ ).

**Conclusion:** In conclusion, LPS levels were higher in symptomatic cases and were associated with the presence of spontaneous pain. In addition, CMP with CHX 2% is effective in reducing LPS levels in symptomatic cases. Support: FAPESP 2017/18459-0; 2015/23479-5, CAPES & CNPq 308162/2014-5.

#### ANALYSIS OF THE INFLUENCE OF CHLORHEXIDINE AND SODIUM HYPOCHLORITE ON ADHESIVE BOND STRENGTH IN INTRARADICULAR PINS

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**Aim:** The adhesive interface in restorative procedures is not stable. Hydrolytic degradation may be due to the sorption of water or the action of intrinsic dentin enzymes. The aim of this study was to evaluate the influence of dentin treatment with chlorhexidine (CHX) and sodium hypochlorite (NaOCl) on bond strength (BS) in the cementation of glass fiber pins in thirds

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root, immediate and after 12 months.

**Method:** Thirty bovine roots were selected and randomized in 3 groups: Control, 2% CHX and 0,5% NaOCl. The root canals were prepared and submitted to ultrasonic cleaning for 5m. After cementation of the fiberglass pin (Exacto, Ângelus, PR, Brazil), the specimens were stored in deionized water at 37°C (Estufa 502, Fanem, SP, Brazil) for 48h. Each root, after perpendicular sectioning to the long axis, provided 3 samples: cervical third (CT), medium (MT) and apical (AT). One sample from each group was stored at 37°C for analysis after 12 months. Push-out test was performed in a test machine (EMIC Ltda, PR, Brazil) and the data were analyzed by the Kolmogorov-Smirnov, ANOVA and Tukey tests ( $\alpha = 5\%$ ). The fracture pattern was further analyzed by microscopy (Dino-Lite, Anmo Eletronics, Taiwan).

**Results:** The CT of the immediate experimental groups presented the highest values of BS, but did not significantly differ from the control. After 12 months, the CT of the CHX group presented reduction of the BS, while the same occurred for the AT of NaOCl group. The pattern of fractures was predominantly mixed.

**Conclusion:** The use of CHX and NaOCl had no influence on pin cementation, but root thirds influence the adhesive BS, with the CT presenting the highest value.

#### ANALYSIS OF THE INFLUENCE OF THE TYPE OF SLURRY IN DENTAL EROSION/ABRASION EXPERIMENTS

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**Aim:** This study evaluated the effectiveness of different in vitro protocols for confection of the slurry according to different active principles of toothpastes in the erosive/abrasive cycle.

**Method:** A total of 180 specimens were assigned to 15 groups ( $n = 12$ ) according to the combination between slurry type: dilution in deionized water in vitro (DW), artificial saliva in vitro (AS), natural saliva in vitro (NS) and toothpaste: 0 ppm fluoride (placebo), 1450 ppm F as sodium monofluorophosphate (MFP), 1450 ppm F as sodium fluoride (NaF), 1100 ppm F as Stannous fluoride and 350 ppm F as sodium fluoride (SnF<sub>2</sub> /NaF), and Chitosan 0,5%, 1100 ppm F as Stannous fluoride and 350 ppm F as sodium fluoride (Chi/ SnF<sub>2</sub> /NaF). A 5-day erosion cycle was performed that intercalated demineralization (1min, 1% citric acid, pH=3.5) and remineralization (brushing for 15s with 200g load and slurry immersion, totaling 2 minutes in toothpaste slurry). Surface profilometry was performed in the end of the experimental cycle. The data were submitted to two-way ANOVA and Tukey test.

**Results:** . No statistically significant differences were found among the types of diluents evaluated for all toothpastes ( $p > 0.05$ ). For effectiveness of toothpastes, MFP did not differ statistically from the control group independent of diluent ( $p > 0.05$ ). The groups treated with SnF<sub>2</sub> and F/Sn/Chitosan presented lower loss of enamel for all the diluents used ( $p < 0.05$ ).

**Conclusion:** The type of diluent used in the preparation of slurries in vitro did not influence the effectiveness of the evaluated toothpastes. The toothpastes based on SnF<sub>2</sub> and F/Sn/Chitosan presented the best action against erosion/abrasion.

#### ANALYSIS OF THE MICROBIOTA RELATED TO INFECTIVE ENDOCARDITIS IN ROOT CANALS OF TEETH WITH ASSOCIATED PERIODONTAL LESION

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Evaluate the presence of bacterias, related to Infective Endocarditis (IE), in root canals (RC's), of teeth with combined endo-periodontal lesions (CEPL), through Next Generation Sequencing (NGS).

**Method:** Clinical samples were taken from 15 RC's of teeth with CEPL. The Human Oral Microbe Identification using NSG protocol and viable culture were used to analyze the samples.

**Results:** NSG detected 322 bacterias, but 93 were associated with IE. Of the 322, the most prevalent were E.faecalis, P.micra, Bacteroidaceae [G-1] sp oral taxon 272, Peptostreptococcaceae [13][G-1] sp oral taxon 113, M.titidum, P.stomatis, F.alocis and F.fastidiosum. Phenotypically, stricts anaerobics Gram-negatives rods were the most detected microorganisms. Of the 93 bacterias associated with IE, the most frequently detected were E.faecalis, P.micra, P.stomatis, Actinomyces Genus probe 2, Parvimonas Genus probe, Pseudomonas Genus probe, Staphylococcus genus probe and Streptococcus Genus probe. Stricts anaerobics Gram-positives rods were the most prevalent microorganisms associated with IE.

**Conclusion:** It was concluded that NGS provided a comprehensive analysis of the microbiota, revealing species that are significantly related to the development of Endocarditis (FAPESP 14/01655-3; CNPq 308162/2014-5, CAPES, FAEPEX 2012/15).

#### ANTI-BIOFILM POTENTIAL OF EXPERIMENTAL VARNISHES CONTAINING NATURAL PRODUCTS ON CARIOGENIC BIOFILM GROWTH

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**Aim:** This study evaluated the anti-biofilm effect of experimental varnishes containing natural compounds on S. mutans biofilm as a strategy for caries control.

**Method:** For this, two varnishes containing different concentrations of the compounds named here as A, B and C were formulated. A varnish without natural compound and the 0.2% chlorhexidine digluconate were used as controls. S. mutans biofilm formation in 1% sucrose was tested by measuring the viability (colony forming unit-CFU/mL) of biofilms formed on 24-well plates after 24 h of incubation in 5% CO<sub>2</sub>. Data were submitted to one-way ANOVA

followed by a post hoc Tukey test ( $p < 0.05$ ). Both experimental varnishes completely inhibited the S. mutans biofilm formation after 24 h of exposure (CFU=0;  $p < 0.05$ );

**Results:** whereas no statistically significant decrease in the viability was observed for control varnish ( $p > 0.05$ ).

**Conclusion:** This study highlights the anti-biofilm potential of varnishes containing natural compounds products, which may be a promising therapy for preventing cariogenic biofilm growth.

#### ANTIBACTERIAL ACTIVITY OF MISWAK AGAINST POLYMICROBIAL BIOFILMS

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ARARAQUARA DENTAL SCHOOL - UNESP

**Aim:** Miswak is a stick from Salvadoria persica traditionally used as a teeth cleaning tool. The aim of this study was to evaluate the antimicrobial activity of miswak against polymicrobial biofilms.

**Method:** Saliva from a healthy donor was collected and the biofilms were grown on glass slide (13 x 13 mm) using McBain broth supplemented with 1% sucrose. The culture medium was refreshed daily. After incubation for 4 days at 5% CO<sub>2</sub> and 37 °C, glass slides were randomized into the following groups ( $n = 10$ ): control without treatment, miswak brushing (immediate and regrowth) and conventional brushing (immediate and regrowth). Brushing was performed with back-and-forth movement at 130 bpm for 5 seconds. Regrowth groups were incubated for an additional 24 h after brushing. Biofilms were dispersed and evaluated regarding viability of total bacteria, mutans streptococci and aciduric bacteria. Data were analyzed with GraphPad Prism (Kruskal-Wallis and post hoc Dunn;  $\alpha 5\%$ ).

**Results:** Microbial viability was not detected on immediate brushing groups. For regrowth groups, statistically significant differences were observed between control and miswak groups for acidic bacteria and between conventional brushing and miswak groups for total bacteria.

**Conclusion:** In conclusion, miswak showed important antimicrobial activity against polymicrobial biofilms.

#### ANTIFUNGAL ACTIVITY OF OCIMUM BASILICUM (BASIL) ESSENTIAL OIL AGAINST CANDIDA SPP

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Candida fungi, related to infections associated with immunosuppressed patients, have demonstrated a growing acquisition of resistance to antifungal drugs, which has led the researchers in this area to look for new alternatives of drugs that have an action against these organisms. In this context, essential oils extracted from Ocimum basilicum have demonstrated the potential of antifungal action, as described by scientific literature. The present project aimed to evaluate the antifungal activity against Candida spp. and the effect of the essential oil against hyphae formation in Candida albicans (ATCC 90028), a virulence factor.

**Method:** The evaluation of the antimicrobial effect was evaluated through the broth microdilution assay (CSLI, M27-A3, 2008). The biological effect of the essential oil on the virulence factor of hypha formation was evaluated through preliminary assay: evaluation of macroscopic colony morphology when exhibition with submic concentration (0,5 mg/mL) of oil and 10% SFB.

**Results:** The minimal inhibitory concentration was a range of 1- 0,125 mg/mL, depending of Candida species. The colony morphology presented rough after treatment of essential oil, don't showing change of aspect for this experiment.

**Conclusion:** The preliminary results show that although do not inhibit the formation of hyphae in macroscopic assays, Ocimum basilicum essential oil has antifungal activity against Candida species.

#### ANTIMICROBIAL EVALUATION OF REPARATIVE ENDODONTIC TRICALCIUM SILICATE-BASED CEMENTS

LAUTER ESTON PELEPENKO; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES; ALEXANDRE AUGUSTO ZAIA; ADRIANA DE JESUS SOARES; JOSÉ FLÁVIO AFFONSO DE ALMEIDA; CAIO CÉZAR RANDI FERRAZ; MARINA ANGÉLICA MARCIANO

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Investigate the antimicrobial activity of high-plasticity reparative endodontic cements (RECs). These formulations were introduced with improved handling characteristics. RECs antimicrobial evaluation is extremely important once these materials are used directly in contact with infected sites.

**Method:** MTA Repair HP, MTA Flow, Biodentine and an experimental cement were evaluated. The addition of 5% zinc oxide to the original MTA Flow containing bismuth oxide was also tested. Agar diffusion test and direct contact method, regarding broth turbidity, in contact with 0,10g-weight RECs discs were evaluated from 3 hours to 7 days according to the test. Storage occurred at 37°C, RECs dissolution was considered in separate and both tests performed in triplicates. As control, filter paper discs containing 2% chlorhexidine gel were used. Data were evaluated using Anova and Tukey ( $P < .05$ ).

**Results:** No inhibition halos were observed from any RECs regardless the inoculated bacteria tested. Control presented average halos of 19.1 mm against Enterococcus faecalis and 42.2 mm for Porphyromonas gingivalis with significant difference ( $P < .01$ ). Regarding direct contact method, all RECs presented significant higher levels of turbidity when compared to controls ( $P < .01$ ). Viable bacteria were recollected from all tested RECs tubes at all tested periods. Chlorhexidine presented the lowest values of turbidity from 3 hours to 7 days ( $P < .01$ ).

**Conclusion:** None of the RECs formulations presented antimicrobial effect against

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Enterococcus faecalis and Porphyromonas gingivalis with the tested methodologies. Accurate disinfection at sites where RECs are applied is recommended.

#### ANTIMICROBIAL PHOTODYNAMIC THERAPY FOR ROOT CONDITIONING IN ROOT COVERAGE PROCEDURE

ISABELA RODRIGUES GONSALES; MATHEUS VÖLZ CARDOSO; ADRIANA CAMPOS PASSANEZI SANT'ANA; MARIANA SCHÜTZER RAGGHIANI ZANGRANDO; MARIA LÚCIA RUBO DE REZENDE; SEBASTIÃO LUIZ AGUIAR GREGHI; CARLA ANDREOTTI DAMANTE BAURU DENTAL SCHOOL - USP

**Aim:** Chemical root conditioning of root surface aims to promoting antimicrobial action, collagen fiber exposure in root cement or dentin and new attachment of fibers. The antimicrobial photodynamic therapy (aPDT) employs one light source (led or laser) with a photosensitizer with antimicrobial effect and - recently discovered - demineralization effect on root surface. The aim of this study is present a case report illustrating the efficacy of root conditioning method by aPDT on root coverage procedure with subepithelial connective tissue graft.

**Method:** The patient presented multiple gingival recession defects on teeth 23, 24 and 25. After scaling and root planing, aPDT was performed (Toluidine Blue O - 10mg/ml, acid pH, red laser 658nm, 0.1W, 1061 J/cm<sup>2</sup>, 358 J/cm<sup>2</sup> per point, 35.38W/cm<sup>2</sup>, 1J per point-10s, 3J in total-30s). After, a subepithelial connective tissue graft (1.0 mm of thickness harvesting by double scalpel technique) was sutured and covered by a coronal advanced flap. After six months of follow-up, there was 2.25 mm of recession reduction, 1.10mm of keratinized tissue increase and 2.25mm of clinical attachment gain.

**Results:**

**Conclusion:** The success of this therapy is evidenced by stability of clinical results, reduction in probing depth and clinical attachment gain. In conclusion, aPDT for root conditioning is an additional treatment that contributes to the success in root coverage treatment.

#### ANTIPROLIFERATIVE ACTIVITY OF CARVACROL ON IMMORTALIZED HUMAN KERATINOCYTES

FELIPE JOIA; THAÍS ROSSINI DE OLIVEIRA; SIMONE N. BUSATO DE FEIRIA; JANAÍNA PRISCILA BARBOSA; GIOVANA C. BONI; ANDERSON L. TEIXEIRA; JOSÉ FRANCISCO HÖFLING

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To evaluate the antiproliferative effect of carvacrol in cell culture in vitro of untransformed immortalized keratinocytes (HaCat).

**Method:** The culture was performed on 96-well treated plates with RPMI / SFB medium at a cell concentration of 6.5x10<sup>4</sup> cell / well, and after the adhesion period the wells were treated with the serial concentrations of carvacrol, starting at 2 mg / mL. After incubation with the compound for 24 h, the cells were fixed, stained with sulforhodamine B and their absorbance was recorded on a microplate reader.

**Results:** The cellular viability of HaCat was shown to be dose-dependent at the concentrations tested, with a C<sub>it</sub> potential at concentrations of 2 mg / mL up to 0,0625 mg / mL and a cytostatic profile at concentrations below 0.03123 mg / mL to 0, 00098 mg / mL with IC 50 for the lowest concentration of 0.00098 mg / mL.

**Conclusion:** The carvacrol compound is active against HaCat cells. The cellular viability of HaCat is dose dependent on the concentrations tested.

#### ANXIETY AMONG UNDERGRADUATE STUDENTS IN DENTISTRY

JULIANA BENINE WARLET ROCHA; ROSANA DE FÁTIMA POSSOBON

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To investigate the anxiety levels among students of the undergraduate course in Dentistry of FOP-Unicamp, verifying their association with the year of the course and socioeconomic and demographic variables.

**Method:** The study was attended by 231 undergraduate students in Dentistry at the Piracicaba Dental School (FOP-Unicamp), during the 5 years of the course, in 2017. The students were invited to participate in the classroom. Anxiety tools were applied, as well as questions related to the interviewee's age, age and schooling of the father and mother, and monthly income. A descriptive analysis of the data was carried out using frequency and percentage tables. Gross analyzes were performed to test the association between the dependent variable (anxiety) and the independent variables. The statistical tests were performed by the program Bioestat 5.0. and a significance level of 5% was considered.

**Results:** 81.25% of the students interviewed in the fourth year of graduation had moderate or severe levels of trait anxiety and 81.58% of those belonging to the second year presented levels at the same intensity of anxiety state. There was no association between anxiety, either trait or condition and the analyzed variables.

**Conclusion:** The majority of the sample of undergraduate students had altered levels of trait-state anxiety and this variable had no association with the graduation years.

#### APICAL ANGLE AS A TOOL TO MEASURE THE ROOT DEVELOPMENT OF IMMATURE TEETH TREATED WITH APEXIFICATION OR REVITALIZATION

WALBERT DE ANDRADE VIEIRA; ANDRÉA CARDOSO PEREIRA; MATHEUS LIMA DE OLIVEIRA; ANA CAROLINA CORREIA LAURINDO DE CERQUEIRA NETO; JÚLIO VARGAS NETO; ALEXANDRE AUGUSTO ZAIA; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES; ADRIANA DE JESUS SOARES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to compare the root development, as a convergence of root canal walls, of traumatized immature permanent teeth submitted to apexification or revitalization by a tool, named an apical angle

**Method:** Periapical radiographs were collected from 37 patients with 44 teeth (22 apexification

and 22 revitalization). Three examiners marked, by consensus, the most apical point of the root on the mesial and distal side before and after the procedures. The software Image J was used. The apical angle was measured from two lines connecting the most apical points and another point 5mm toward the crown on the mesial and distal sides. If the ratio between these distances was greater than 1, the angle tool was directed to the crown, and the value of the apical angle was measured at the time the lines passed at the four demarcated points. The apical angle was considered divergent. If the ratio between these distances was less than 1, the angle tool was directed to the root and measured the value of the apical angle at the moment the lines passed in the four points marked. The apical angle was considered convergent. The changes in apical angle were expressed as the mean  $\pm$  standard deviation. The parametric t-test was used ( $p < 0.05$ ).

**Results:** The mean of convergence in the apexification group was 7.6° ( $\pm 6.9$ ) and in the revitalization group was 8° ( $\pm 7.6$ ). There was no statistical difference between the groups ( $p = 0.9142$ ). Both procedures provided the convergence of root canal walls.

**Conclusion:** Apical angle is a promising tool for the measurement of root development of traumatized immature permanent teeth, regardless of the procedure performed.

#### APICECTOMY AS AN ALTERNATIVE TO ORTHOGRADE RETREATMENT IN TEETH CARRYING POST, CORE AND CROWN. A CASE REPORT

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STATE UNIVERSITY OF LONDRINA

**Aim:** A 50-year-old female patient was referred to the dental office as a result of acute pain in the left central and lateral maxillary incisors.

**Method:** Clinical examination revealed gingival swelling located at the apex of the tooth #22. The patient explained that no retreatment was done due to the unsuccessful attempt of removing the intraradicular post and that the dentist changed the old crowns for new ones. The new crowns were well-adapted, with satisfactory aesthetic appearance, and without periodontal disease. Radiographic examination revealed apical radiolucency of teeth 21 and 22 diagnosing persistent chronic apical periodontitis. After anesthesia, a horizontal incision was made at the mucogingival junction extending from tooth 21 to 23. Complete flap was raised and osteotomy with diamond bur and constant irrigation was performed. After complete curettage of the surgical cavity, apicoectomy of 4 mm of teeth 22 and 2 mm in 21 was performed. Also, 5 mm in depth of retro-cavity was done. 5mL of 2% chlorhexidine was used to irrigate the canals and dried with sterile paper points. Mineral Trioxide Aggregate was used for cavities retrofilling. After radiographic verification of filling, particulate bone graft and resorbable membrane were placed and simple suture was performed. Anti-inflammatory drugs and antibiotics were prescribed and after 7 days the suture was removed. After 6 months, radiographic control showed signs of repair.

**Results:**

**Conclusion:** In cases where emotional factors of the patient, satisfactory crown adaptation and aesthetics, and also, difficulty in performing orthograde retreatment, periapical surgery should be considered.

#### ARGININE ADDITION EFFECT IN ADHESION AND ANTIMICROBIAL ACTIVITY OF RESINOUS CEMENTS FOR BRACKETS FIXATION

LUCAS DE ALMEIDA MAIA CARVALHO; MARCUS VINICIUS LOUREIRO BERTOLO; MAURICIO BOTTENE GUARDA; PAOLO TULIO DI NIZO; ISAAC JORDÃO; SAULO GERALDELI; MÁRIO ALEXANDRE COELHO SINHORETI

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to evaluate the shear bond strength (SBS) and antimicrobial potential of two commercial orthodontic light cure adhesives with arginine addition.

**Method:** For this, 40 bovine lower incisors were separated into 4 groups: Orthocem, Orthocem + arginine (2.5% wt), Transbond XT and Transbond XT + arginine (2.5% wt). The brackets were fixed on flat enamel surface and after 24 hours the SBS was evaluated using a universal test machine (Instron). For the colony forming unit (CFU) test, six adhesive discs of each group were submitted to biofilm formation of *S. mutans*, for 7 days. The microbiological experiment was done by means of serial dilution and in triplicate.

**Results:** The data of each test were analyzed statistically by ANOVA (two-way), followed by Tukey test ( $\alpha = 0.05$ ). For the SBS test, the Transbond XT light cure adhesive presented statistically higher values than Orthocem, regardless of the addition of arginine. There was a significant reduction in the growth of *S. mutans* for the Orthocem light cure adhesive + arginine (2.5% wt) group.

**Conclusion:** It can be concluded that the addition of arginine to the orthodontic light cure adhesives is a promising strategy to reduce bacterial growth, without compromising the adhesive properties of the material.

#### ASSESSMENT OF THE PATIENTS' ANXIETY IN THE ACQUISITION OF THE RADIOGRAPHIC EXAMS AND THE ANXIETY PERCEPTION BY DENTISTS

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study evaluated the anxiety of patients undergoing dental radiographic exams, the influence of anxiety on image quality and to verify anxiety perception by dentists.

**Method:** Forty-seven patients and fifty dentists participated in the study. Patient anxiety was assessed by the alpha amylase activity, obtained from the patient's saliva before and after radiographic exams. Influence of anxiety on image quality was verified by presence of motion artifacts in images. Dentists answered a semi-structured questionnaire about patients' anxiety perception, and the answers were analyzed by the qualitative-quantitative method of collective

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subject discourse. The alpha-amylase activity before and after the radiographic examination was assessed by the Wilcoxon test, while the alpha-amylase activity related to gender, type of examination and previous experience was verified by the Mann-Whitney test.

**Results:** Alpha-amylase activity was significantly higher prior to the examination for women ( $p \leq 0.05$ ). After the examination, anxiety was significantly higher for men, for patients with no experience with the test, and for patients who underwent cone beam computed tomography ( $p \leq 0.05$ ). With regard to image quality, anxiety did not influence the occurrence of motion artifacts in images. 73.7% of the radiologists and 58.8% of the clinicians perceived anxiety by patient reporting, while all pediatric dentists perceived it by the patients' behavior.

**Conclusion:** Although anxiety was present among patients, professionals who predominantly treat adult patients need the patient's report to perceive him/her as anxious. Anxiety did not interfere with image quality.

### BIOCERAMICS AS ROOT CANAL FILLING AND RETROFILLING MATERIALS: A CASE REPORT

MARIANA FABBRO ZANON; LAUTER ESTON PELEPENKO; BRENDA PAULA FIGUEIREDO ALMEIDA GOMES; ADRIANA DE JESUS SOARES; ALEXANDRE AUGUSTO ZAIA; JOSÉ FLÁVIO AFFONSO ALMEIDA; CAIO CEZAR RANDI FERRAZ; MARINA ANGELICA MARCIANO

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Describe a combined technique of orthograde and retrograde endodontic treatment of a cystic lesion.

**Method:** Clinical examination exhibited mucosal edema, negative thermal test and periapical x-ray of element 22 associated to apical lesion, and was therefore indicated for endodontics. Difficulties to dry the root canal for the obturation procedures made it impossible to conclude the endodontic treatment. Three changes of calcium hydroxide-based medications were performed, but the exudation was still persistent. It was then decided to perform the conventional obturation associated with BioRoot (Septodont) sealer based on tricalcium silicate, tooth restored definitely and immediately perform the surgical access. Flap was dislodged at the level of the interdental papilla, the apical lesion located, root resected at 3-mm apical and lesion removed by curettage against the bone walls so that the lesion was removed without ruptures. The retro-cavity root was performed and filled with the Biodentine repair cement. In sequence, suture was performed (4.0 Shalon Prime), final radiograph obtained and postoperative guidance provided. The specimen was submitted to histopathological examination. Radiographic control was performed in three months.

**Results:**

**Conclusion:** Similar compositions between the sealant cement and the retro-obturator cement ensured an interface that allowed the sealing and the beginning of the bone repair visualized in the control of three months. The histopathological analysis confirmed the lesion as being of cystic origin. Surgical procedures can be used as complementary to the endodontic clinic in selected cases.

### BIOPROSPECTION AND TOXICITY IN VIVO CHALCONES AGAINST CANDIDA

#### ALBICANS AND CANDIDA TROPICALIS IN DUAL BIOFILM

EMMANUELY DE OLIVEIRA CHAVES DOS SANTOS; PEDRO LUIZ ROSALEN; JOICE GRACIANI; MAYARA APARECIDA ROCHA GARCIA; JOSY GOLDONI LAZARINI; LUIS OCTAVIO REGASINI; JANAINA DE CÁSSIA ORLANDI SARDI

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Prosthetic stomatitis is an inflammation of the buccal mucosa associated with the use of dental prostheses and the presence of *Candida* sp. is one of the determining factors. The objective was to prospect 30 chalcones with modifications in their structures to determine the Minimum Inhibitory Concentration (MIC) and Fungicide (MFC), as well as to verify the anti-biofilm activity of the best compound, as well as to use the *G. mellonella* model to study the toxicity of the molecule.

**Method:** Aminochalcones were synthesized and diluted in DMSO to the experiments MIC and MFC and from the results of MIC, the molecule I35 was chosen for biofilm studies. The effect of I35 on the biofilm of *Candida* species was evaluated by the quantification of CFUs.

**Results:** I35 showed high antifungal activity, with MIC and MFC of 7.8 / 15.6 µg / mL for *C. albicans* and 3.9 / 7.8 µg / mL for *C. tropicalis*. The use of 1x MIC in the inhibition of *C. albicans* dual biofilm formation reduced 2.4 log10 when compared to control, while the use of the 10x MIC concentration of the same substance was able to inhibit 7 log10 of *C. albicans* biofilm. In the mature dual biofilm, *C. albicans* presented a reduction of 1.5 and 4 log10 in the treatment of 1x and 10x respectively. In inhibition of *C. tropicalis* biofilm, the use of 1x and 10x MIC was able to reduce 1.5 and 6 log10 respectively. In the mature dual biofilm the reduction was 1.5 log10 for 1x MIC and 4 log10 for 10x MIC. The toxicity of I35 in *G. mellonella* shown to be low at the concentrations tested.

**Conclusion:** Aminochalcone has promising activity against the *Candida* sp. and could be candidate for disinfection of dental prostheses.

### BRIGHTNESS AND CONTRAST ADJUSTMENTS ENHANCE THE RADIOGRAPHIC DETECTION OF SOFT TISSUE CALCIFICATION

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To assess the influence of subjective enhancement of brightness and contrast of digital panoramic radiographs on the detection of soft tissue calcifications.

**Method:** In this observational study, 500 digital panoramic radiographs were evaluated by two examiners in consensus, who scored the images for the presence of calcifications for each right and left side of the image. After 30 days, all images were reevaluated under subjective manipulation of digital brightness and contrast. Calcifications were classified based on the

diagnostic hypothesis: sialolith, tonsillolith, calcified atheroma, phlebolith, rhinolith, maxillary sinus antrolith, synovial chondromatosis, lymph node calcification, stylohyoid ligament, triticeous cartilage or/and upper horn of thyroid cartilage calcification. For intra-examiner agreement, 20% of the sample was reevaluated. Kappa test and McNemar test were used ( $\alpha = 0.05$ ).

**Results:** In original images, calcifications were observed in 44.2% of the patients, and in enhanced images, this number was 70.8%. Many calcifications were detected only in enhanced images, mainly in the diagnostic hypotheses of calcified atheroma and stylohyoid ligament. Intraexaminer agreement was excellent for the detection of soft tissue calcifications (0.82) and for the classification (0.81).

**Conclusion:** Subjective enhancement of brightness and contrast improves the detection of soft tissue calcifications in digital panoramic radiograph.

### BUCO-FACIAL INJURIES IN MARTIAL ARTS PRACTICERS

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Martial art aims at the full development of the body and mind of the practitioner. The purpose of this study is to discuss buco-facial injuries in martial arts practitioners, focusing martial art, contact sports, and mouth guards.

**Method:** This is a literature review in the Google Scholar and Scielo databases on buco-facial injuries in martial arts practitioners.

**Results:** Martial art is defined by types of individual fighting techniques that have had total or partial origin in the eastern region, and which uses in body parts such as: hands, feet, elbows, knees and head. The different sports of contact are: Jiu-jitsu, Taekwondo, Muay Thai, Judo, Boxing, MMA / UFC, Free sports wrestling, Chinese boxing, Kung Fu, English boxing, capoeira. With the increase of the practice of fighting sports, there is an exposition of its practitioners to the risk of orofacial injuries, mainly to the dental traumatism, which can generate aesthetic, psychological disorders and even lead to social exclusion. Mouth guards are safety devices that aim to prevent trauma such as concussion, laceration, dislocation and dental losses in contact sports.

**Conclusion:** It is of great importance to practice sports, whatever it is to have a healthy mind and body, but as there is a risk of injury, there needs to be more guidance for practitioners. Practitioners should also be concerned about and seek information about care and ways to prevent themselves, what prevention methods, and which devices to use. In this way, the practitioners will have a good development and performance being more protected as to the injuries inherent to this type of fight.

### BUDGETARY IMPACT OF ORAL REHABILITATION WITH COMPLETE DENTURES - AN ECONOMICAL EVALUATION FROM SÃO PAULO STATE, BRAZIL

ANA CLARA SIMÕES; DENISE DE FÁTIMA BARROS CAVALCANTE; GLÁUCIA MARIA BOVI AMBROSANO; LÍVIA FERNANDES PROBST; YURI WANDERLEY CAVALCANTI; LAURA PAREDES MERCHAN; ANTONIO CARLOS PEREIRA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to develop a Budgetary Impact Analysis (BIA) concerning the possibility to make available a complete upper and lower dentures (UD and LD) to an eligible population of elderly people (above 65 years) in the São Paulo state, Brazil.

**Method:** Calculating the proportion, the prevalence of edentulous (upper and lower arch) and defining the eligible population (public health system users). Afterwards, the BIA was designed and, for this purpose, some criteria were defined: 5-year time horizon (2018-2022), prospect of municipal expenses with prostheses, additional progressive incorporation of technology (UD and LD) at annual rate of 10%, 15%, 20%, 25% and 30%. Sensibility analysis was performed in different situations (reference, more pessimistic and more optimistic), based on the calculation of spending[E1] through measured demand and epidemiological demand.

**Results:** The incremental impact on the budget measured by the epidemiological demand in relation to that assessed was approximately R\$ 59,141,510 million over 5 years, meaning an impact of 0.08% (0.01% more optimistic - 0.13% more pessimistic) of the "Medium and High Complexity Care" budget for Unified Brazilian Health System (SUS); and 0.09% (0.03-0.14%) of the Primary Care budget.

**Conclusion:** The Budgetary Impact of the increasing oral rehabilitation with complete dentures for the elderly population in the State of São Paulo is low, comparatively to the expenses with primary or specialized care budget. Additionally, incorporation of denture rehabilitation would be feasible, according to the financial availability and priorities of each municipality.

### CALCANEUS: SEXUAL DIMORPHISM IN A BRASILIAN SAMPLE

SARAH SILVA LEITE; BRENDA GALVÃO BRUDER; PAULO ROBERTO NEVES; JÚLIA VITORIO OCTAVIANI; STÉFANY DE LIMA GOMES; ALICIA MARIEL PICAPEDRA PALOMEQUE; JOÃO SARMENTO PEREIRA NETO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to evaluate the relationship of ten linear measurements of the calcaneus and the possibility of creating logistic regression models.

**Method:** This is an observational and cross-sectional study using 200 calcaneus (ranging in age from 22 to 85 years old), 120 males and 80 females, from the Biobank of FOP / UNICAMP. MHAMAS / A (Maximum height of anterior and middle articular surfaces with astragalus) were measured (with digital caliper and tape measure); MLAS / C (maximum length of articular surface with cuboid bone); MHPAS / T (Maximum height of the posterior articular surface with the talus); MTH (maximum tuber height); L (Length of the calcaneus); SC (String obtained with circumference with tape measure); MWAMAS / T (Maximum width of the anterior and middle articular surfaces with the talus); MWAS / C (Maximum width of articular

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surface with cuboid bone); MWPAS / T (Maximum width of the posterior articular surface with the talus); MTW (maximum tuber width). The present study was approved by CEP 138/2014 CAAE 38522714.6.0000.5418.

**Results:** In the analysis of the results, it was verified that the measurements of the Length (L), Circumference (CC) and Maximum Width of Articular, Anterior and Mean surfaces with Astragalus (MWAAMS / A) can be used as a coadjuvant method to estimate sex. The BRUDER logistic regression model was also obtained: Logite =  $-3.578 + 0.023xL + 0.010xCC - 0.091xMWAAMS / A$ .

**Conclusion:** It is concluded that the measures studied are dimorphic and the use of the obtained model presents 76.5% of sensitivity, 86% of specificity and 61.3% of accuracy.

## CERVICAL ENAMEL PROJECTION IN A MOLAR WITH PERIODONTAL DISEASE

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**Aim:** Anatomic factors such as cervical enamel projections (CEP), enamel pearls, and developmental grooves are often associated with advanced, localized periodontal destruction. CEP in the furcation areas of molars have no true attachment and are therefore highly susceptible to the creation of a deep periodontal pocket.

**Method:** The objective of this clinical case is to report a CEP in a molar with periodontitis in a white female patient, 50 years-old, at the Dental School of Araçatuba/UNESP. After obtaining the medical history, clinical and radiographic exams were performed and severe periodontitis was diagnosed. The initial periodontal therapy related to the cause was performed. At the reevaluation, it was observed that the periodontitis was still an issue and a surgical therapy was planned. A mucoperiosteal flap was performed in the region of teeth 25-27 and after scaling and root planning it was detected a CEP in the buccal of tooth 26. Odontoplasty was performed to remove it.

**Results:**

**Conclusion:** It can be concluded that CEP may be a local contributing factor in chronic periodontitis and furcation involvement in molars. Detailed examination as well as early diagnosis of periodontal disease at the region of furcation is clinically very important.

## CHARACTERIZATION OF STEM PROGENITOR CELL CLONES OF HUMAN PERIODONTAL LIGAMENT IN OSTEO/CEMENTOBLAST DIFFERENTIATION

KAROLINE DE MORAES DOS SANTOS; CATHARINA MARQUES SACRAMENTO; ROBERTA GAVA PRATTI; DENISE CARLETO ANDIA; FRANCISCO HUMBERTO NOCITI JUNIOR; RENATO CORREA VIANA CASARIN; KARINA GONZALES SILVÉRIO RUIZ PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The periodontal ligament (PDL) is composed of heterogeneous cell populations with different differentiation capacities. In this study, we investigated the osteo-cementoblast differentiation capacity of a population of human PDL mesenchymal progenitor cells with CD105 (hPDL-CD105+) positive surface markers.

**Method:** HPDL-CD105+ cell clones were obtained by the Cylinder Cloning Technique and submitted to osteogenic induction for 28 days and a mineralization assay (Alizarin Red) was performed. The analysis of gene expression levels for ALP, ANXA2, ASPN, BMP2, FGF7, OCN, OPN and RUNX2 were performed using qRT-PCR.

**Results:** The results showed that from 16 cell clones that were obtained, only 5 clones presented mineral production capacity, being characterized as High Osteoblast Potential (HOP), while the other clones were called as Low Osteoblast Potential (LOP). The gene expression of osteogenic markers (ALP, RUNX2, OCN and OPN) were higher in HOP clones. The transcript levels for ANXA2, BMP2 and FGF7 were similar in HOP and LOP after osteogenic induction, whereas the ASPN gene increased its expression only in LOP.

**Conclusion:** These results will contribute to a better understanding of what type of cells and mechanisms are most involved in the regeneration of periodontal tissues.

## CHEMICAL AND MECHANICAL EVALUATION OF A COMPOSITE WITH DIATOMITE FILLER: A COMPARATIVE STUDY

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**Aim:** The aim of this study was to evaluate sorption, solubility and fracture toughness properties of composites with different filler types compared to the new diatomite-containing composite (Zirconfill).

**Method:** Zirconfill, Z350 and, Mosaic resins were analyzed. Water sorption and solubility analysis were done with discs (15x1mm) of each composite (n=8) according to ISO 4049. All samples, for all analyzes, were photocured with Valo cordless (40s - 1200 mW/cm2). The discs were dried and weighed in a precision scale until weight variation <0.0001g (m1). They were stored in distilled water for 7 days and again weighed for the sorption test (m2) and then stored again at 37 °C until reach a constant weight to be used in solubility test (m3). Data from m1, m2, and m3 were submitted to sorption and solubility formulas. Fracture toughness was done according to ISO 13586. Samples (n=10) were made using metallic matrix (24x5x2,5mm) with a central edge-shaped defect. After photocuring, the samples were submitted to the three-point flexural test and the values submitted to the fracture toughness formula. Data obtained from each test were submitted to normality test. Water sorption value were analyzed by Kruskal-Wallis, water solubility and fracture toughness were analyzed by One-way ANOVA (α=0.05).

**Results:** There was no difference between groups to water sorption and fracture toughness. To water solubility, Mosaic resin presented higher solubility than Zirconfill and Z350 (p<0.05).

**Conclusion:** The resins evaluated in this study exhibited similar values to fracture toughness and water sorption. However, Mosaic resin was more soluble in water than Zirconfill and Z350.

## CHEMICAL AND STRUCTURAL CHARACTERIZATION OF HIGH PLASTICITY REPAIR CEMENTS

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**Aim:** Evaluated phase, chemical and crystalline structures of non-hydrated and hydrated forms of high-plasticity cements (MTA HP, Biodentine, MTA Flow, MTA Flow + 5% ZnO and experimental tricalcium silicate-based cement) using X-ray diffraction (XRD), Scanning electron microscopy (SEM) and energy dispersive X-ray (EDX).

**Method:** Samples were previously prepared in the Dental School of Piracicaba and analysed in University of Birmingham. For the XRD analysis used a diffractometer adjusted to a CuKα radiation of 40 mA, 45 kV and set to rotate between 10-60 degrees with a 0.02 degrees 2θ step and a step time of 0.6 s, phase identification was undertaken using a search-match software using the ICDD database. For SEM and EDX, specimens were prepared and attached to aluminum stubs, carbon coated and viewed under the SEM with EDX.

**Results:** XRD test showed high Portlandite peaks in cements with low radiopacifier loading, calcium hydroxide was detected in MTA HP, Biodentine and MTA Flow. In all cements, phases detected were mainly tricalcium silicate and corresponding radiopacifier (bismuth oxide in MTA Flow and calcium tungstate in MTA HP, MTA Flow and MTA Flow + 5% ZnO) and crystalline phase calcium hydroxide was detected in MTA HP, Biodentine and MTA Flow, which was not detected in MTA Flow + 5% ZnO and Experimental cement. SEM complemented with EDX analysis revealed cement particles hydrated interposed by small particles of radiopacifier and large particles size of bismuth oxide was found for Experimental cement.

**Conclusion:** Results suggest that the presence of Zn affected the crystal deposition.

## CHEMICAL REAGENTS: EFFICACY OF ROUTINE DISINFECTANTS AGAINST BACTERIA

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**Aim:** Biofilms are complex ecosystem; consist of surface attached microbial cells embedded in exo-polymeric substances derived from cells and their environment. Biofilms are causative agents for many human infections including nosocomial infections. Nosocomial infections are very common and it is very important to invent novel preventive strategies as well as evaluating the already practicing preventive and controlling strategies as well. To determinate the efficacy of five chemical agents use in healthcare facilities in Piracicaba/SP against five bacterial planktonic and biofilm cells which cause nosocomial infections.

**Method:** Bacillus cereus ATCC 11778, Enterococcus faecalis ATCC 29212, Escherichia coli ATCC 43845, Klebsiella pneumoniae ATCC 13883, Micrococcus luteus ATCC 14452, were used to evaluate the efficacy of chemicals against 77% ethanol, 2% sodium hypochlorite, 1% chlorhexidine digluconate and 2% chlorhexidine digluconate were used as treatments. Agar well diffusion was performed to determinate the effectivity against planktonic cells. Minimum inhibitory and minimum bactericidal concentrations were determined using CLSI M-27A broth microdilution method with modifications. Post exposure biomass reduction was determined with crystal violet assay on 24h mature in vitro bacterial biofilms.

**Results:** All test strains exhibited sensitivity for all chemical agents. MIC and MBC values were significantly smaller than working concentrations of chemicals. Biofilm biomasses of all test strains were significantly reduced after 24h exposure to chemical agents.

**Conclusion:** 77% ethanol, sodium hypochlorite, 1% chlorhexidine digluconate and 2% chlorhexidine digluconate are effective for surface decontamination while 2% chlorhexidine and 2% sodium hypochlorite exhibits highest potency.

## CHILDHOOD OBESITY AND IMPACTS ON GENERAL AND ORAL HEALTH

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**Aim:** To know the relationship between childhood obesity and general and oral health, associated comorbidities, the prevalence in the infant population and its influences.

**Method:** This is a literature review in databases, SciELO and Google Scholar and the Ministry of Health.

**Results:** Studies indicate that obesity is correlated with general and oral health. Obesity and overweight favor the emergence of comorbidities such as heart disease, high blood pressure, osteoarthritis, type 2 diabetes, and some cancers. Obese patients require attention in oral health, especially in relation to the prevention of periodontal disease and dental caries. Individuals with high BMI produce a higher level of inflammatory proteins related to periodontal diseases. Studies indicate a prevalence of 33.5% of overweight in the child population from 5 to 9 years old and obesity in 14.3% of them. In individuals aged 10 and 19, the rate of overweight is 20.5% (2010). Obesity is related to multifactorial influences that involve biological, economic, cultural, psychological and nutritional factors such as high intake of ultra-processed foods, with higher sugar and sodium content and low nutritional quality. Obesity alone cannot be used as an indicator of oral health, and it is necessary to consider other factors, such as socioeconomic status, oral hygiene, eating habits, among others.

**Conclusion:** It is essential to know the organic and oral changes caused by obesity. Its prevalence may result in the early development of comorbidities that will persist into adulthood

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**CIGARETTE SMOKE INFLUENCE AND EROSION CYCLES IN SURFACE HARDNESS AND BOND STRENGTH OF SELF-ETCHING ADHESIVE TO DENTINE**

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**Aim:** This study evaluated the hardness losses(KHN) surface and the bond strength(RU) of self-etching adhesive(SE) eroded dentin(ED)(erosive cycle (EC):5x day/ 30s at 60min intervals, submerged 1 day in artificial saliva), with or without cigarette smoke(FC)(10 cigarettes per day,5days, before EC).

**Method:** Forty human dentin blocks were divided into 4 groups(n=10):negative control(C);Control with erosion(E);Smoke with erosion(FE) and smoke without erosion(F).Initial and after treatments surface KHN were performed to calculate the percentage loss (PL-%) of hardness,and RU test to dentin after treatment.Samples were restored with SE and flow resin Z250 with a matrix(1,15X1mm).They were subjected to Scanning Electron Microscopy(SEM) to obtain the surface morphology of dentin(SMD).RU was analyzed by ANOVA 2 factors.Surface KHN presented asymmetrical distribution,and adjusted a generalized linear model considering the distribution range(asymmetrically).

**Results:** For PL of KHN after treatment, there was statistically significant difference in the E and EF when compared to C and F(p=0.0145).For RU was no statistically significant difference for the factor exposure to cigarette smoke(p=0.4492) and for erosion factor(p=0.7221) with no interaction between these factors(p=0.5401).The prevalent fracture pattern was adhesive failure.At SEM analysis, can observe a matter precipitation,occluding the tubules to the FE and F. E and FE had greater exposure and diameter of dentinal tubules due to erosion.

**Conclusion:** Exposure to FC did not cause effect on the KHN percentage of sound and ED. SE is suitable to restore exposed dentine areas in smokers who have erosion associated.

**CLINICAL AND RADIOGRAPHIC ANALYSIS OF TRAUMATIZED IMMATURE TEETH TREATED WITH APEXIFICATION OR PULP REVASCULARIZATION**

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**Aim:** The aim of this retrospective study was to compare the clinical success rates and continued root development in traumatized immature teeth submitted to apexification or pulp revascularization.

**Method:** Clinical and radiographic data were collected from 37 patients with 44 teeth (22 apexification and 22 pulp revascularization, being that 6 with triple antibiotic paste and 16 with calcium hydroxide and 2% chlorhexidine gel as intracanal medication). Success criteria and adverse events were evaluated. The preoperative and follow-up radiographs were analyzed to measure the quantitative changes in the root length, root width, and apical diameter, through Image J software.

**Results:** The apexification group showed complete healing of 86.36% and pulp revascularization showed 95.45% (p>0.05; G test). Pulp revascularization obtained a higher incidence of adverse events (p<0.05; G test), and crown discoloration was the most found. Pulp revascularization showed significantly greater percentage changes only in root width (6.7% vs 0.99% in apexification; p<0.05, t test). The mean percentage change in the increase of root length and in the decrease of apical diameter was 6.66% and 30.47% for apexification, and 12.55% and 40.51% for pulp revascularization, respectively. Replacement resorption in avulsed teeth was the main cause of failure in the apexification group. One case of failure in the pulp revascularization group occurred due to a secondary trauma with avulsion.

**Conclusion:** Both protocols provided satisfactory clinical success rates. In relation to the continuation of root development, pulp revascularization was similar to apexification, except for root width.

**CLINICAL IMPLICATIONS OF L-PRF IN DENTAL ORAL SURGERY- A LITERATURE REVIEW**

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**Aim:** Leukocyte Platelet-Rich Fibrin (L-PRF) has been responsible for healing optimization and bone formation when used as a clinical biomaterial. The clinical indication for its use may be described as sinus lift, dental implants installation, and alveolar ridge preservation. Thus, the main goal of this study was to perform a literature review about the main clinical implications of L-PRF in dental oral surgery. .

**Method:** For this, a review in the literature within the keywords "L-PRF; Bone Regeneration and, Healing" was performed. The databases consulted were Pubmed, Scielo, and Bireme. From this search, after the exclusion criteria were applied, a total of 12 articles were selected between 2006 to 2018.

**Results:** This reviewed literature showed that in order to stimulate the physiological process of the coagulation cascade, the autologous blood concentrate L-PRF must be obtained without the presence of anticoagulant. Additionally, the presence of L-PRF demonstrated specific cellular responses because of the releasing of the growth factors. Thus, the released growth factor promoted the differentiation of stem cells in osteoblasts and cytokines. Therefore, the use of L-PRF could serve as a tool for optimizes the healing process, reduces postoperative pain and to improve bone formation in sinus lift, fresh extraction sockets and, dental implants. Furthermore, PRF clots allowed the placement of an early loading by reducing the osseointegration period in dental implants.

**Conclusion:** Based on the literature review, we may conclude that L-PRF promotes tissue repair, reducing healing time for dental surgery.

**CLINICAL STUDY OF THE MICROBIAL PROFILE, LPS AND LTA IN TEETH WITH PULP VITALITY ASSOCIATED WITH PERIODONTAL DISEASE**

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**Aim:** The present study investigated the microbiota and quantified the levels of LPS and LTA in root canals (RC) and periodontal pockets (PP) of teeth with chronic periodontal disease with secondary endodontic involvement that did not respond to the periodontal therapy, before and after the chemo-mechanical preparation (CMP) and after intracanal medication (ICM) for 30 days.

**Method:** Ten teeth under periodontal treatment for at least 6 months and positive pulp response were selected. Samples from PP and RC were collected by using sterile/apirogenic paper points. The microbiota of PP and RC was characterized using Nested PCR and Checkerboard DNA-DNA hybridization (CB). Quantification of LPS and LTA were performed using LAL Pyrogen 500 and ELISA, respectively.

**Results:** Bacterial DNA was detected in all PP and RC samples. By Nested PCR, E. faecalis and F. nucleatum were the most prevalent species. By CB, higher microbial load was detected in BP compared to the RC. LPS and LTA levels were detected in PP and RC in all phases. The reduction of LPS was 31.9% (PP) and 80% (RC) after CMP and 73.38% (PP) and 90% (RC) after ICM. The reduction of LTA was 34.49% (PP) and 11.55% (RC) after CMP and 28.45% (PP) and 47.93% (RC) after ICM.

**Conclusion:** In conclusion, the microbiota of PP and RC is polymicrobial, with presence of Gram-negatives, Gram-positives, facultative and strict anaerobic bacteria. CMP and ICM reduced the infectious content of PP and RC. CMP and ICM were effective in reducing LPS levels in PP and RC. ICM was effective in decreasing LTA levels in PP and RC. (Supported by FAPESP 2015/23479-5, 2017/18838-1; CNPq 308162/2014-5 & CAPES)

**COLORIMETRIC AND TOOTH SENSITIVITY ANALYSIS OF VIOLET LED IN-OFFICE BLEACHING: A DOUBLE-BLIND RANDOMIZED CLINICAL TRIAL**

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**Aim:** To evaluate color change and tooth sensitivity (TS) due to in-office bleaching using violet LED (VL) combined or not with high-concentrated hydrogen (HP) or carbamide (CP) peroxides.

**Method:** One-hundred eligible patients were randomly allocated to (n=20): VL, VL/CP, CP, VL/HP and HP. Twenty 1-min irradiations of VL with 30-s intervals were combined or not with 37% CP or 35% HP for 8 (VL only) or 3 sessions (gel-treated groups). Colorimetric evaluation was performed with a spectrophotometer at baseline (T0), after bleaching (Tb) and at 14-day follow-up (T14). Intensity of TS was measured with a visual analogue scale. ΔE, ΔL and Δb (Tb-T0 and T14-T0) were evaluated by one-way ANOVA and Tukey's Test. Intensity of TS were evaluated by Kruskal-Wallis and Mann-Whitney (≠%).

**Results:** VL/HP promoted higher ΔE than HP (p<0.05) at Tb and T14. Among these groups, similar ΔL (p>0.05) and different Δb (p<0.05) were observed at both time points. VL/CP increased ΔE (p=0.027) and Δb (p=0.003) of CP gel only at Tb. VL/CP reached ΔE of HP regardless the time of observation (p>0.05). VL alone resulted in the lowest ΔE (p<0.05), and it did not increase luminosity (ΔL) of teeth. Intensity of TS for VL/HP was superior than HP only at 3rd session and 1st week-interval (p<0.05). TS of CP was not affected by VL.

**Conclusion:** VL alone was not effective as peroxides for bleaching. Although HP efficacy was enhanced by VL regardless the time, the enhancement of CP color change was no longer observed 14 days elapsed from bleaching. While VL affected intensity of TS for HP, VL activation did not influence this symptom for CP gel.

**COMMON DISINFECTANTS AS A HOSPITAL ACQUIRED INFECTION CAUSING BIOFILM REMOVAL STRATEGY**

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**Aim:** Hospital acquired infections are common health care facility associated problem which cause serious health problems annually. Different precautions are taking to prevent and control HAI would wide surface decontamination is one of them. Biofilms are more resistant to external physical and chemical stresses due to their extracellular matrix. Therefore, the efficacy of disinfectants use in health care facilities in Piracicaba/SP is necessary to be researched in order to control the occurrence of HAI. By forming in vitro biofilms model determinate the effect of 77% ethyl alcohol, 1% and 2% chlorhexidine digluconate and 2% sodium hypochlorite against bacterial biofilms.

**Method:** Proteus mirabilis ATCC 25933, Pseudomonas aeruginosa ATCC 25619, Salmonella enterica ATCC 14028, Staphylococcus aureus ATCC 29213, Staphylococcus epidermidis ATCC 12228 were used as test strains. Effect on planktonic cells were confirmed with Agar well diffusion technique. Minimum inhibitory and minimum bactericidal concentration were determined by M-27A CLSI broth microdilution method to evaluate the minimum effective concentrations 24h treatment followed by crystal violet assay was used to determine the effect of chemicals on biofilms.

**Results:** All chemicals showed inhibition zones with all test strains that indicates the inhibitory effect on planktonic cells. MIC and MBC obtained were significantly below the working



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concentrations. Biofilm mass was reduced with that treatments.

**Conclusion:** All tested chemicals can be used as effective disinfectants to control HALs. But 2% chlorhexidine and 2% sodium hypochlorite are more potential disinfectants compared to 77% ethyl alcohol.

#### COMPARISON BETWEEN DIFFERENT TEACHING METHODOLOGIES IN PERIODONTICS. A QUASI-EXPERIMENTAL COHORT STUDY

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**Aim:** In order to support and improve the learning process of students. The purpose of this quasi-experimental cohort study will be to evaluate the impact of two teaching methodologies on the performance of dental academics.

**Method:** In this study the students were divided into two groups: FC- Inverted classroom associated with active dynamics centered on the student and AT- Traditional lecture with passive dynamics centered on the teacher. To evaluate the quality of life, the WHOQOL-Bref questionnaire was used. The instrument contains 26 questions, of which two are related to the general quality of life and 24 questions to the physical, psychological, social and environmental domains (Fleck et al., 2000). In order to evaluate the student's integration into university life, we chose to apply the Academic Life Assessment Scale (EAVA). The scale is composed of 34 items distributed in five categories (University environment, Commitment with course, Student's ability, Involvement in non-compulsory activities, Conditions for study and academic performance) (VENDRAMINI et al., 2004).

**Results:** Partial results show that 78% of the students were females with a mean age of 20.7 ± 2.2 years. Significant differences were found in relation to the Physical and Psychological domains of Whoqol-Bref between the male and female genders. Regarding the EAVA scale, different series and genders were not observed.

**Conclusion:** Significant differences were found in relation to the Physical and Psychological domains of Whoqol-Bref between the male and female genders. However more studies are needed to verify if teaching method and quality of life influence academic performance.

#### CONVENTIONAL VS CAD/CAM PROVISIONAL RESTORATIONS: BIOCOMPATIBILITY ANALYSIS AND INFLAMMATORY RESPONSE

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**Aim:** The aim of this study was to evaluate the biocompatibility and inflammatory response of provisional materials.

**Method:** It was evaluated mice (Balb/c) gingival cell adhesion and proliferation material discs (13 mm x 2 mm) under direct contact with the materials T- thermalpolymerization resin (VIPI Cor); A - auto-polymerized resin (Alike); B - bisacrylic resin (Protomp 4); NC - nano ceramic resin (LAVA Ultimate 3M) and CAD - resin block for CAD/CAM (Telio Cad) at 24, 48 and 72 h, through the essays of MTT and Alamar blue. Beside that, materials eluates (24h) were applied on the cell culture and the citotoxicity and production of IL-6, IL-1B and TNF-α after 24, 72 and 48 hr were analyzed through MTT, Alamar Blue and ELISA. Data were analyzed statistically by analysis of variance (ANOVA) followed by the Bonferroni correction. P < .05 was considered statistically significant.

**Results:** The results presented that gingival fibroblasts under direct contact with A and B reduced significantly adhesion and cell proliferation after 24, 48 and 72h compared to the control (cells cultured in a plate). A and B induced the production of IL-6, IL-1B and TNF-α after 24, 72 and 48h, especially within the first 24h.

**Conclusion:** We concluded that under direct contact, A and B produced greater adverse effects on gingival fibroblasts adhesion and proliferation. T, NC and CAD are more cytocompatible materials and induce lower production of IL-6, IL-1B and TNF-α.

#### CORRELATION BETWEEN THE MANDIBULAR RAMUS AND THE FORAME MAGNO AS DETERMINANT OF SEX FOR HUMAN IDENTIFICATION

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**Aim:** To evaluate the correlation between mandibular ramus and foramen magnum measurements in a Brazilian population, for sex determination.

**Method:** Five measurements were performed on 100 adult mandibular ramus (80 men M ± SD: 38.58 ± 3.2 years and 20 women; M±SD: 31.75 ± 2.75 years). And, 4 foramen Magnum (FM) measurements on 70 skulls (37 men and 33 women M ± SD: 37.4 years) belonging to the University of Campinas. All mandibles and skulls that presented pathological changes, fractures, deformities or total absence of teeth were excluded from this study. To minimize the intra-examiner error, all measurements were made in triplicate, with a digital caliper.

**Results:** The results were published by media and standard deviation of the sexes was analyzed without software Bioestat-version 5.3, with P<0.05. It was observed that the mean values were significantly higher in males than females for all variables in each bone. All the variables were found to be significant predictors for classifying a given sample based on sex. The Pearson correlation was applied for all measurements of the mandible and FM for both sexes. There was a significant positive correlation between all parameters studied (P<0.001). The strongest positive correlation was observed between the circumference and width of the mandible branch (r = 0.82).

**Conclusion:** There is a strong positive correlation between mandibular and foramen magnum measurements and the measures can provide greater accuracy in sex determination. However, larger samples should be tested.

#### CORRELATION OF BONE LOSS OF DENTAL IMPLANTS INSTALLED IN MAXILLAE RECONSTRUCTED ACCORDING TO ANTAGONIST ARCH TYPE

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**Aim:** This study used Cone Beam Computed Tomography (CBCT) to evaluate the correlation of bone loss of implants installed in maxillae reconstructed with autogenous iliac crest bone grafts, with antagonist arch type.

**Method:** Ten patients submitted to maxillary reconstruction with autogenous iliac crest bone grafts and rehabilitation with implants between 2008 and 2011 formed the study sample. The peri-implant bone loss was measured using CBCT with Dolphin Imaging® 11.5 software, considering the distance between the implant-abutment junction and the vestibular and palatal bone crest. The data obtained was correlated with the antagonist arch. The statistical analysis included ANOVA test with post hoc Tukey's test and Spearman's correlation (5% significance).

**Results:** The average peri-implant bone loss was 3.94mm. According to antagonist arch type, the average peri-implant bone loss was: Permanent dentition= 3.89mm, Hybrid prostheses= 4.13mm, Removable prostheses and permanent dentition= 2.13mm, and Partial edentulism= 4.56mm. However there was no statistically significant difference considering peri-implant bone loss and the antagonist arch type (p=0.262). There was no correlation identified between the antagonist arch and peri-implant bone loss (r=-0.08; p=0.925).

**Conclusion:** Although the peri-implant bone loss was considerable, the antagonist arch type has no correlation with the amount of bone loss during the follow-up period.

#### CYTOTOXICITY EVALUATION OF FIVE ENDODONTIC CEMENTS IN CELLS FROM THE PERIODONTAL LIGAMENT

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**Aim:** Root repair materials are in direct contact with periodontal tissues, therefore they must present low tissue damage and cell death. The study objective was to evaluate the cytotoxicity of different repairing cements on periodontal ligament cell culture.

**Method:** 30 extracted human teeth were divided into 6 groups, according to the cement: Biodentine, MTA HP, MTA Flow, MTA Flow 5%, Endosequence and Experimental (tricalcium silicate, bismuth oxide and zinc oxide). The cytotoxicity of the materials was determined using the methyl-thiazole-diphenyl-tetrazolium (MTT) assay after 24 hours of contact between the materials and fibroblasts of the periodontal ligament.

**Results:** All materials showed low or no cytotoxicity to periodontal ligament fibroblasts after 24 hours of contact (p> 0.05).

**Conclusion:** The evaluated repair cements presented low cytotoxicity, being similar for all the materials.

#### D-AMINO ACIDS AS AN ANTI ADHESIVE AGENT AGAINST S. MUTANS

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**Aim:** Streptococcus mutans is the main etiological agent of dental caries, a chronic human disease which is considered as a major public health issue worldwide because of its high incidence.

**Method:** This study was conducted to investigate the anti-adhesion potential of six dextrorotatory amino acids: D-Alanine, D-Arginine, D-Leucine, D-Methionine, D-Tryptophan and D-Valine against Streptococcus mutans UA159. Minimum inhibitory concentration was determined by the broth microdilution method, CLSI M-27A with modifications. For quantification, absorbance value was measured followed by resazurin assay for growth of S. mutans along the dilution series of D-amino acids. Colony Forming Unit (CFU) test was used to determine the adhesion of S. mutans in the presence of 25mM D-amino acids.

**Results:** Absorbance with Resazurin remained constant in all dilutions that indicate that there was no change in the growth and cell viability of S. mutans. Compared with the negative control (p> 0.05) D-Methionine reduced S. mutans adhesion while the other D-amino acids tested significantly facilitated the adhesion of this microorganism.

**Conclusion:** Planktonic growth was not affected by D-amino acids while D-Methionine reduces the adhesion.

#### DELETERIOUS EFFECTS OF RADIOTHERAPY ON NECK AND HEAD REGION IN THE SALIVARY GLANDS

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**Aim:** A review of the literature focusing on the most prevalent oral complications in the radiotherapy approach in the head and neck of the main salivary glands, considering the good prognosis of the disease and the need for quality of life of the patients affected by cancer. The effects induced by radiotherapy may be a consequence of chronic damage to the salivary glands, without control measures.

**Method:** In order to present to health professionals a reflection on these deleterious effects, studies were carried out from 2001 to 2011 in MEDLINE / PUBMED, SCOPUS.

**Results:** Salivary dysfunction caused by irradiation not only impairs quality of life but also long-term oral health, with an increased risk of dental caries and dental extractions. Causing, consequently, acinar necrosis and glandular atrophy, capable of generating the patient mainly

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xerostomia and hyposalivation. Thus, it was verified that individuals with salivary alterations are more susceptible to periodontal disease, excessive caries, taste alterations and oral fungal and bacterial infections. In association with weight loss and nutritional losses, predisposition to slits and ulcerations in the mucosa, halitosis and facilitation of osteoradionecrosis.

**Conclusion:** It is possible to conclude that systematic dental monitoring was able to minimize the effects of radiation on the major salivary glands. Since these complications can lead to consequences that do not allow continued treatment, including alteration of basic oral functions such as eating, drinking and speaking, as well as leading to serious systemic infections.

#### DENTAL ANOMALIES IN ONCO-HEMATOLOGICAL PATIENTS IN CHILDHOOD AND ADOLESCENCE

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**Aim:** Hematologic diseases in children and adolescents constitute a frequent condition and dental treatment must be performed before immunocompromising, as long-term effects of antineoplastic therapy in the developing dentition are expected. Chemo and radiotherapy affect normal proliferative cells and can cause dental developmental defects. This study systematically reviewed the main changes and risks for late effects in dental tissue in patients undergoing treatment and survivors of childhood hematological cancer.

**Method:** Inclusion criteria comprised studies whose patients were submitted to chemo and radiotherapy treatments and radiographic evaluation. After initial research using the terms "tooth abnormalities", "adverse effects", "child", "adolescent", "lymphoma" and "leukemia" in the Pubmed, Cochrane and Web of Science databases between 01/01/1975 to 01/07/2018, of the 1,006 results, only 17 studies were included.

**Results:** Survivors had adverse consequences related to cancer or its treatment. Radiation interfered in tooth development by directly inhibiting the mitotic activity of odontoblasts. Strong evidence was observed to support the association between chemotherapy and dental developmental abnormalities, including dental agenesis, hypoplasia, supernumerary teeth, microdontia, taurodontism, tapered roots, short roots, enlarged pulp chambers, root malnutrition and enamel hypoplasia.

**Conclusion:** Complications associated with dental anomalies can influence the quality of life. We must obtain information that can contribute to the knowledge of new procedures and pre-treatments in order to reduce the adverse effects.

#### DENTISTRY AND BACTERIAL ENDOCARDITIS

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**Aim:** To know the main microorganisms involved in bacterial endocarditis, its incidence, related dental problems and its importance to the dentist.

**Method:** This is a literature review of the literature in the Google Academic and Scielo databases on bacterial endocarditis and its relationship with dentistry.

**Results:** *Streptococcus viridans* and *Staphylococcus aureus* are the main related microorganisms. Its incidence 3 to 10 cases per 100,000 person-years, men are still more affected than women (1.7: 1), in the age group 47-69 years (2018). Some studies indicate that the lymphatic vessels are the first access route of the bacteria of the buccal microbiota to the circulatory chain. Bacterial endocarditis results from a series of failures of the body's defenses in response to numerous episodes of transient bacteremia throughout life. Dental problems such as poor oral hygiene, periapical and periodontal infections, as well as maladaptive dentures, can produce transient bacteremias that are related to bacterial endocarditis. It is potentially dangerous in patients with rheumatic heart disease and cardiac prostheses. It is important for the dentist to know the disease to minimize the possibility of dental procedures causing bacteremia in patients at risk. In this case, antibiotic prophylaxis is recommended.

**Conclusion:** The dentist must know the disease and risk conditions for the development of infective endocarditis and its prevention during dental practice.

#### DETECTION OF PERIODONTAL PATHOGENS IN AGGRESSIVE PERIODONTITIS DESCENDANTS IN DIFFERENT DENTITIONS: CASE CONTROL STUDY

GABRIELA MARTIN BONILHA; AURÉLIO AMORIM; MABELLE MONTEIRO; LARISSA BIZARRE; KARINA RUIZ; MÁRCIO CASATI; ENILSON SALLUM; . RENATO CORRÊA VIANA CASARIN

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**Aim:** The objective of the study was to evaluate the presence of periodontal pathogens in the saliva of children and adolescents (0-18 years old), in different dentitions, belonging to families with a history of aggressive periodontitis, comparing the children of healthy periodontal families.

**Method:** Aggressive group (n=50) included subjects aged of 0 to 18 years from a family with at least one of parents diagnosed with aggressive periodontitis. Healthy group (n=50) included children in gender- and age-matched design from families who both parents have periodontal health. Saliva samples were collected from all subjects, DNA extracted from it and 16S-Illumina MiSeq Gene Sequencing was done, identifying the presence of *Tannerella forsythia* (Tf), *Treponema denticola* (Td), *Porphyromonas gingivalis* (Pg) and *Aggregatibacter actinomycetemcomitans* (Aa).

**Results:** The presence of Tf and Td was significantly higher in Aggressive group during mixed dentition. At Permanent dentition, both groups had a large presence of Tf whereas in relation to Td, the Aggressive group had a significantly larger amount) than in Health group (p <0.05). These pathogens were not detected in edentulous and there was no difference between the

groups in the deciduous dentition (p>0.05).

**Conclusion:** In conclusion, the presence of disease in parents could be related to the increase in periodontal pathogens in their descendants.

#### DETECTION OF VIABLE MICROORGANISMS IN PERIAPICAL LESIONS: A SYSTEMATIC REVIEW AND META-ANALYSIS

JULIANA DELATORRE BRONZATO; RAFAEL AIELLO BOMFIM; CARLOS ESTRELA; BRUCE PASTER; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES

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**Aim:** Microorganisms in periapical lesions have been investigated in a large number of studies, but the presence of viable microorganisms in periapical lesions from endodontic origin is still debatable. The aim of this study was to systematically review the literature on the presence of viable microorganisms in periapical lesions.

**Method:** A protocol was prepared and registered on PROSPERO. Extensive literature research was performed in the most important electronic biomedical databases, such as Pubmed, Scopus, Web of Science, Embase, and Cochrane. Additional studies have been identified from references from relevant articles. This review was conducted following PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines. Two reviewers independently assessed the eligibility for inclusion and extracted data. Culture was the method of identification chosen to define whether the microorganisms were viable or not.

**Results:** From 1544 unique records, 1247 were excluded on the basis of title and abstract. Of the remaining 297 studies, 278 were excluded after full-text review, according to inclusion and exclusion criteria, and 19 were included for qualitative and quantitative analysis. The risk of having viable microorganisms in periapical lesions was 4.02% (95% confidence interval, 2.47%-6.54%). Significant heterogeneity among studies was observed (P < .0001, I<sup>2</sup> = 67%), and funnel plot has shown no risk of bias.

**Conclusion:** It was concluded that there are viable microorganisms in endodontic periapical lesions. Further research is needed to investigate the real contribution of viable microorganisms in periapical lesions.

#### DIABETES MELLITUS ALTERS LIPOTEICHOIC ACID-MEDIATED PRO-INFLAMMATORY CYTOKINE PRODUCTION IN PERIODONTAL TISSUES

LARISSA CRISTINA SPIRITO PENA; THIAGO PEREZ RANGEL; AURELIO AMORIM REIS; KARINA GONZALES SILVÉRIO RUIZ; FRANCISCO HUMBERTO NOCITI-JUNIOR; ENILSON ANTONIO SALLUM; MARCIO ZAFFALON CASATI; RENATO CORREA VIANA CASARIN

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**Aim:** The objective of the study was to evaluate the levels of Lipoteichoic Acid (LTA) present in the periodontal pockets in diabetic patients and their relationship with the cytokine and MMP profile in the subgingival environment of diabetic individuals compared to normoglycemic subjects.

**Method:** This study was a case-control trial. Subjects were designed to each group: DM group (n=15) and Normoglycemic group (n=15). The usual clinical parameters were collected and, after sample collection, patients were treated with Full-Mouth Ultra-sonic Disinfection protocol (Cirano et al, 2012) and included in a supportive therapy. From each individual, crevicular gingival fluid (GCF) was collected from 4 deep pockets (PPD>7mm), one per quadrant. For analysis of the local cytokine profile, GCF samples were analyzed for the detection of IL-10, IL-1βeta, IL-17, IL-4 IFN-γ, MMP-2 and MMP-9 by Luminex/MAGpix technology. From the same samples, LTA levels were analyzed using the human LTA ELISA Kit. From all samples, total protein was determined using a Bradford reaction.

**Results:** Higher levels of LTA, LPS, IL-10, IL-1β and MMP-2 (p<0.05) and lower level of IL-17 were found in DM group (p<0.05). Local levels of LTA was positively correlated with IL-17 and MMP-2 and negatively with IL-10 in DM and Normoglycemic (p<0.05).

**Conclusion:** Diabetic patients had a higher local level of LTA than normoglycemics. In addition to these elevated levels, in diabetic patients, LTA modulated increasing levels of the IL-17 and MMP-2 cytokines while decreasing those of IL-10.

#### DIFFERENT SOLUTIONS OF CHLORHEXIDINE DIGLUCONATE HAVE DIFFERENT ANTIMICROBIAL ACTIVITIES AGAINST ORAL MICROORGANISM

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STATE UNIVERSITY OF LONDRINA

**Aim:** The aim of this study was to evaluate the efficiency of different chlorhexidine digluconate (0.12%) brands against *Streptococcus mutans*, *Escherichia coli* and *Candida albicans*.

**Method:** The bacteria *S. mutans* (UA159) and *E. coli* (ATCC25922) were cultivated in BHI-broth medium and *C. albicans* (SC5314) culture was incubated in YPD-broth medium. An overnight incubation was performed according to growth specification of each strain. Besides, 10ml of agar 2% was poured into Petri dishes. Above the agar layer, was poured 20 ml of BHI-agar (1.5%) mixed with 150μL of each overnight bacterial culture described before. For *C. albicans*, 20 ml of YPD-agar was mixed with 100μL overnight culture. Afterwards, wells were made into the agar and four different brands of chlorhexidine 0.12% (Periotrat, PerioGard, Noplak and manipulated chlorhexidine) were inoculated into each well. After 24 hours incubation, the inhibition halos were measured and statistical analysis was performed through the SigmaPlot program.

**Results:** The PerioGard brand presented the highest inhibition halos for all microorganisms, when compared to the other solutions. The second most effective product was Periotrat, followed by Noplak and manipulated chlorhexidine.

**Conclusion:** The PerioGard was most expensive brand, however showed the highest antimicrobial activity among the tested solutions.

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**DIVERSITY IN BIOFILM FORMATION AMONG STREPTOCOCCUS SANGUINIS STRAINS ISOLATED FROM THE ORAL CAVITY AND THE BLOODSTREAM**

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**Aim:** The aim of this study was to investigate the diversity in biofilm formation phenotypes among *S. sanguinis* clinical isolates. Biofilm formation was compared in vitro assays between seven strains from the oral cavity and two from the bloodstream.

**Method:** Briefly, 96-well polystyrene plates were inoculated with each strain in Brain-Hearth Infusion broth (BHI) supplemented with 1% sucrose and added or not of 10% filter-sterilized human saliva. After incubation (37°C, aerobiosis, 18h), then biofilms were washed three times with distilled H<sub>2</sub>O and stained with 1% crystal violet. After a new series of washes, the stain was eluted by incubation with ethanol. The absorbances (A575nm) of the eluates were determined with the help of a microplate reader, and expressed as indirect relative measures of biofilm biomass.

**Results:** The biofilm phenotypes were highly variable among strains in both conditions tested. The means of biofilm biomass were 2.14 ±0.8 (range: 0.74 to 3.27) in BHI with saliva and 2.57 ±0.93 (range: 0.83 to 3.9) em BHI without saliva. The strain SK49 showed the lowest biofilm formation in both conditions, forming biofilms with biomasses 71.9 and 53.7% lower than the biofilms formed by the reference strain SK36, in BHI supplemented or not with saliva, respectively (Kruskal Wallis; p<0,05). The strains with the highest biofilm formation in the presence and absence of saliva were respectively strains SK115 e SK1056.

**Conclusion:** Therefore, the results indicate a high diversity in biofilm formation phenotypes among *S. sanguinis* strains, and indicate that medium supplementation with human saliva affects biofilm formation in a strain-specific fashion.

**DMSO INCREASES THE OSTEOGENIC POTENTIAL IN L-PDLCs, THROUGH CHANGES IN THE OCT4 AND RUNX2 PROTEINS, IN THE CELL NUCLEUS**

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**Aim:** The distinct osteogenic potential observed among cell populations could affect host response to proposed treatment, making it unpredictable. We investigated the ability of the Dimethyl sulfoxide (DMSO) to increase the osteogenic potential of periodontal ligament cells with low osteogenic potential (I-PDLCs).

**Method:** After detection of I-PDLCs by the biomineralization assay (Alizarin Red), the cells were pre-treated for 3 days with DMSO (50 µM - OM/DMSO group), before osteogenic induction, and then induced to osteogenic differentiation for 21 days; I-PDLCs of control group were induced to osteogenesis for the same period, without pre-treatment with DMSO (OM group). In addition, the effects of DMSO were investigated in the POU5F1-POU-class-5-homeobox-1 (OCT4) and runt-related transcription factor 2 (RUNX2), at early osteogenesis (3 days), at epigenetic (quantitative PCR for DNA (hydroxy)methylation), transcription (Real Time PCR) and protein levels (Western blotting).

**Results:** DMSO increased the I-PDLCs' mineralization in vitro ( $p \leq 0.0001$ ), downregulating the transcripts and translocation of OCT4 and upregulated the RUNX2 at transcription and protein levels (nucleus), comparing to MO ( $p \leq 0.0001$ ), at early osteogenesis. Epigenetic changes were not detected in the OCT4 and RUNX2 gene promoters.

**Conclusion:** DMSO triggered changes at transcript and protein levels in multipotency and osteogenic related-genes, increasing the osteogenic potential in the I-PDLCs.

**DOES THE INTRACANAL DRESSING AFFECT THE BOND STRENGTH OF CERVICAL SEALINGS DURING REGENERATIVE ENDOODONTIC PROCEDURES?**

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**Aim:** This study evaluated the bond strength of materials used in cervical sealing of regenerative endodontics procedures after the use of different intracanal dressings.

**Method:** Four 1-mm slices was obtained from the root of seven maxillary incisors. Then, three 0.7-mm wide holes were drilled. Specimens were randomly assigned to 12 groups (n=10), according to intracanal dressing and cervical sealing. The 4 consecutive slices of each root received standardized irrigation and were filled, with one of the 4 tested medications: calcium hydroxide with distilled water (CHD); calcium hydroxide with 2% chlorhexidine gel (CHP); double antibiotic paste (DAP); or triple antibiotic paste (TAP). After 21 days stored at 37°C, intracanal dressings were removed and the 3 holes of each slice were filled with WMTA, MTA HP or Putty BC RRM. Then, filled slices were stored in a PBS solution (pH 7.2) for 7 days at 37°C. A push-out test was performed at a crosshead speed of 0.5 mm/min. Friedman and Kruskal-Wallis tests were used respectively to estimate the impact of the independent variables (medications and materials) on the push-out values ( $\alpha = 5\%$ ).

**Results:** Overall results showed that intracanal dressings do not influence the results of WMTA and MTA HP; however, these materials presented worst results in CHP and DAP groups, respectively. Intracanal dressings affected the results of Putty BC RRM, presenting the lowest values in DAP group. As regards cervical sealing materials, WMTA presented the best results, followed by MTA HP and Putty BC RRM.

**Conclusion:** Intracanal dressings affect the bond strength of cervical sealings. WMTA presented superior performance as cervical sealing.

**DOES THE RECONSTRUCTION PARAMETERS OF MICROCOMPUTED TOMOGRAPHY INFLUENCE THE ANALYSIS OF BONE MINERAL DENSITY?**

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**Aim:** The aim of this study was to evaluate the influence of reconstruction parameters of micro-computed tomography (microCT) images on the bone mineral density (BMD) analysis.

**Method:** The sample consisted of microCT images of maxillae of five Wistar rats, which were acquired using the microtomograph SkyScan 1174 (Bruker, Kontich, Belgium). Following the manufacturer's recommendations (standard protocol - SP), each acquisition was reconstructed for the degree of application of the artifact correction tools (smoothing filter (SF) - degree 2, ring artifact correction (RAC) - level 5, and beam hardening correction (BHC) - 45%). Furthermore, the images were reconstructed using 36 other protocols combining different degrees of application of these tools (P0 to P35). BMD analysis was performed for each reconstructed image using CTAn software (Bruker, Kontich, Belgium). The values obtained for each protocol were compared to the standard protocol using repeated measure one-way ANOVA with Dunnett post-hoc test.

**Results:** BMD values from all protocols that used BHC at 45% did not differ from those of SP ( $p>0.05$ ), as well as two protocols (P13 and P16) that used BHC at 30%. For the other protocols, the BMD values were directly proportional to the level of application of the BHC tool, and presented a statistically significant difference from SP ( $p<0.05$ ). The variation in the degree of application of the smoothing filter and ring artifact correction tools did not interfere in BMD values.

**Conclusion:** In conclusion, BMD values measured in microCT images are influenced by the BHC level, in a direct relationship, that is, higher levels of BHC induces higher values of BMD.

**DOES VIOLET LED ENHANCE THE EFFICACY AND ALTERATIONS ON ENAMEL SURFACE PROMOTED BY IN-OFFICE BLEACHING GELS?**

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**Aim:** This study evaluated in vitro the color change and surface morphology of enamel submitted to in-office bleaching with violet LED (LED) combined or not with 35% hydrogen peroxide (HP) or 37% carbamide peroxide (CP).

**Method:** Bovine incisor crowns were stained with black tea and received the following treatments (n=10): 1) CP; 2) HP; 3) CP/LED; 4) HP/LED; 5) LED; 6) Control. LED irradiation was based on 20 1-min irradiations with 30-s consecutive intervals for 10 sessions when applied alone or for 3 sessions when combined with bleaching gels. 7-day intervals were adopted among sessions with the specimens kept in artificial saliva. Color change ( $\Delta E$ ,  $\Delta L$ ,  $\Delta a$  e  $\Delta b$ ) was determined with a spectrophotometer after staining and 14 days elapsed from bleaching. Enamel surface was analyzed by means of scanning electron microscopy.  $\Delta E$  and  $\Delta L$  were tested with two-way ANOVA and Tukey's test.  $\Delta a$  e  $\Delta b$  were evaluated under Kruskal-Wallis and Mann-Whitney tests (5%).

**Results:** LED promoted statistically greater  $\Delta E$  and  $\Delta L$  than C ( $p<0.05$ ).  $\Delta E$  was similar for LED/HP and LED/CP ( $p>0.05$ ), even though CP's was lower than LED/CP ( $p<0.05$ ). LED/HP and LED/CP enhanced  $\Delta L$  and decreased  $\Delta b$  in comparison to LED alone ( $p<0.05$ ).  $\Delta a$  were equal for LED and LED/CP ( $p>0.05$ ). Although HP and CP promoted alterations on the enamel surface, the LED application did not exacerbate the porosities and interprismatic affected areas provoked by the bleaching gels.

**Conclusion:** LED enhanced the efficacy of only CP gel at the same time it did not exacerbate enamel surface changes caused by high-concentrated gels.

**DOSE-RESPONSE EFFECT OF CITRIC ACID ON TITANIUM: SURFACE, ELECTROCHEMICAL AND ANTIMICROBIAL PROPERTIES**

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**Aim:** This study evaluated the dose-response effect of citric acid (CA) on *S. sanguinis* biofilm and its influence on titanium (Ti) surface and electrochemical behavior.

**Method:** Ti discs were exposed during 8 min to four CA concentrations (1%, 10%, 20% and 40%) and two application protocols (immersion and friction). Solution of 0.9% sodium chloride (NaCl) was used as control. Biofilm composed of *S. sanguinis* was formed on Ti surface for 72 h and then exposed to treatments. Colony forming units (CFU) counts and scanning electron microscopy were conducted. Treated discs were evaluated by profilometry, wettability, confocal laser scanning microscopy and electrochemical tests. Data were statistically analyzed (2-way ANOVA and Tukey test,  $\alpha=0.05$ ).

**Results:** The CFU count was significantly lower for CA groups compared to NaCl ( $p<0.05$ ), except for 1% friction group. The application of 40% CA by immersion increased Ti surface roughness, but exhibited the lowest values of Ra and Rt when it was applied by friction ( $p<0.05$ ). All friction groups presented greater wettability than immersion ( $p<0.05$ ). Confocal images showed more evident discoloration and pitting features for 20% and 40% immersion groups. The 20% friction group showed the highest polarization resistance while 10% displayed the lowest capacitance ( $p<0.05$ ).

**Conclusion:** Citric acid significantly reduced the biofilm for most concentrations, but the immersion method further alters the Ti topography by showing higher degree of pitting and roughness. The 10% CA friction group seems to cause minor changes on Ti surface without impair the antimicrobial potential or corrosion resistance. (FAPESP 2018/14117-0)

**DOUBLE RETROMOLAR FORAMEN DURING A THIRD MOLAR EXTRACTION: ANATOMICAL AND SURGICAL CONSIDERATIONS IN A RARE CASE REPORT**

## All abstracts appear as submitted by the authors without editing

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**Aim:** The aim of this study was to report the occurrence of a double retromolar foramen during the extraction of a mandibular third molar.

**Method:** A 20-year-old male patient was referred to the dental clinic of the Federal University of Alagoas for extraction of the maxillary and mandibular left third molars. From a panoramic radiograph evaluation, it was suggested the presence of the retromolar foramen. Prior the tooth extraction, a double retromolar foramen was identified during the muco-periosteal detachment, which were located on the retromolar triangle region, distally to the mandibular left third molar. In this region, a mild hemorrhage was controlled using gaze soaked in a solution of local anesthetic with vasoconstrictor. The occurrence of this anatomical variant was registered by means of photographs during the surgical procedure.

**Results:**

**Conclusion:** The anatomical knowledge of this inconstant foramen is important clinically regarding mandibular third molar extraction, avoiding accidents and complications during this surgical procedure.

#### DYNAMICS OF COLONIZATION IN RELATIVES OF PATIENTS WITH AGGRESSIVE PERIODONTITIS: A CASE-CONTROL STUDY

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**Aim:** Aggressive Periodontitis (AgP) is a disease that affects systemically healthy individuals, characterized by the early and severe loss of the periodontal insertion. Family aggregation is an important characteristic and the periodontal condition of the parents affects the oral microbiome of children and may increase the risk of occurrence of this disease. The objective of this control case study was to evaluate the dynamics of colonization in the different phases of the dentition of individuals from 0 to 18 years old, belonging to families with a history of aggressive periodontitis comparing with children of parents with periodontal health.

**Method:** One hundred patients were selected, with gender and age pairing, and divided according to the dentition phase: edentulous (n = 5), deciduous (n = 15), mixed (n = 15) and permanent (n = 15) for aggressive groups and health, respectively. From each patient, unstimulated saliva was collected.

**Results:** The Bioinformatics analysis showed that there was a statistically significant difference in  $\beta$  diversity in relation to mixed dentition (Adonis,  $p < 0.003$ ). The differences in the  $\beta$  diversity between the groups were maintained in the mixed and permanent dentition (Adonis,  $p < 0.007$ ), and a greater abundance of species associated with dysbiosis.

**Conclusion:** Thus, the mixed dentition in AgP is the phase of starting a more pathogenic microbiota and dysbiotic characteristics, which may be associated with a higher risk for the development of the periodontal disease. Showing that perform preventive interventions and follow-up of children of parents with AgP may avoid the onset of the disease at early ages.

#### EARLY DENTAL IMPLANT FAILURE: MORSE TAPER VS EXTERNAL HEXAGON CONNECTION

VITOR JOSÉ DA FONSECA; RENATA SILVEIRA SAGNORI CLAUDIO FERREIRA NÓIA ALEXANDER TADEU SVERZUT; MÁRCIO DE MORAES

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**Aim:** With the evolution of the implantology, several prosthetic connections were suggested aiming the reduction of failure rates and better aesthetic results. Despite this, there is insufficient evidence in the literature regarding the relationship between early failure and the prosthetic platform.

**Method:** The present retrospective study evaluated the early failure of implants installed in the School of Dentistry at Piracicaba - State University of Campinas (FOP-UNICAMP) between January 1996 and December 2017, comparing the most used platforms in the institution. The significance level considered was 5%.

**Results:** The total amount of 4685 implants were found in 1612 patients. Of these, 2538 implants had an external hexagonal (EH) platform, and 2147 implants had a cone morse (CM) connection. There were found 153 early failures in the study, totaling 3.2% of the sample. After Chi-square test, a statistically significant failure rate was observed in the EH group ( $p < 0.01$ ).

In addition, binary logistic regression was performed to evaluate the role of the factors analyzed in the early failure of implants. CM implants presented a lower probability of failure when compared to EH (OR = 2.22 with a 95% confidence interval of 1.51-3.25).

**Conclusion:** The results of this study, in addition to providing data on the influence of factors already known in the early failure, showed a higher rate of early failure for external hexagonal platform implants when compared to implants of cone morse platform in our clinical experience.

#### EDUCATIONAL PRACTICES IN THE PREVENTION OF OVERWEIGHT AND OBESITY

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**Aim:** To verify the educational practices addressed by the Family Health Teams in the prevention of overweight and obesity.

**Method:** Literature review in databases.

**Results:** The educational practices have as principle to contribute in the stimulation of reflection, in the development of critical awareness of the population, in relation to their own

patterns of food consumption, reducing the rates of overweight and obesity. In relation to the planning of actions of nutritional intervention to prevent overweight and obesity, there are groups that allow the integration of different people who exchange information, knowledge and experiences. It is important for the family health team to associate the educational practice, to welcome, to listen, to understand, to respect and to assist with scientifically based and socially sensitive intervention measures that may interfere with this public health problem in defense of life.

**Conclusion:** It is concluded that the knowledge associated with the educational practices of the family health team, can reduce the rates of overweight and obesity, besides improving the self-care of the people, with subsequent improvement of the quality of life.

#### EFFECT OF ALL-ON-FOUR AND ALL-ON-SIX TREATMENT CONCEPTS ON MARGINAL MISFIT, SCREW LOOSENING AND MASTICATORY SIMULATION

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**Aim:** This study compared the effect of masticatory simulation in full-arch fixed prostheses supported by 4 (all-on-four) and 6 (all-on-six) implants on marginal misfit and screw loosening of prosthetic screws.

**Method:** Ten maxillary frameworks were obtained through subtractive CAD-CAM system in cobalt-chromium (CoCr) alloy: All-on-four (n=5) and all-on-six (n=5). Veneering material was applied in all frameworks. The prostheses were set in work models and each prosthetic screw received 10-Ncm torque. After 10 minutes all screws were retightened, and screw loosening value (SLV) was obtained after 24h with a digital torque meter. The marginal misfit (MM) was analyzed by optical microscope. SLV and MM were reevaluated after 106 mechanical cycles (2Hz/150N) in all prostheses.

**Results:** The results were submitted to two-way repeated measures ANOVA followed by Bonferroni test ( $\alpha=0.05$ ). Marginal misfit was not influenced by masticatory simulation in both all-on-four and all-on-six prostheses ( $p>0.05$ ). All-on- four prostheses presented lower marginal misfit before and after masticatory simulation ( $p<0.05$ ). SLV was only influenced by number of implants ( $p=0.011$ ). After masticatory simulation, SLV of all-on-six prostheses were higher than all-on-four prostheses ( $p=0.044$ ).

**Conclusion:** Within the limitations of this study, all-on-six prostheses may be a well clinical solution for maxillary edentulous patients, since this model of rehabilitation presented lower SLV when compared to the all-on-four. Even though, one year of masticatory simulation did not influence marginal misfit and screw loosening of implant fixed prostheses supported by 4 and 6 implants.

#### EFFECT OF CHEMICAL DEGRADATION ON THE SURFACE OF DIFFERENT COMPOSITES

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**Aim:** The aim was to evaluate the influence of acidic beverages on the color stability and on the surface roughness of a microhybrid and a nanofilled composite.

**Method:** Forty discs (6.0mm x 2.0mm) of the microhybrid composite (Z250XT, 3M ESPE) and 40 of the nanofilled composite (Z350XT, 3M ESPE) were made. After the measurement of the initial color and the initial roughness, 10 discs of each composite were individually immersed in artificial saliva (control, pH = 6.4), orange juice (3.4), lime soda (pH = 2.9) and red wine (pH = 3.1) during 4 hours per day at 37°C for 30 days. At the end of the experiment, the final analysis of color and surface roughness were performed. The data obtained for the color stability were analyzed by Kruskal-Wallis and Dunn's test ( $\alpha=5\%$ ). For the analysis of the surface roughness, the t test for related samples was used ( $\alpha=5\%$ ).

**Results:** The color changes promoted by artificial saliva, orange juice and soda were similar, but they were statistically different from staining produced by red wine, in both composites tested. Red wine produced the same degree of staining in both composites. It was also observed that orange juice, soda and red increased the surface roughness of the composite discs.

**Conclusion:** Red wine significantly changed the color of micro-hybrid and nanoparticle composites. Furthermore, all beverages increased the surface roughness of the micro-hybrid and nanofill composites.

#### EFFECT OF CHEMO-MECHANICAL PREPARATION AND INTRACANAL MEDICATION IN THE REDUCTION OF BACTERIA IN ENDODONTIC RETREATMENT

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**Aim:** This study analyzed the microbiota of teeth with endodontic treatment failure in different phases of the endodontic retreatment, by genetic sequencing 16S rRNA (GS) and nested PCR.

**Method:** Samples from 20 root canals were collected with sterile paper point after removal of the gutta-percha (C1), after chemo-mechanical preparation (CMP) (C2) and after intracanal medication (ICM) (C3). Microbial identification was performed by the GS and Nested PCR. Data were analyzed by Shapiro-Wilk test for normality, and ANOVA and post- post-hoc Tukey-Kramer for intergroup analysis ( $p>0.05$ ).

**Results:** Bacteria were collected from all root canals. Eighty-nine strains were identified using

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the 16S rRNA genetic sequencing. Sixty-five found after gutta-percha removal, 15 after CMP and 9 after ICM. *E. faecalis* was the most predominant bacteria in all samples. Gram-positive cocci bacteria predominated; however, Gram-negative species were also detected. Among the 16 bacterial primers tested for the Nested PCR, 4 were not detected in all retreatment phases, including *D. pneumosintes*, *F. alocis*, *P. nigrescens* and *T. soerensii*. The most prevalent species in all phases of the endodontic retreatment were *E. faecalis* and *P. gingivalis* (20/20). Negative associations were also found for previous and current pain.

**Conclusion:** The microbiota present in teeth with failure of the root canal therapy is polymicrobial and *Enterococcus Faecalis* is the most commonly found bacteria, regardless of the method used for microbial identification. Supported by: FAPESP 2015/23479-5, 2017/25242-8, CNPq 308162/2014-5 and CAPES.

#### EFFECT OF CPP-ACPF AND PHOTOBIO-MODULATION ON DENTAL HYPERSENSITIVITY: A RANDOMIZED CONTROLLED CLINICAL TRIAL

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**Aim:** This randomized, double-blind, parallel, placebo-controlled clinical trial evaluated the effect of the casein phosphopeptide-amorphous calcium phosphate fluoride (CPP-ACPF) associated with photobiomodulation (PBM) in the treatment of dentin hypersensitivity (DH).

**Method:** Eighty teeth with DH were randomized into four groups and received three treatment sessions: PLACEBO = placebo + PBM mimetization; CPP-ACPF = CPP-ACPF + PBM mimetization; PBM = placebo + PBM; CPP-ACPF+PBM = CPP-ACPF + PBM. Tactile (exploratory probe) and evaporative (triple syringe) stimuli were used to measure DH and were recorded with the aid of a visual analogue scale (VAS) after the 1st, 2nd and 3rd treatment sessions and one-month follow-up. DH was analyzed using a mixed analysis of variance (ANOVA) test and the Bonferroni post-hoc was applied in the multiple-comparisons evaluation. A significance level of 5% was considered for all the analysis.

**Results:** The intragroup comparison of all the evaluated groups showed a significant reduction in DH ( $p < 0.05$ ) with both stimuli after one-month follow-up. The intergroup comparison assessed with the evaporative stimulus showed that CPP-ACPF+PBM significantly reduced DH when compared to the rest of treatments, after one-month follow-up.

**Conclusion:** It was concluded that after one-month follow-up, the association of CPP-ACPF with PBM was effective in the reduction of DH of the participants of this study.

#### EFFECT OF CURCUMIN-MICROEMULSION ON EXPERIMENTAL ORAL CARCINOGENESIS INDUCED BY 4-NQO IN RATS

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**Aim:** This study aimed to evaluate the effect of curcumin in microemulsion, administered by oral intubation on the modulation of oral experimental carcinogenesis induced by 4-NQO.

**Method:** Sixty male rats were distributed into 4 groups ( $n=15$ /group): 3 groups were submitted to the oral carcinogenesis model chemically induced by administration of 4-NQO carcinogen (50ppm) dissolved in drinking water for 12 weeks; while the animals of the negative control group received water only. Among the three groups, one group was treated with curcumin-microemulsion (100mg/kg) and another group with vehicle (100mg/kg), simultaneously with the carcinogenesis, daily by oral intubation; and the third group received no other treatment than 4-NQO. After the euthanasia, the tongue was dissected and processed for the H&E and immunohistochemistry analyses.

**Results:** 4-NQO administration induced the epithelial dysplasia's development in different degrees on tongue of the animals treated with 4-NQO. Treatment with curcumin-microemulsion reduced these changes when compared to other groups submitted to carcinogenesis. Immunohistochemical analysis showed that treatment with 4-NQO increased Ki67 expression in all groups compared to the control group. In addition, when compared to the 4-NQO and 4-NQO+Vehicle groups, the treatment with curcumin-microemulsion reduced the Ki67 expression.

**Conclusion:** The results demonstrate that curcumin-microemulsion has chemo-preventive activity against tissue and molecular changes during the oral carcinogenesis process induced by 4-NQO.

#### EFFECT OF DIFFERENT STORAGE MEDIA ON BOND STRENGTH OF BLEACHED TEETH: IN VITRO STUDY VS. IN SITU

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**Aim:** Evaluate the influence of different storage media (SM) on enamel and dentin bond strength (BS) after bleaching.

**Method:** 160 samples were divided into 10 groups ( $n=16$ ) according to SM and dental substrate for bond strength (BS), enamel (e) or dentin (d). The control group (C): unbleached samples stored in purified water (Ce/Cd) and the bleached groups stored in different SM: purified water (PWe/PWd), artificial saliva (ASe/ASd), natural saliva (NSe/NSd) and in situ (ISe/ISd). The samples were submitted to their SM for 24h before and after bleaching. The bleaching gel of 35% hydrogen peroxide was applied on enamel surface (45min). Two pillars in composite resin were performed on E and two in D. The restorations were submitted to micro-shear. The failure mode (FM) were analyzed in Scanning Electron Microscopy (SEM). Microshear bond strength data (mSBS) were submitted to analysis of variance one-way (ANOVA) and Tukey's test. The FM data were analyzed by the chi-square test ( $\alpha=5\%$ ).

**Results:** The enamel mSBS, ISe presented lower values, differing statistically from the other groups. Ce, PWe, ASe, NSe did not differ from each other. No differences occurred in mSBS on dentin. Adhesive failures were prevalence on enamel, and mixed failure on dentin. SM influenced enamel BS, in situ storage presented lower bond strength on enamel to mSBS and in vitro storage showed similar results between bleached and control groups. The dentin BS was not influenced by SM.

**Conclusion:** SM influenced the BS of the bleached enamel. The samples stored in situ presented lower values of BS in bleached enamel. BS in dentin was not influenced by office bleaching, independent of the SM.

#### EFFECT OF DIFFERENT TOOTHPASTES IN THE EROSIVE/ABRASIVE CHALLENGE: STUDY IN SITU

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**Aim:** The objective of this in situ study was to evaluate the effect of toothpastes with different active principles in erosive/abrasive cycle. Twelve participants were selected to participate in the study.

**Method:** The dentifrices were selected based on their active principle: 0 ppm fluoride (placebo), 1450 ppm F as sodium monofluorophosphate (MFP), 1450 ppm F as sodium fluoride (NaF), 1100 ppm F as Stannous fluoride and 350 ppm F as sodium fluoride (SnF 2 /NaF), and Chitosan 0,5%, 1100 ppm F as Stannous fluoride and 350 ppm F as sodium fluoride (Chi/SnF 2 /NaF). The experimental cycle consisted of 5 phases of 5 days each. In a 5-day erosion cycle was intercalated the demineralization which was performed outside the volunteer's mouth (1min, 1% citric acid, pH=3.5) and remineralization with toothpaste performed inside the volunteer's mouth. For remineralization the intraoral device was used at the time of the brushing which was performed before the first and after the last daily erosive challenge (brushing for 15s with 200g load and slurry immersion, totaling 2 minutes in mouth). Surface profilometry was performed in the end of the experimental cycle and the data were submitted to two-way ANOVA and Tukey test ( $\alpha=0.05$ ).

**Results:** The MFP group presented greater loss of enamel and did not differ statistically from the control ( $p > 0.05$ ). The SnF 2 /NaF and Chi/SnF 2 /NaF showed less enamel loss among all the dentifrices evaluated ( $p < 0.05$ ).

**Conclusion:** The dentifrice based on fluoride, tin and chitosan presented promising results in the protection of the enamel during erosive/abrasive cycles for the analysis of surface profilometry.

#### EFFECT OF EXPERIMENTAL CONDITIONERS ON THE BOND STRENGTH AND MORPHOLOGY OF THE DENTIN-ADHESIVE INTERFACE

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**Aim:** This study evaluated the effects of different dentin conditioners on the microtensile bond strength, failure pattern, and morphology of the bonding interface.

**Method:** Forty third molars were used for the microtensile bond strength test ( $n=8$ ). An etch-and-rinse adhesive (Adper Single Bond 2, 3M) was applied on moist (control), and air-dried (experimental groups) etched dentin after treatment with 37% phosphoric acid (PA), 3% aluminum nitrate + 2% oxalic acid (AN), 6.8% ferric oxalate + 10% citric acid (FO), or 10% citric acid (CA). Data were analyzed by Shapiro-Wilk's normality test, followed by one-way ANOVA with Tukey's test ( $\alpha=0.05$ ). Failure modes were evaluated by scanning electron microscopy (SEM). Ten additional teeth ( $n=2$ ) were prepared using the adhesive mixed with rhodamine B, and the morphology of the bonding interface was assessed by confocal laser scanning microscopy (CLSM).

**Results:** The control group (wet-bonding with PA) presented higher bond strength than the other groups. Bond strengths of experimental conditioners (NA, FO, and CA) did not differ among themselves ( $p > 0.05$ ). Mixed failures prevailed in the control and CA groups, while adhesive failures were predominant in the NA and FO groups. In the control group, a hybrid layer with long resin tags could be observed. In the NA and CA groups, the formation of poor-quality hybrid layers was evident, while no hybridization occurred in the FO group.

**Conclusion:** Adhesive application on air-dried dentin etched with the tested conditioners led to poor hybrid layer formation and lower bond strengths compared to the traditional wet-bonding technique with PA.

#### EFFECT OF EXTRINSIC STAINING ON THE EFFICACY OF VIOLET LED BLEACHING

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**Aim:** This in vitro study evaluated the effect of artificial staining on enamel color change after bleaching with violet LED (LED) combined or not with 35% hydrogen peroxide (HP) or 37% carbamide peroxide (CP).

**Method:** Two hundred enamel blocks ( $n=50$ ) were either stained with cigarette smoke (SK), coffee (CF), red wine (RW) or not stained (CONT). These specimens were bleached with ( $n=10$ ): 1) LED, 2) LED/CP 3) CP 4) LED/HP 5) HP. Twenty 1-min irradiations of LED at consecutive 30-s intervals were performed without bleaching agents, in 10 sessions or associated with bleaching agents in 3 sessions. Specimens were stored in artificial saliva among sessions. Colorimetric evaluation was conducted with a digital spectrophotometer after staining (T 0) and 24 h after bleaching (T B).  $\Delta E$  (T B - T 0) was calculated and submitted to two-way ANOVA and Tukey test ( $\alpha=5\%$ ).

**Results:** LED alone promoted greater  $\Delta E$  than CONT ( $p < 0.05$ ), regardless the staining type. LED combined with CP promoted greater  $\Delta E$  than CP alone ( $p < 0.05$ ), except for the SK-

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stained enamel, in which the bleaching protocols were similar ( $p=0.067$ ). LED/CP exhibited similar  $\Delta E$  than HP-treated groups when enamel was stained with SK, RW or not (CONT,  $p>0.05$ ). LED/HP promoted greater  $\Delta E$  than HP bleaching, for the CF-stained enamel ( $p=0.012$ )

**Conclusion:** LED alone was capable of changing color of stained enamel, regardless the staining type. The combination LED/CP was more effective than CP when enamel was stained with coffee or red wine and the combination LED/HP was more effective than HP, when enamel was stained with coffee.

#### EFFECT OF HOME AND IN-OFFICE DENTAL BLEACHING WITH/WITHOUT CALCIUM ON TOOTH ENAMEL WITH INITIAL STAGES OF EROSION

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**Aim:** This study evaluated the effect of home and in-office bleaching gels, with and without calcium, in tooth with initial stages of erosion, on the change of color and superficial microhardness of tooth enamel.

**Method:** Bovine blocks (120) were divided into 5 groups ( $n=12$ ) according with the whitening treatment: G1= without treatment (control group), G2= Hydrogen Peroxide (HP) 35% without calcium (HP Maxx - FGM), G3= HP 35% with calcium (HP Blue Calcium - FGM), G4= HP 7.5% without calcium (Pola Day - SDI), G5= HP 7.5% with calcium (White Class - FGM). Color analysis and microhardness were made in different tooth blocks, 12 specimens for each test. Prior to the bleaching treatment, the specimens went through a process of erosion on the surface of enamel in which they were immersed in 0, 01 m solution of HCl at pH of 2,3. Color and microhardness analyses were measured by means of the spectrophotometer, analyzed by the CIE Lab system according to the coordinates ( $L^*$ ,  $a^*$ ,  $b^*$ ) and microhardness Knoop, respectively. After exploratory analysis, the data was submitted to ANOVA and Turkey's test.

**Results:** All groups, except the control group showed higher values of  $\Delta E$  and  $\Delta L$  and smaller values for  $\Delta b$ . For microhardness, when evaluated different times, only the group bleached with HP 7.5%, with the presence of calcium, differed statistically from the others, showing smaller final values.

**Conclusion:** Whitening efficacy was not influenced by different types of bleaching gels. However, when evaluated the microhardness, gels with addition of calcium and free of caropol as thickener in their formulation, presented better values.

#### EFFECT OF IMPLANT LENGH ON STRESS INDUCED BY OVERDENTURES WITH SINGLE IMPLANT IN PHOTOELASTIC MODELS

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**Aim:** The aim of this study was to verify the stress induced by overdentures with one implant with different lengths (7, 9 and 11 mm) in Class II mandibular photoelastic models submitted to axial loading.

**Method:** Initially, a mandibular gypsum matrix with a 13 mm height was obtained, with a hole in the median line for placement of the implant analogue. By means of a matrix transfer molding, silicone molds were obtained, where the implants were screwed and the photoelastic resin was poured in order to obtain the photoelastic models ( $n = 1$ ) for the groups A, B and C. Plaster cast were made upper and lower conventional total prostheses by the traditional method and later the mandibular o'ring was captured by the direct technique. In the photoelastic analysis was utilized the plan transmission technique with circular polariscope (PTH-A01/LPM-UFU-MG) attached to a digital camera.

**Results:** As a result, in group A and in group B, there are concentrated tensions at the apical border of the implant and basal region of the model, and in group A it was observed a higher concentration of tension, already in group C, it is noticed that the model presents stresses concentrated at the apical border of the implant, basal region of the model and at the cervical region of the implant. In all groups there was an increase in the fringes intensity as the axial load increased.

**Conclusion:** Based on these results, it can be concluded that the tension was concentrated predominantly around the inferior edge of the implants, whatever the length; As longer as the implant length, lower the stress concentration; as higher as the axial loading, higher stress concentration.

#### EFFECT OF INVERTED AMINO ACIDS ON PLANKTONIC GROWTH AND ADHESION OF EARLY COLONIZERS

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**Aim:** Early colonizers adhere to dental surface and facilitate initial adhesion of secondary/late colonizers to form oral biofilms which may cause periodontitis and caries. This study determined the antimicrobial potency and anti-adhesion properties of five inverted amino acids, d- Alanine, d- Arginine, d- Leucine, d- Methionine and d- Tryptophan on five early colonizer streptococci, S. gordonii, S. mitis, S. oralis, S. salivarius and S. sanguinis and their mixed species.

**Method:** S. gordonii (ATCC 35105), S. mitis (ATCC 49456), S. oralis (ATCC 10557), S. salivarius (ATCC 7073) and S. sanguinis (ATCC BAA-1455) cultures were used as test strains. Concentration dependent antimicrobial potency of d- amino acids was determined by CLSI M-27A broth microdilution method with Alamar blue stain modification. Adhesion of primary colonizers with the presence of 25mM d- Amino acids was determined using colony forming

unit (CFU) assay.

**Results:** Absorbance measurement followed by Alamar blue stain, remained constant along all d-amino acid dilutions. d- Alanine significantly facilitates the adhesion of all test strains. All tested d- amino acids reduced the adhesion of S. mitis, S. oralis and mixed sp. d- Methionine and d- Tryptophan decrease the adhesion of S. salivarius, S. sanguis and no significant different of adhesion with other three amino acids compared to negative control ( $p>0.05$ ).

**Conclusion:** d- amino acids tested do not inhibit the growth of planktonic counterpart and the growth is concentration independent. Further they are potential substances to prevent initial adhesion of mixed species oral biofilms.

#### EFFECT OF LIGHT CURING UNIT AND CERAMIC THICKNESS AND SHADE ON IRRADIANCE AND MICROHARDNESS OF A RESIN CEMENT

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**Aim:** This study evaluated the effect of the emission of one or multiple wavelengths through a low translucency (LT) IPS e.max Press ceramic discs with different thicknesses and shades on the transmitted irradiance and Knoop microhardness (KHN) of a resin cement.

**Method:** Forty-five LT ceramic discs of lithium disilicate were obtained in the thicknesses of 0.5 mm, 1.5 mm and 2.0 mm and shades A3.5, A1 and BL2 ( $n=5$ ). One side of the disc was finished, polished and glazed. The Radii-cal (monowave) and Bluephase G2 (polywave) devices were used as light curing units (LCU). The irradiance ( $mW/cm^2$ ) was evaluated with the potentiometer Ophir 10<sup>3</sup>-V2-SH immediately after ceramic interposition. Three readings were performed for each disc. The KHN test measurements of Varolink Esthetic LC were performed using a microhardness tester after 24 h of storage. Five indentations were obtained along the sample at 100  $\mu m$  depth. A final average for sample were obtained. Data were submitted to ANOVA followed by Tukey's test ( $\alpha=0.05$ ).

**Results:** LED Bluephase G2 device showed statistically significant higher values compared to the Radii-cal for irradiance and microhardness. KHN values were significantly influenced by LCU type, color and thickness ( $p=0.0307$ ).

**Conclusion:** The increased thickness significantly reduced the irradiance values for all groups regardless of LCU and KHN of resin cement for the Radii-Cal groups.

#### EFFECT OF PH-CYCLING AND TOOTHBRUSH ABRASION ON ESTHETIC RESTORATIVE MATERIALS

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**Aim:** The effect of chemical challenges (pH-cycling) and mechanical degradation (toothbrush abrasion) in hardness and roughness surface of different restorative materials

**Method:** Sixteen specimens obtained from each material (Ketac Molar Easy Mix, Vitremer, Ketac N100 and Filtek Z350) divided into 8 groups ( $n = 8$ ) according to the material and the storage medium: pH cycling and deionized water. All specimens were submitted to the measurement of hardness and roughness values ( $R_a$ ) in three different times: initial, after storage for 15 days and after toothbrush abrasion. The data were submitted to repeated measures three-way ANOVA and Tukey-Kramer's tests ( $p<0.05$ ).

**Results:** All materials presented decrease of the original values of hardness after pH cycling. The Filtek Z350 after abrasion presented the highest surface hardness values and the others did not present any statistically significant difference. The Ketac N100 was the only material that showed no change in hardness when submitted to pH cycling and abrasion, the others, Ketac Molar Easy Mix, Vitremer and Filtek Z350 showed a decrease on hardness values. The Ketac molar Easy Mix did not change the values of roughness after chemical and mechanical degradation, while Ketac N100, Filtek Z350 and Filtek Vitremer increased surface roughness values.

**Conclusion:** The nanofilled composite Filtek Z350 was the material that showed the best resistance to chemical and mechanical degradation.

#### EFFECT OF RADIOTHERAPY ON A CHLORHEXIDINE-MODIFIED GLASS IONOMER CEMENT

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**Aim:** Radiotherapy (RXT) is one of the main treatments in cases of head and neck cancer and effects of radiation, such as radiation caries, xerostomia and oral mucositis are among the most observed effects after treatment. Chlorhexidine incorporated in glass ionomer cement (GIC) has shown effective antimicrobial activity against the Streptococcus mutans in vitro conditions. However, there is no study testing antibacterial action of these modified GICs under irradiation action. Aim of this work is evaluate antibacterial effect against S. mutans and biocompatibility of diacetate chlorhexidine-modified (dCHX) GICs under radiotherapy conditions.

**Method:** dCHX was incorporated in GIC with the percentages at 0%, 0.5%, 1.0% and 2.0%. Half of the samples of each concentration were irradiated with 60 Gy ( $n=10$ ). Antimicrobial activity was tested after exhaustion, with daily changes of sterile distilled water for 270 days. Cytotoxicity was performed by MTT assay according to ISO 10993-5/2009.

**Results:** All experimental groups were able to inhibit growth of S. mutans. Cytotoxicity was higher in irradiated groups, regardless of the percentage of incorporation of dCHX.

**Conclusion:** Considering the limitations of this work, it can be concluded that: 1- radiation or incorporation of dCHX not interfere with the antimicrobial activity against S. mutans for up to

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270 days of exhaustion and 2 - radiation influenced the cytotoxicity, reducing cell viability in all groups.

#### EFFECT OF THE ADDITION OF AN ANTIMICROBIAL AGENT ON THE SORPTION AND SOLUBILITY OF A FISSURE SEALANT

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**Aim:** The study aimed to evaluate the effects of Chlorhexidine Diacetate (CHX) addition into a commercial resin sealant on the sorption and solubility properties.

**Method:** Two concentrations of CHX (0.1% and 0.2%) were added to a resin sealant (FluroShield®). The specimens were distributed in 3 groups: sealant (S), sealant + 0.1% CHX (S1) and sealant + 0.2% CHX (S2) (n=5) and were prepared using molds and matrices (7mm x 1mm) that were filled with the materials and photoactivated. The sorption and solubility followed the ISO 4049 standards. The specimens were stored individually and after 24 h, the containers were opened and placed in a desiccator with silica gel in a vacuum setting. After a 22 x 2 h cycle, the specimens were weighed and the cycle was repeated until to obtain a constant mass (M1). The diameter and thickness were measured and the volume was calculated (V, in mm<sup>3</sup>). Then, they were immersed in distilled water for 7 days, dried, weighed until to obtain the M2 and the drying cycle was repeated until to obtain M3. The sorption and solubility values (µg/mm<sup>3</sup>) were calculated using the formulas: Sorption = (M2-M3)/V and Solubility = (M1-M3)/V. Data were submitted to Shapiro-Wilk and ANOVA tests (α = 5%).

**Results:** It was not observed significant difference for both sorption (S-0.633±0.0035; S1-0.0670±0.0086; S2-0.0580±0.0030) and solubility (S-0.0611±0.0036; S1-0.0645±0.0063; S2-0.0578±0.0042).

**Conclusion:** It was concluded that the CHX addition did not interfere in the sorption and solubility properties of the sealant, representing an alternative to help control the development of dental biofilm and caries progression.

#### EFFECT OF VIOLET LED ON THE INTRAPULPAL CONCENTRATION OF HYDROGEN PEROXIDE AFTER IN-OFFICE BLEACHING

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**Aim:** This study analyzed the intrachamber penetration of hydrogen peroxide after in-office bleaching using 35% hydrogen peroxide (HP) and 37% carbamide peroxide (CP) combined or not with a novel violet LED light for bleaching.

**Method:** Enamel-dentin thickness of forty bovine incisors crowns were standardized on the buccal surface. An area which received the bleaching application was determined. Specimens were randomly assigned to groups, according to bleaching protocols (n=10): LED/HP, HP, LED/CP and CP. LED protocol consisted of 20 1-min light irradiation with 30-s consecutive intervals. For groups combining light and peroxides, the gel application and light irradiation were concomitant. Three sessions at 1-week intervals were performed for all groups. At the last session, an 2M acetate buffer was dispensed in the pulp chamber during bleaching. This buffer was transferred to a test-tube, and subsequently mixed with leucocristal violet (0.5 mg/µL) and horseradish peroxidase (1 mg/mL). Spectrophotometry was conducted to determine the hydrogen peroxide concentration (µg/mL) of these solutions at 650 nm. Two-way ANOVA and Tukey's test were performed (i=5%).

**Results:** Regardless of the light-activation, HP-treated groups showed greater intrachamber concentration of hydrogen peroxide than CP's (p=0.025). No increase in this concentration was detected when HP or CP were light-activated with LED (p=0.580).

**Conclusion:** Violet LED light application did not enhance the penetration of hydrogen peroxide into the pulp chamber provoked by high-concentrated hydrogen or carbamide peroxide on in-office bleaching.

#### EFFECT OF WHITENING TOOTHPASTES ON COLOR STABILITY AND ROUGHNESS SURFACE OF BULK FILL RESINS

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**Aim:** Evaluate the effect of whitening toothpastes on color stability and roughness surface of bulk fill resins (Opus Bulk Fill APS-FGM e Filtek Bulk Fill-3M ESPE) after mechanical brushing.

**Method:** One-hundred and twenty cylindrical- shaped samples (5mm x 2mm) were made and polished with three diferentes granulation discs (Sof-Lex). After initial color evaluation (Easyshade Advance, Vita, Alemanha) and surface roughness (HMV-2000 Shimadzu, Tóquio, Japão) measurements, the samples were stored in soluble coffee for 6 days at 37°C±2. Then, the samples were storage in artificial saliva for 15 days for color stabilization before a new color evaluation. After that, the samples (n=10) were assigned according to the whitening toothpaste used: Colgate Luminous White (CLW), Sensodyne True White (STW) and Colgate Total 12 (CT12) and submitted to the MSet brushing simulation machine (10,000 cycles), with a frequency of 4Hz, under a load of 200g and a temperature of 37°C±0.5. Finally, a final color change and surface roughness measurements were performed. The quantitative data was submitted to Analysis of Variance (ANOVA) and Bartlett's test for equal variances (Statistical SAS).

**Results:** After the brushing there was a significant increase of color, except for Filtek Bulk Fill brushed with STW. Also, there was a significant increase in the surface roughness of all groups after mechanical brushing with the whitening toothpastes (p<0.05).

**Conclusion:** It can be concluded that the color change and surface roughness of bulk fill resins composite after toothbrushing are subject to change upon exposure to different whitening toothpastes and their effect is material dependent.

#### EFFECTIVENESS AND CYTOTOXICITY OF EXPERIMENTAL BLEACHING AGENTES DOPPED WITH BIOGLASS NANOPARTICLES

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**Aim:** This study evaluated the effectiveness and cytotoxicity of experimental bleaching agents containing bioglass nanoparticles.

**Method:** Forty bovine enamel blocks were bleached with different concentrations of bioglass nanoparticles combined with 35% hydrogen peroxide (n=10): Control - 0% of bioglass; 5% of bioglass; 10% of bioglass and 15% of bioglass. The experimental agents were applied three times on enamel surface for 15 minutes. After bleaching, samples were stored in distilled water (37°C) and color alteration (E) based on the CIE lab parameters (L\*, a\*, b\*) was measured before (baseline), 24 h and 7, 14, 21 days after bleaching with a digital spectrophotometer. Cytotoxicity was determined by MTT assay test. Data were statistically analyzed by Multivariate analysis (MANOVA) with significance level set at 5%.

**Results:** All the groups promoted color alteration compared to baseline (p<0.05), regardless the concentration of the bioglass. The experimental bleaching agent containing 5% of bioglass promoted greater cell viability among the experimental agents (p<0.05).

**Conclusion:** The experimental bleaching agents were able to promote color alteration, regardless the concentration of the bioglass. Yet, the experimental 35% hydrogen peroxide containing 5% of bioglass promoted greater cell viability among the experimental agents.

#### EFFECTIVENESS OF POLYACRYLIC ACID AS CONDITIONING AGENT ON THE BOND STRENGTH OF SELF-ADHESIVE RESIN CEMENTS TO ENAMEL

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**Aim:** This in vitro study evaluated the effectiveness of polyacrylic acid as an acid etchant similar to phosphoric acid and its effect on the microtensile bond strength of self-adhesive resin cement to enamel.

**Method:** Ninety Te-Econom Plus resin blocks (11 x 4 mm) were cemented onto bovine enamel and distributed into 10 groups according to the surface treatments (no surface treatment; etching with 37% phosphoric acid; etching with 20% polyacrylic acid; etching with 37% phosphoric acid + dental adhesive, and etching with 20% polyacrylic acid + dental adhesive) and the self-adhesive resin cements used (RelyX U200 and MaxCem Elite) (n = 9). After bonding, the specimens were sectioned into beams, subjected to thermocycling (5760 cycles, 50°C and 55°C) and microtensile tensile bonding test (n = 6). Images of representative specimens were obtained using a scanning electron microscope. Enamel penetration evaluation of different surface treatments was analyzed by confocal laser scanning microscopy (n = 3). Data on bond strength were subjected to 2-way ANOVA and Tukey least significant difference test (α = .05).

**Results:** Both 37% phosphoric acid and 20% polyacrylic acid yielded the same microtensile bond strength between self-adhesive resin cement and enamel, regardless of the application of dental adhesives (P > .05). MaxCem Elite showed higher bond strength values than RelyX U200 just for the 20% polyacrylic acid group (P = .001).

**Conclusion:** Previous conditioning of dental enamel influenced the bond strength of self-adhesive resin cement to enamel, and 20% polyacrylic acid showed similar effectiveness to 37% phosphoric acid.

#### EFFECTS OF CA(OH)2 BASED INTRACANAL MEDICATION ON

INFLAMMATORY/MICROBIAL CONTENTS IN TEETH WITH POST-TREATMENT LESION  
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**Aim:** This study aimed to the investigate the effectiveness of calcium hydroxide-based intracanal medication on the levels of pro-inflammatory cytokines (PICs), matrix metalloproteinases (MMPs) and bacteria in root canals and periradicular of teeth with post-treatment periapical lesion.

**Method:** Twenty teeth with post-treatment periapical lesion were randomly separated into two groups according to the chemical substances used. Group 1 (n=10) - 2% Chlorhexidine gel and group 2 (n=10) - 6% sodium hypochlorite. Root canal sample were taken by using paper point before chemomechanical preparation (S1) and after thirty days of intracanal medication (S2). Microbial reduction was measured by means of colony-forming unit count (CFU/mL), with PICs and MMPs (pg/mL) being calculated by using enzyme-linked immunosorbent assay (ELISA).

**Results:** Culturable bacteria (101.2 ± 79.2), PICs (IL-1β 1.2 ± 0.4 and TNF-α 8.8 ± 4.7), MMP-2 (803.7 ± 96.4), MMP-3 (453.9 ± 229.3), MMP-8 (245.9 ± 122.4), MMP-9 (129.4 ± 29.6), and MMP-13 (70.8 ± 12.8) were present in all S1 samples. After thirty days of intracanal medication (S2), a 99.5% microbial decrease was observed, together with a significant reduction of PICs in all groups. Overall, it was observed a decrease in the levels of MMPs (S2), except MMP-13, which was found in increased levels after intracanal medication (P < .05), independently of the groups.

**Conclusion:** Both auxiliary chemical substances presented similar effects when calcium hydroxide was used as intracanal medication. Ca(OH)2 intracanal medications have a positive effect on the microbial reduction by decreasing the levels of PICs and MMPs.

#### EFFECTS OF INFORMATIVE VIDEO AND RECORD PROTOCOLS ON SELF-CARE BEHAVIORS OF PATIENTS SUBMITTED TO EXODONTIA

## All abstracts appear as submitted by the authors without editing

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**Aim:** The objective of the study was to identify the relationship between forms of instructions given to patients submitted to third molar extraction and self-care behaviors during the post-surgical recovery.

**Method:** Two studies were carried out with participants aged between 14 and 18 years, allocated in control and experimental groups. In both studies, participants of experimental groups were exposed to a video with information about the actions that should be performed in the postoperative period. The following steps were carried out: presentation of the demonstrative video to the experimental groups, participants of both groups answered a questionnaire about the surgery and about instruction comprehension and soon after were given a self-observation protocol to fill out during recovery. After suture removal participants were interviewed with a script related to the postoperative recovery period. In the first study the self-observation protocol was a free recording of self-care behaviors emitted. In the second study, free recording was followed by table to fill in on bleeding, pain and swelling during the recovery week.

**Results:** The results showed, in both studies, the higher number of self-care behaviors by participants in the experimental groups. In the second study it was observed that the instructions contained in the video and not those that the dentists mentioned had greater adhesion by the experimental group.

**Conclusion:** In summary, the results showed that the use of video demonstration can help in the self-care processes of recovering dental patients.

#### EFFICACY OF AMINOCHALCONE IN THE ERADICATION OF DUAL BIOFILM OF ENTEROCOCCUS FAECALIS AND CANDIDA ALBICANS AND TOXICITY

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**Aim:** The failures of endodontic treatments are associated, in part, to the presence of a resistant microbiota, with *Enterococcus faecalis* being the most isolated and the yeast *Candida albicans* the main fungus found. The objective of this study was to prospect 30 chalcones with modifications in their structures to determine the MIC and CFM / CBM, as well as to verify the anti-biofilm activity of the best compound, as well as to use the *G. mellonella* model to study the toxicity of the molecule.

**Method:** Aminochalcones were synthesized and diluted in DMSO to perform the experiments of the MIC and CFM and from the results of the MIC were chosen the molecule I38 for biofilm studies. The effect of I38 on the biofilm of *E. faecalis* and *C. albicans* were evaluated by the quantification of CFUs.

**Results:** I38 presented high antimicrobial activity, with MIC/CFM of 15.6/15.6 µg /mL and for *E. faecalis* 7.8/15.6 µg /mL. The use of 1x MIC in the inhibition of *C. albicans* dual biofilm formation reduced 4 log10 when compared to control, while the use of the 10x MIC concentration inhibited 100% of the yeasts. In the mature dual biofilm, *C. albicans* presented a reduction of 2.5 and 4.5 log10 in the treatment of 1x and 10x respectively. In inhibition of *E. faecalis* biofilm, the use of 1x and 10x MIC was able to reduce 2 and 7 log10 respectively. In the mature dual biofilm the reduction was from 1 log10 to 1xMIC and 5 log10 to 10xMIC.

**Conclusion:** The I38 toxicity test on *G. mellonella* showed low toxicity at the concentrations tested. Aminochalcone has activity against the pathogens studied with potential to be used as an intra-canal drug in future studies.

#### EFFICACY OF PASSIVE ULTRASONIC IRRIGATION AND RECIPROCATING ACTIVATION ON THE REDUCTION OF MICROBIOLOGICAL CONTENT

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**Aim:** The conventional needle irrigation used during endodontic therapy cannot completely remove the infectious endodontic content. Therefore, auxiliary procedures during the chemo-mechanical preparation (CMP) should be considered. The present study aimed to evaluate the efficacy of passive ultrasonic irrigation and the reciprocal activation of 6% sodium hypochlorite (NaOCl) in the composition and reduction of the microbial load in 24 cases of primary endodontic infection.

**Method:** Samples were collected from before and after CMP: control group without activation (WA, n = 8), reciprocating activation group using the EasyClean tip (EC, n = 8) and the group with ultrasonic activation using the Irrisonic insert (US, n = 8).

**Results:** Through the checkerboard technique, it was observed that before CMP, bacteria were found in 100% of the microbiological samples, in concentrations between <105 and 106. The most frequently identified microorganisms were *Prevotella nigrescens* and *Enterococcus hirae*. After CMP, different species were not detected in all groups. The highest reduction in bacterial concentration occurred in descending order in the US group, followed by EC and WA.

**Conclusion:** It was concluded that the passive ultrasonic irrigation showed a greater reduction of the microbial load of the infected root canals. (Supported by FAPESP 2015/23479-5; CNPq 308162/2014-5, 132155/2017-6 & CAPES).

#### EROSIVE, ABRASIVE AND EROSIVE-ABRASIVE CHALLENGES: EFFECT ON ROUGHNESS AND SURFACE LOSS OF GLAZE LAYER

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**Aim:** To evaluate the effect of different challenges on surface roughness (SR) and surface loss

(SL) of CAD/CAM ceramic blocks after glaze application.

**Method:** Specimens (6 x 7 x 1.3 mm) of LuxaCam Zircon HT Plus, DMG - LZ; and IPS e.max CAD, Ivoclar Vivadent - IPS were glazed (Glaze Plus, Zirkonzahn, for LZ; and IPS Ivocolor Glaze Paste, Ivoclar Vivadent, for IPS), then submitted to surface challenges (erosive - EC, abrasive - AC and erosive-abrasive - EAC), and evaluated by optical profilometry (n=10). The EC consisted in 5 ml of 0.06M hydrochloric acid solution (HCl), pH 1.2, for 30 hours at 37°C. The AC consisted in 400.000 brush strokes with a 200 grams load, using a toothbrushing machine. The AC was a combination of the two previously described challenges in the same specimens. Data were submitted to analysis of variance (ANOVA) and Tukey tests (p<0.05).

**Results:** For SR, ceramic material (p=0.00), surface challenge (p=0.00) and the interaction between factors (p=0.01) were considered. When comparing ceramic materials, LZ (0.84) presented higher SR than IPS (0.56). Regarding surface challenge, EC produced significantly lower SR (0.52) than AC (0.81) and EAC (0.77). For both ceramic materials, a higher roughness was detected in AC and EAC in comparison to EC. For SL, ceramic material (p=0.00) and surface challenge (p=0.00) were considered. LZ (0.16) presented higher SL than IPS (0.11). AC and EAC produced a higher SL than EC.

**Conclusion:** The AC and EAC were more aggressive than EC for both materials. The glaze layer of LZ was more susceptible than IPS.

#### ESTIMATING ANCESTRALITY AND SEX BY MEASUREMENTS IN SIDE AND BASAL STANDARDS IN HUMAN SKULLS

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**Aim:** The present study aimed to estimate the ancestry and sex by means of measurements performed on 195 human skulls in lateral and basal norm of the Biobank of FOP / UNICAMP

**Method:** The study was approved by CEP / FOP / UNICAMP CAAE38522714.6.0000.5418. The following measures were performed: Point A: Baseline to the right zygomaxillary; Point B: Basis to oral point; Point C: Lambda to oral point; Point D: Basal to the left zygomaxillary; Point E: Nasal height; Point F: Maximum piriform aperture. The measurements were performed with the aid of precision digital caliper (Stainless® - hardened 150 mm, Mauá, São Paulo, Brazil).

**Results:** 195 human skulls obtained from individuals (80 women and 115 men) of different ancestry were measured and analyzed, of which 115 were white, 30 were melanodermal, 49 were ferocious. It was found by Student's t-test that all measures studied are dimorphic. By the analysis of the Chi-square test, it was found that there was no association between ancestry and gender (p = 0.342), and it was not relevant for the logistic model in estimating gender. It has been shown that the measures studied do not allow ancestry estimation, but only sex, since the sample of skulls studied was considered restrictive. Nine models of multiple logistic regression (Stepwise-Forward selection) were tested and a logistic regression model was obtained, namely: Carvalho Sex = Logito= -25,234 + 0,145.A + 0,294.E.

**Conclusion:** The final model demonstrated by the Hosmer and Lemeshow test accuracy of 74%. This may be used for the estimation of sex, individually or in association with other skull models of unidentified individuals.

#### ESTIMATION OF SEX IN BRAZILIAN SAMPLE BY VISCEROCRANIAM

VIVIANE ULBRICHT; RENATO TAQUEO PLACERES ISHIGAME; LUCAS DEL VIGNA; STÉFANY DE LIMA GOMES; DORA ZULEMA ROMERO DIAS; JOÃO SARMENTO PEREIRA NETO; EDUARDO DARUGE JÚNIOR; LUIZ FRANCESQUINI JUNIOR  
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**Aim:** The present study sought to verify if craniometric measurements in the viscerocranium would be dimorphic and a logistic regression model for the determination of sex in a Brazilian sample, after approval by CEP / FOP / UNICAMP, 138/2014.

**Method:** With precision digital caliper we measured 167 skulls from the Osteological and Tomographic Biobank Prof. Eduardo Daruge of Fop / Unicamp, being 100 male and 67 female, without growth anomalies in the age range of 22 to 85 years. In ancestry, the sample consisted of 58.75% white, 27.81% brown, 13.12% black, and (0.32%) Asian. The measurements were: Frontozygomatic right - left frontozygomatic (minimal facial width); Right Frontozygomatic - Right Zygium; Left Frontozygomatic - Left Zygium; Right zygos - Nasoespinal; Left zine - Nasospinal; Násio - Nasoespinal (nasal height); Maximum peripheral width (nasal width). The inter- and intra-operator calibration performed through the intraclass correlation test resulted in a value of 0.97 considered excellent.

**Results:** For the data analysis, the Kolmogorov-Smirnov & Levene test and unpaired t-test were performed. For logistic regression, stepwise-Wald was performed. The Hosmer & Lemeshow and Nagelkerke test were also used. The software used was GRAPHPAD PRISM 7.0. The Kolmogorov-Smirnov and Levene tests showed that the data presented, respectively, normality. All measurements were sexually dimorphic, with the most significant being Nasio - Nasoespinal and Zigio-Nasoespinal variables, resulting in 88.4% of sensitivity, 71.2% of specificity and 81.3% of accuracy.

**Conclusion:** It was possible to perform a logistic regression model Peixoto Sex = [logito / Sex = - 24.5 + (0.20 × Násio - Nasoespinal) + (0.18 × Right zygium - Nasoespinal)]. It was concluded that the quantitative method developed for determination of sex by facial linear measurements resulted in 81.4% of correctness if it proved to be effective.

#### EVALUATION OF ANTIMICROBIAL PROPERTIES OF HIGH PLASTICITY REPAIR CEMENTS

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## All abstracts appear as submitted by the authors without editing

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**Aim:** Novel endodontic repair cements were introduced with improvements in handling and flow. The objective was to evaluate the antimicrobial property of MTA HP, MTA Flow and Biodentine.

**Method:** In addition, a novel high-plasticity experimental cement (powder - 80% tricalcium silicate, 20% bismuth oxide, 5% zinc oxide and liquid - 95% distilled water and 5% water). Also, the addition of 5% ZnO to the original MTA Flow formulation was tested. Two species of microorganisms (Enterococcus faecalis and Porphyromonas gingivalis) were used to test the antimicrobial activity of cements. The radial diffusion in agar was the method used to read the halos of inhibition of microbial growth in the culture medium. Spatulated cements were inserted into sterile discs, 3 discs on each plate containing Brain Heart Infusion [BHI] medium + 5% defibred sheep blood for E. faecalis; and Fastidious Anaerobe Agar [FAA] + 5% sheep blood for P. gingivalis. Positive control was performed with chlorhexidine gel 2% and negative control (bacterial growth). Inhibition halos were read at 24, 48 hours and 7 days by means of calibrated photographs for digital measurement.

**Results:** The inhibition halo was not observed for any of the cements tested, only in the positive control, with a mean of 19.1 mm for BHI + E. faecalis and 42.2 mm for FAA + P. gingivalis, with a significant difference (P <0.01) between the different media.

**Conclusion:** It was possible to conclude that the high plasticity repair cements tested did not have antimicrobial activity under both bacterial species, by means of evaluation of the inhibition halo.

#### EVALUATION OF BIOACTIVITY OF HIGH PLASTICITY CALCIUM SILICATE-BASED CEMENTS

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**Aim:** The aim of this study was to evaluate of bioactivity and calculate the proportion (Ca/P) on the surface of high plasticity of calcium silicate-based cements (Biodentine, MTA Flow, MTA Flow + 5% ZnO, MTA HP) and an experimental cement composed of 80% tricalcium and dicalcium silicate, 20% bismuth oxide, 5% zinc oxide and in the liquid, 70% distilled water and 30% water soluble polymer.

**Method:** Samples of cements were prepared using molds with 8 ± 1mm diameter and 1,6 ± 0,1mm thickness. The cements, after setting time, were immersed in individual flasks containing 20mL of HBSS for 1 and 28 days. The samples were analyzed using Energy-dispersive X-ray spectroscopy (EDX) integrated in scanning electron microscopy (SEM). The analysis of EDX were used to calculate the proportion (Ca/P).

**Results:** After 1 day of immersion in HBSS, the cements showed high peaks of calcium ions (Ca), but only in the Biodentine cement it was possible to detect the presence of the phosphorus ion (P) on the surface of the cement. After 28 days of immersion, a high proportion of Ca ions was detected for all cements evaluated, the ratio Ca/P were higher for MTA HP (33.62), MTA Flow (13.54) and MTA Flow + 5% ZnO (12.04). Biodentine and Experimental cements, showed the lower values (4.28 and 6.76, respectively)

**Conclusion:** After 1 day, only Biodentine presented deposition of P on its surface. After 28 days, higher Ca/P ratios were found for MTA HP, MTA Flow and MTA Flow + 5% ZnO.

#### EVALUATION OF DENTAL CONDITIONS AND BEHAVIORS IN ORAL HEALTH BETWEEN PORTUGUESE SCHOOLS

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**Aim:** To evaluate dental conditions and behavior in oral health among Portuguese schoolchildren.

**Method:** Cross-sectional study. Sample of 694 students in two Portuguese districts. After the questionnaire was filled out by the participants, a clinical examination was carried out. Based on the data obtained, scale was developed for classification of oral health behavior. A descriptive analysis of the variables was performed using the  $\chi^2$ , Mann-Whitney and Kruskal-Wallis tests ( $\alpha = 0.05$ )

**Results:** DMTF of  $2.91 \pm 2.9$  and dmtf of  $1.10 \pm 1.4$  was obtained. Of the total sample, 73% consumed sugar daily, 54.7% drank bottled water, 50.1% considered oral health good, 70.8% did not report pain in the last 12 months, but noticed gingival bleeding (51.5%). Most schoolchildren (79.4%) brushed their teeth and 60% did not use dental floss. They consulted the dentist in the last 12 months 96.4%, being 46.4% due to prevention. The high dmtf index was associated with low maternal, male and home (p <0.05) habilitation. Schoolchildren who brush their teeth daily presented good perception about oral health (p <0.001). With the use of the proposed scale, only 8.7% of the students presented good behavior in relation to oral health

**Conclusion:** Portuguese schoolchildren presented a low DMTF and dmtf index. The dmtf index was associated with sociodemographic factors. Oral hygiene habits were associated with self-perception of oral health. It is suggested that oral health promotion and prevention programs be improved in schools in order to reduce the risks of oral disease prevalence.

#### EVALUATION OF DENTAL ENAMEL PHYSICAL-CHEMICAL PROPERTIES AFTER BLEACHING TREATMENT WITH ARTIFICIALLY AGED GELS

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LEITE; FLÁVIO HENRIQUE BAGGIO AGUIAR; DÉBORA ALVES NUNES LEITE LIMA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To evaluate dental enamel physical-chemical properties after bleaching treatment with artificially aged (AA) gels of at-home agents

**Method:** A total of 360 blocks of bovine teeth. For color and roughness (Ra) analyses 180 blocks were used and the remaining for microhardness test (KHN) and quantification of calcium (Ca), which were divided according to the bleaching treatment(n=12): Control; CP 10%(Whiteness Perfect); CP 10%(Pola night); HP 7.5%(Poladay); HP 7.5%(White Class Calcium). Analyses were performed with and without storage times(1 and 3 months).Ca concentrations (mg/L) were measured on the 1st, 3rd, and 7th days of treatment at all times.Color analyses ( $\Delta L^*$ ,  $\Delta a^*$ ,  $\Delta b^*$  and  $\Delta E$ ), Ra, and KHN were performed before and after bleaching treatments. Data of KHN, Ra and Ca quantification were analyzed through mixed models for repeated measurements and Tukey-Kramer test.Color analysis were submitted to the Kruskal Wallis and Dunn tests.Significance level of 5% was considered for all analyzes

**Results:** Groups submitted to the AA presented lower bleaching effectiveness when compared to the control.Lower KHN values and higher Ra values were found after bleaching treatment in all groups, differing statistically from the control (p<0.05). Higher amounts of Ca mineral were found on the 1st day of evaluation in the group of gels submitted to AA for 3 months, regardless of the bleaching agent used (p<0.05)

**Conclusion:** Incorrectly stored bleaching gel can induce negative effects on dental tissues. Temperature and humidity interfere on bleaching gels chemical stability. It is recommended to store bleaching gels at a temperature between 5 °C and 25 °C

#### EVALUATION OF HOUSEHOLD KNOWLEDGE ABOUT ORAL HYGIENE AND HOME USE OF FLUORIDE IN CHILDREN OF A COLLEGE IN ESPÍRITO SANTO

IVE BARTELI CAMATTA; CAROLINA STEINER OLIVEIRA ALARCON

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This research evaluated the level of knowledge of parents and/or guardians of children attending the Dental Clinic of Faesa College (Vitória, ES), regarding information about dental hygiene and toothpaste use.

**Method:** We analyzed 46 questionnaires, containing 12 objective questions.

**Results:** The descriptive statistical analysis showed that 78.3% of the children used fluoridated dentifrice, 93.5% of the parents did not know the fluoride concentration present in the children's toothpaste, did not know when to introduce the fluoridated dentifrice, 60.9% of the parents did not know what could occur from the ingestion of the fluoridated dentifrice and 71.4% answered that fluoride function was to prevent caries. For 50.0% of the families, the introduction of fluoride was only starting from the second year of life and only 4.4% knew that the caries lesions are initiated by the presence of a white spot.

**Conclusion:** Parents and/or caregivers have knowledge about the function of fluoride, the amount of toothpaste that should be used in each age group; however, they are unaware of fluoride concentration present in the toothpaste, do not know the correct time to introduce the fluoridated dentifrice or the risks of developing dental fluorosis.

#### EVALUATION OF ORAL HEALTH LITERACY LEVELS AMONG USERS OF PRIMARY HEALTH CARE

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**Aim:** Health Literacy (HL) indicates the extent to which individuals are able to obtain, process, and understand basic health information and services necessary to make appropriate health decisions. However, there are few national studies evaluating the levels of oral health literacy (OHL) in the population that uses public health services. The aim of this study was to evaluate the levels of OHL among users of primary health care in Piracicaba, São Paulo.

**Method:** We randomly selected adult 413 users of 10 Primary Health Units (PHU) of the city of Piracicaba, São Paulo, 5 of them with Dental Health Teams (DHT) and 5 without DHT. OHL was measured through HeLD-14 instrument. The t-test for unpaired data was applied in order to compare the level of OHL between the 2 groups.

**Results:** A significance level of 5% was considered and the analysis was performed in the Bioestat 5.3 program. It was observed no statistically significant difference in the overall mean of the HeLD-14 instrument between adults using PHU with or without DHT (p=0.3163).One hypothesis for this is that nearly half of the sample from both groups sought the particular dentist for their treatment.

**Conclusion:** In conclusion, the presence or not of DHT in PHU did not influence OHL levels of the evaluated sample.

#### EVALUATION OF PASSIVE ULTRASONIC IRRIGATION ON DEBRIS EXTRUSION ASSOCIATED WITH DIFFERENT ENDODONTIC IRRIGANTS

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**Aim:** The purpose of this study was to evaluate the amount of extruded debris after chemo-mechanical preparation (CMP) associated with passive ultrasonic irrigation (PUI) using 6% sodium hypochlorite (NaOCl), 2% chlorhexidine gel + saline solution (2% CHXg + SS), 2% chlorhexidine solution (2% CHXs) and SS alone.

**Method:** Sixty mandibular premolars with single straight root canals were randomly assigned into 4 groups (n = 15) according to the irrigant used: G1 (PUI + NaOCl), G2 (PUI + CHXg + SS), G3 (PUI + CHXs) and G4 (PUI + SS). CMP was performed with Reciproc R25 files (25/.08) and the debris extruded from each tooth were collected in pre-weighted Eppendorf tubes and dried in oven at 68°C for 5 days. The average weight of debris was assessed by

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using an analytical microbalance. ANOVA and post-hoc Tukey's test were used for statistical analysis ( $\alpha = 0.05$ ).

**Results:** Debris extrusion was observed in all groups, irrespective of the irrigant used. 2% CHXg + SS was associated with lower debris extrusion compared to the other root canal irrigants ( $p < 0.05$ ). No significant differences were observed between 6% NaOCl, 2% CHXs and SS.

**Conclusion:** In conclusion, PUI did not completely prevent extrusion of debris. PUI performed with 2% CHXg + SS significantly minimized debris extrusion compared to 6% NaOCl, CHXs and SS. Supported by: FAPESP 2015/23479-5, 2017/25242-8, CNPq 308162/2014-5 and CAPES.

#### EVALUATION OF PHYSICAL PROPERTIES AFTER USE OF EXPERIMENTAL BLEACHING GELS CONTAINING BIOGLASS NANOPARTICLES

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**Aim:** This study aimed to evaluate physical properties after the use of experimental bleaching gels with addition of nanometric bioglass (NB).

**Method:** An in vitro study was conducted which 40 enamel blocks and these were submitted to the following treatment ( $n = 10$ ): (C) Control group: 35% hydrogen peroxide (HP) and 0% NB; (5% NB) 35% HP with 5% NB, (10% NB) 35% HP with 10% NB and (15% NB) 35% HP with 15% NB. The experimental bleaching gels were applied over the entire enamel surface in a 1-mm thick layer for 15 minutes, followed by washing with purified water. This procedure was performed three times and the samples were evaluated for enamel surface microhardness recovery (% SMH) and roughness before application of the bleaching gels (baseline) and after 24 hours, 7, 14 and 21 days elapsed from the bleaching treatment. Among the tests, the samples were stored in buffered solution (pH 7). Data were submitted to multivariate analysis, MANOVA and  $\alpha = 0.05$ .

**Results:** Surface roughness increased after bleaching in relation to baseline values ( $p < 0.05$ ), regardless the concentration of the NB. After 21 days, the %SMH of enamel treated with 5% NB was higher among groups ( $p < 0.05$ ).

**Conclusion:** The experimental bleaching agent containing 5% of NB exhibited surface microhardness recovery 21 days elapsed from bleaching treatment, however, all bleaching agents increased enamel surface roughness.

#### EVALUATION OF SALIVARY PARAMETERS AND CARIES DEVELOPMENT AFTER ORTHODONTIC TREATMENT - A LONGITUDINAL STUDY

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**Aim:** The aim of this study was to evaluate the effect of the orthodontic appliances removal (OAR) on salivary properties considering caries development.

**Method:** Twenty two individuals (mean age of  $14.8 \pm 2.9$  years) were assessed regarding caries, presence of visible biofilm, sugar exposure, salivary flow rate (SFR), buffering capacity, pH, carbonic anhydrase VI (CA VI) and amylase activity, at baseline, 1, 5 and 13 weeks after orthodontic appliances removal. Caries index was determined using the Nyvad criteria. CA VI and amylase activities were performed using the zymography and ELISA, respectively.

**Results:** The buffering capacity and SFR remained unchanged during all periods of the study ( $p > 0.05$ ). There was an increase in saliva pH after 5 and 13 weeks of OAR ( $p < 0.01$ ). The presence of visible biofilm decreased after 13 weeks of OAR ( $p < 0.05$ ). No change was found with respect to CA VI and amylase activities during the follow-up periods ( $p > 0.05$ ). Exposure to liquid sugar decreased after 13 weeks of OAR ( $p < 0.05$ ). The number of non-cavitated inactive carious lesions increased after 13 weeks of orthodontic appliances removal; consequently, there was a decrease in the number of non-cavitated active carious lesions in the same follow-up period ( $p < 0.05$ ).

**Conclusion:** This study demonstrated that there was a change in the activity of caries lesions after orthodontic appliances removal, reasserting the influence of the fixed orthodontic treatment on the caries dynamic process.

#### EVALUATION OF SYNTHETIC BONE GRAFT (BIOGRAN®) IN ASSOCIATION WITH PTH 1-34 IN THE ALVEOLAR REPAIR OF ORCHIECTOMIZED RATS

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**Aim:** The present study aims to evaluate the effect of synthetic bone graft (BioGran®) in association with PTH 1-34, in the alveolar repair of orchietomized rats.

**Method:** Twenty-four rats were divided into three groups: ORQ-CLOT (Alveolus without biomaterial); ORQ-BG (Alveolus with BioGran®); ORQ-BG + PTH (Alveolus with BioGran® + topical PTH). The alveolar defect was filled with BioGran® or BioGran® + PTH ( $4.4 \mu\text{g}$  per  $157\text{mm}^3$ , BioGran®) sonicated during 15 minutes. Euthanasia occurred 60 days after extraction and filling of the alveolar defect. Three-dimensional microtomographic analysis evaluated the parameters of trabecular thickness (Tb.Th), trabecular number (Tb.N) and trabecular separation (Tb.Sp) and percentage of bone volume (BV/TV). The data were submitted to statistical analysis, considering a level of significance at 5%.

**Results:** For the parameters of BV/TV, Tb.Th, Tb.N, the BG + PTH group presented the highest values in relation to the other groups. For the Tb.N and Tb.Sp. CLOT group obtained the highest result, not having a difference to the other groups, for Tb.Th there was a difference between the groups ( $p < 0.05$ ), for the BV/TV. ORQ-BG group had the lowest result, and there was no difference between the other groups.

**Conclusion:** In conclusion, BioGran® with or without topical PTH promotes the filling and preservation of the alveolar volume after extraction in orchietomized rats.

#### EVALUATION OF THE COMMUNICATION CHARACTERISTICS AMONG UNDERGRADUATES OF PIRACICABA DENTAL SCHOOL AND THEIR PATIENTS

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**Aim:** The objective of this study was to evaluate the communication techniques used by undergraduate dental students of Piracicaba Dental School with their patients.

**Method:** The students were asked to respond through an internet survey to a sociodemographic questionnaire as well as a classification scale of their communication with their patients using the Student Communication Assessment Instrument. In this instrument, the student should self-assess their behavior with the patient as poor, reasonable, good, very good, or excellent with regard to being friendly, eye contact, treating with respect, concerns, provide important information about the consultation, help deal with anxiety and fear of treatment and others.

**Results:** To date, 30 students from the fifth year, 25 from the fourth and 20 from the third, totaling 75 students have been analyzed. In terms of self-evaluation of students' communication with patients, it was observed in general terms that the students of the third year judged their communication excellent while those of the fourth and fifth defined as very good. At individual level, the most negative self-perceived communicative points cited by the students were in relation to friendly, asking patients' goals and expectations about their oral health, explaining the time to complete the consultation of the day and explain what would happen before each procedure.

**Conclusion:** It is concluded that the majority of the students presented a positive self-perception about their qualities of communication with the patients.

#### EVALUATION OF THE DIFFICULTIES OF THE CAREGIVERS IN RELATION TO ORAL HEALTH HYGIENE OF THEIR CHILDREN WITH SPECIAL NEEDS

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**Aim:** The objective of this study was to understand the difficulties and barriers of the caregivers for the oral hygiene of their children with special needs through a qualitative approach. A random sample of 30 caregivers of individuals with special needs was invited to participate in this study at the APAE institution of São Pedro, APAE of Piracicaba and at the Piracicaba Rehabilitation Center.

**Method:** Caregivers participated in an interview in which was asked "What is the greatest difficulty in doing the child's oral hygiene?" The interviews were recorded and analyzed through the quantiquitative methodology of the Collective Subject Discourse.

**Results:** It was found that 53% answered that their child gets angry, does not open the mouth and bites; 37% answered that their children present problems with the toothpaste; 30% answered that the children does not let the caregiver help them with toothbrush; 27% answered that there are problems with flossing and 20% answered that they guns bleed and they do not toothbrush properly

**Conclusion:** It is concluded that the oral hygiene of individuals with special needs is a complex issue and requires more attention of the dentist in order to promote the best oral health care for these individuals.

#### EVALUATION OF THE ELASTIC MODULUS IN DIFFERENT CRYSTALLINE FRACTIONS OF THE LAMAV CAD LITHIUM DISSILICATE

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**Aim:** Thus, the aim of this study was to evaluate the Elastic modulus (E) of a lithium disilicate developed in the Laboratory of Vitreous Materials (LaMaV) with different crystalline fractions (CF).

**Method:** A total of 18 bar-shape specimens ( $3 \times 4 \times 20$  mm) were made. The LaMaV CAD specimens were submitted to 4 different times and temperatures of nucleation composing the subgroups ( $n = 3$ ) G1 (1h30 for  $500^\circ\text{C}$ ), G2 (3h for  $500^\circ\text{C}$ ), G3 (6h for  $500^\circ\text{C}$ ), G4 (6h for  $480^\circ\text{C}$ ) and G5 (without nucleation heat treatment). IPS e.max CAD was used as control group (G6,  $n=3$ ), its bars were crystallized according to the manufacturer's recommendations. The quantification of CF was made using the ImageJ software, analyzing the percentages of the crystalline matrix present in the specimens. The E (GPa) was evaluated by the impulse excitation technique (Sonelastic, ATCP) according to ISO 1876.

**Results:** The results of CF were analyzed descriptively, and data for E with Kruskal-Wallis and Dunn post-test ( $\alpha=0.05$ ). The CF (%) was: G1=61.73, G2=60.13, G3=55.51, G4=57.52, G5=0 and G6=59.31. E (GPa) was: G1=94.98, G2=96.18, G3=88.37, G4=98.02, G5=73.79, and G6=105.71. The E differed significantly among groups ( $p < 0.0001$ ), the group that showed the E closest to the control was the group that was heat treated for 6h at  $480^\circ\text{C}$ .

**Conclusion:** It was concluded that the crystalline fraction did not affect the values of the elastic modulus of lithium disilicate and that the condition that was closest to the control group was the group submitted to nucleation heat treatment for 6 hours at  $480^\circ\text{C}$ .

#### EVALUATION OF THE ENERGETIC PORFILE OF PATIENTS WITH ODONTALGIAS

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**Aim:** The aim of this study was to evaluate the energetic levels of patients with toothache before and after a therapeutic intervention (acupuncture or dipyrone analgesic) to relieve this pain.

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**Method:** The data were from a clinical trial, which included 56 volunteers in 4 groups: acupuncture group (GA), placebo-acupuncture group (GPA), dipyrone group (GD) and placebo-dipyrone group (GPD). The selected volunteers presented odontotalgia of pulpar origin with VAS (Visual Analogue Scale) above 4 and absence of medication for this pain in the last 12 hours. Before and after the therapeutic intervention of each group, the volunteers had their energy level measured by the Ryodoraku method. The data obtained were statistically analyzed in the BioStat program, using paired t-tests and ANOVA, adopting  $p \leq 0.05$ .

**Results:** The means and standard energy deviations before and after the interventions per group were GA:  $10.714 \pm 4.268$  and  $9.643 \pm 4.814$  ( $p < 0.119$ ); GPA:  $15.643 \pm 7.448$  and  $13.214 \pm 8.135$  ( $p < 0.007$ ); GD:  $12.714 \pm 6.069$  and  $11.071 \pm 5.902$  ( $p < 0.112$ ); GPD:  $11.571 \pm 3.857$  and  $10.500 \pm 5.273$  ( $p < 0.263$ ), respectively. The results showed a reduction in energy after interventions in all study groups, being significant only in GPA.

**Conclusion:** There was a reduction of energy in the sham acupuncture group, which corroborates with data from the literature on possible effects of placebo acupuncture.

## EVALUATION OF THE H3K9AC IMMUNOEXPRESSION IN AMELOBLASTOMA

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Acetylation of lysine 9 in histone 3 (H3K9ac) is a histone modification responsible for chromatin condensation level. Lower H3K9ac is correlated with less gene expression. H3K9ac immunoprecipitation changes were described in many human disease, however this was never reported in ameloblastomas (AME). Mismatch repair system (MMR) is responsible for avoid DNA mutation by wrong nucleotides pairing. The aim of this study was identified the H3K9ac immunohistochemical alterations between developing human tooth (DHT) and AME.

**Method:** After ethical committee approved (CEP/FOP 79140917.9.0000.5418), 10 DHT, and 58 AME (solid variant) were selected. Tissue microarray (TMA) technic was used to make a ameloblastomas TMA block. 3µm histological slices for immunohistochemical reaction (anti-H3K9ac, C5B11, Cell Signaling) were performed. All slides were digitized and quantified (Aperio Technologies, Leica Biosystems), and data values were statistically analyzed by Prism 8 (GraphPad Software, San Diego, California USA).

**Results:** The mean H3K9ac values were 71.79% and 58.39% (DHT and AME, respectively). Significant difference was observed between immunoprecipitation (t test with Welch's correction:  $p = 0.0279$ ). In addition, comparisons among MMR proteins also showed significant reduction of msh3 ( $p = 0.0207$ ) and msh6 ( $p < 0.0001$ ), but not in msh2 ( $p = 0.1126$ ), in AME.

**Conclusion:** Our results suggest that epigenetic changes involving histone modifications may be related to the development of ameloblastoma. H3K9ac reduction might be silencing gene expressions, such as mismatch repair system.

## EVALUATION OF THE H3K9AC IMMUNOEXPRESSION IN LIP CARCINOGENESIS

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**Aim:** The aim of this study was identified the H3K9ac immunohistochemical alterations among lip normal mucosa (LNM), actinic cheilitis (AC), and lip squamous cell carcinoma (LSCC).

**Method:** After ethical committee approved (CEP/FOP 86496618.0.0000.5418), 46 LNM, 42 QA, and 40 LSCC were selected. 5µm histological slices stained in hematoxylin-eosin were performed for WHO and binary system classification for epithelial dysplasia and cancer differentiation, following by 3µm histological slices for immunohistochemical reaction (anti-H3K9ac, C5B11, Cell Signaling). All slides were digitized and quantified (Aperio Technologies, Leica Biosystems), and data values were statistically analyzed by Prism 8 (GraphPad Software, San Diego, California USA).

**Results:** The mean positivity values were 96.41%(LNM), 95.35%(AC), and 98.51%(LSCC). Significant difference was observed among groups (Kruskal-Wallis:  $p=0.0007$ ), mainly between LNM-LSCC, and AC-LSCC (Two-stage Benjamini, Krieger, & Yekutieli:  $p=0.0338$  and  $p=0.003$ , respectively).

**Conclusion:** Our results showed epigenetic alterations involving H3K9ac immunoprecipitation and lip carcinogenesis, suggesting a possible activation of silenced oncogenes and more occurrence of mutations.

## EVALUATION OF THE INFLUENCE OF ARTEFACTS CAUSED BY TITANIUM IN CBCT IMAGES WITH AND WITHOUT METAL ARTEFACT REDUCTION

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**Aim:** The present study aimed to evaluate quantitatively the metal artefact interference caused by titanium in different positions and quantities in the dental arch in images acquired in two CBCT devices on the dental and bone structures with or without Metal Artefact Reduction (MAR) tool.

**Method:** A PMMA phantom with 8 perforations simulating a dental arch, five lower premolars roots and five bone cylinders from a bovine rib to simulate the human bone structure were used in this study. Five titanium cylinders were gradually inserted on the adjacencies and on the opposite side of the roots and bone cylinders. Nine protocols differed according to the distribution and quantity of the metal cylinders: Control (no metal), A - G. The standard

deviation of the grey values around the root thirds, trabecular and cortical bone were quantified on the software ImageJ. The artefact expression between devices was evaluated by Wilcoxon test, the artefact expression on the protocols and MAR action by the Kruskal-Wallis test ( $p < 0.0001$ ) with significance level of 5%.

**Results:** For teeth, Picasso ( $p < 0.0001$ ) showed more artefact expression undependably of MAR activation and metal quantity. For both devices, Protocol F (3 metals on the adjacencies of the analysis region) showed more artefact expression when compared to the other protocols for the regions around the root and bone cylinders.

**Conclusion:** It may be concluded that the artefact expression caused by titanium is higher when more metal objects are presented on their adjacencies. The metal artefact reduction tools were effective on dental structures thus this evaluation was influenced by the device used.

## EVALUATION OF THE MANIPULATION OF FILLING PASTES FOR ENDODONTIC TREATMENT IN PRIMARY TEETH

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PUC CAMPINAS

**Aim:** The choice of the filler material for the root canal in pulp therapy of primary teeth is an important and basic principle for a successful treatment. It is important to know, the potential toxicity of the materials, the histological reactions and the biologic mechanisms that the material induces to repair.

**Method:** This study developed a specific dispenser for a proper proportion and manipulation of the components of Vitapex® paste (calcium hydroxide PA, iodoform and silicone oil) used in root canal filling in primary teeth. In addition, evaluated "in vitro", the antibacterial action on the population of the Enterococcus Faecalis, the most found bacterium in root canals, and compared with the trademark (Vitapex®) and a similar pharmacy Feapex® by Fórmula e Ação.

**Results:** The manipulated paste is the one that didn't showed statistics difference ( $P \leq 0,05$ ) in relation of flowability and antibacterial action compared with Vitapex®.

**Conclusion:** The appropriate proportion of the powders and the silicone oil, also pre - dosed, allowed the reproduction of the original paste with the same flow and antimicrobial action, even better than a similar pharmacy.

## EVALUATION OF THE MESIODISTAL TOOTH ANGULATIONS IN PATIENTS TREATED WITH THE JONES JIG FOLLOWED BY FIXED APPLIANCES

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BAURU DENTAL SCHOOL - USP

**Aim:** The purpose of this study was to evaluate the maxillary mesiodistal tooth angulations of Class II patients treated with the Jones Jig distalizer followed by fixed appliances and compared them with an untreated control group with normal occlusion.

**Method:** Total sample comprised 80 panoramic radiographs of 40 patients. The experimental group was composed by 60 radiographs of 20 patients treated with the Jones Jig followed by fixed appliances. The radiographs were taken at pretreatment (T0), post-distalization (T1) and post-treatment (T2). Moreover, the historical control group of normal occlusion comprised 20 radiographs of 20 patients. The axial angulations of all maxillary erupted teeth were evaluated by the software Dolphin Imaging 11.5. Intragroup treatment changes were compared with repeated measures Analysis of Variance, followed by Tukey tests, while intergroup comparisons were performed with t tests.

**Results:** At the post-distalization stage, the molars presented a significantly greater distal angulation, followed by mesial angulation at post-treatment, when compared to pre-treatment. In contrast, the premolars, canines and incisors showed a greater mesial angulation at the post-distalization stage, with a subsequent distal angulation at post-treatment. Intergroup comparisons resulted in first molars, premolars, canines and central incisors significantly more distal angulated in the experimental group, when compared to the control.

**Conclusion:** In general, patients treated with the Jones Jig distalizer followed by fixed appliances presented the maxillary teeth more distally angulated when compared to an untreated group with normal occlusion.

## EVALUATION OF THE MICROBIAL LOAD AND LEVELS OF LIPOTEICOIC ACID IN CASES OF SYMPTOMATIC AND ASYMPTOMATIC PULP NECROSIS

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to evaluate the reduction of microbial load and to determine the levels of lipoteicoic acid (LTA) in the cases of necrotic teeth of symptomatic patients and in cases of necrotic teeth of asymptomatic patients during the different stages of the endodontic treatment: before the chemical-mechanical preparation (CMP), after CMP and after intracanal medication (ICM).

**Method:** Twenty patients requiring endodontic intervention were selected, presenting or not pain symptomatology. Microbiological and LTA samples were collected from within the root canals. The CMP was performed with chlorhexidine gel 2% (CHX), and the intracanal medication used was calcium hydroxide and CHX 2% for 30 days. The culture method for quantification of colony forming units (CFU) was used to evaluate and efficacy of CMP and ICM in reducing microbial load. ELISA was used for quantification of LTA. The Friedman test was applied for comparison between the locations and moments of the collections and Mann Whitney for comparisons between the groups.

**Results:** There was a significant decrease in CFU after CMP in both groups ( $p < 0.05$ ). There

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was no significant difference between the two groups regarding the quantification of CFU ( $p > 0.05$ ). As for LTA, there was a significant decrease in the asymptomatic group after CMP ( $p < 0.05$ ). In the symptomatic group, there was a significant decrease between the time after the ICM and before the CMP ( $p < 0.05$ ).

**Conclusion:** In conclusion, CMP is effective in reducing microbial load, but not LTA, whose levels remain high even after use of ICM. Support: FAPESP 2017/18459-0; 2015/23479-5, CAPES & CNPq 308162/2014-5.

#### EVALUATION OF THE OSTEOGENIC POTENTIAL OF CELLS ENRICHED WITH CD146 SURFACE MARKER FOR THE PREPARATION OF CELL MEMBRANES

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**Aim:** It has been suggested that mesenchymal stem cells (MSCs) would be located at the perivascular region of different organs and tissues, presenting characteristics similar to pericyte cells, which own the capacity to migrate and proliferate in case of tissue damage. The aim of this study was to evaluate in vitro the osteogenic differentiation potential of a CD146+ cell population, surface marker for pericytes and progenitor cells, and to propose a method of preparing enriched cell membranes for the regeneration of periodontal defects, aiming a future therapeutic approach.

**Method:** For this, a cell population was isolated from the periodontal ligament and previously characterized as CD146+ and CD146-. The differentiation potential and mineral production capacity were evaluated by Alizarin Red Staining. Cell membranes formation was performed by induction with Dexamethasone (10-5 M) and Ascorbic Acid (50 mg / mL) during 14 days and the metabolic capacity of the membranes was measured by MTT assay.

**Results:** The results showed that CD146+ cells had greater osteo-cementoblastic potential when compared to CD146- cells. The membrane formed by CD146+ cells also presented greater cell viability.

**Conclusion:** These findings will contribute to a better characterization of cell populations capable of regenerating the periodontium, as well as to perform new methods for future clinical therapies.

#### EVALUATION OF THE PRECISION OF DIFFERENT INSERTION DEVICES FOR DENTAL IMPLANTS AFTER REPEATED USE AND STERILIZATION

ERICK ANDRÉS ALPACA ZEVALLOS; DOUGLAS RANGEL GOULART; CLAUDIO FERREIRA NÓIA; LUCIANA ASPRINO; MARCIO DE MORAES; ALEXANDER TADEU SVERZUT

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this Study is to determine the influence of the use and steam sterilization on the precision of different surgical torque control devices in implant placement.

**Method:** Twenty-four torque control keys from different manufacturers of dental implants were tested, divided into four groups, according to the manufacturer brand. Each of these groups, containing 6 torque wrenches, were divided into 2 subgroups with 3 torque wrenches. One of these subgroups of each manufacturer was sterilized before mechanical test and the other one would not. The performance of each subgroup was measured using a benchtop digital torque wrench. The subgroups were compared, and for those submitted to sterilization cycles by steam autoclaving before each mechanical test, 50 sterilization cycles was performed, with 16 repetitions for each insertion system, in order to be subjected to 800 gauging for each torque control key of the subgroups exposed to sterilization. The same was performed for the subgroups submitted only to mechanical test, 50 tests of each was performed, totaling 800 gauging for each torque control switch.

**Results:** We observed a statistically significant difference in accuracy of the torque control devices related to the use ( $p < 0.05$ ) and sterilization ( $p < 0.05$ ) as independent factors, without a correlation between both variables.

**Conclusion:** The recurrent use and steam autoclave sterilization showed to have influence on the accuracy and precision of the torque control devices calibration after 50 sterilization cycles and 800-torque gauging.

#### EVALUATION OF THE PREEMPTIVE USE OF DEXAMETHASONE IN POSTOPERATIVE PAIN IN PATIENTS SUBMITTED TO ENDODONTIC TREATMENT

JÉSSICA JEUKEN TEIXEIRA; ADRIANA DE JESUS SOARES; BRENDA DE PAULA FIGUEIREDO GOMES; ALEXANDRE AUGUSTO ZAIA; CAIO CÉSAR RANDI FERRAZ; MARINA MARCIANO; JOSÉ FLAVIO AFFONSO DE ALMEIDA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study aimed to evaluate the preemptive use of dexamethasone 4mg in a single dose in the control of pain after endodontic treatment with foraminal enlargement, when compared to a placebo.

**Method:** Pharmacological preparations were given to volunteers 30 minutes before the start of the procedure. The treatments were performed with the technique of foraminal enlargement with instrumentation, chlorhexidine gel 2% as auxiliary chemical and cement filling Endomethasone N. We selected 199 patients who presented with need for endodontic treatment, independently of the initial diagnosis. The volunteers were randomly divided into two groups, drawn through Excel: Protocol A = Placebo (Starch 4mg) and Protocol B = Dexamethasone 4mg. In the 24, 48, 72 hour and 1-week postoperative periods, postoperative pain was analyzed using two scales.

**Results:** The results showed that 41.7% of the patients reported postoperative pain. Postoperative pain levels were lower in all evaluated periods when dexamethasone 4mg was given. Patients with previous symptomatology had a higher incidence of post-treatment pain in both groups. In addition, 4mg dexamethasone was effective in controlling post-treatment pain

regardless of the diagnosis being studied and the number of rescue medications consumed in this same group was significantly lower.

**Conclusion:** It was concluded that postoperative pain in patients submitted to endodontic treatment with foraminal enlargement is lower with the preemptive use of dexamethasone 4mg in different pulp conditions compared to placebo.

#### EVALUATION OF THE SEALING MATERIAL IN MICROBIAL CONTAMINATION OF ROOT CANAL IN PRIMARY TEETH: IN VITRO STUDY

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CATOLIC PONTIFICIAL UNIVERSITY OF CAMPINAS - PUC CAMPINAS

**Aim:** Endodontic treatment in primary teeth should promote the microbial elimination present in root conducts objectivating the maintenance of their integrity until the correct date of their exfoliation. The evaluation of this study in vitro was comparative and evaluates the ability to Obturador Provisório® and Guta Percha bastão®, which are restorative materials, common and much later in clinical practice after the endodontic treatment of deciduous teeth.

**Method:** Eighty artificials upper central incisors were selected, randomly divided into two groups: G1 (n=40)=Obturador Provisório®; G2 (n=40)= Guta Percha bastão®. Surgical access, rotatory instrumentation and root canal filling were performed and after filling, 1 aliquot of 25 µl of Streptococcus mutans and Enterococcus faecalis was sowed at the entrance of the root canal, and these were incubated in anaerobes jar in a bacteriological oven at 37°C for experimental times (24, 48, 72, 96, 120 hours).

**Results:** Were found statistically significant difference in the first 24 hours comparing the sealing made with Guta Percha bastão® with the control ( $p = 0.046$ ). In the others experimental times, there wasn't statistically significant difference when compared to controls ( $p > 0.05$ ).

**Conclusion:** The specimens sealed with guta percha bastão® showed contamination after 24 hours and in the other times evaluated in this work, Guta Percha bastão® and Obturador Provisório® were not efficient in controlling the bacterial contamination, both failing sealing.

#### EVALUATION OF THREE TOPICAL ANESTHETIC FORMULATIONS FOR LINGUAL FRENULUM ANESTHESIA

TAMIRIS CHRISTENSEN BUENO; JAIZA SAMARA MACENA DE ARAÚJO; FRANCISCO CARLOS GROPPPO; MARIA CRISTINA VOLPATO

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This crossover double-blinded randomized clinical trial aimed to evaluate the anesthetic efficacy of different topical anesthetics in the lingual frenulum of adults, aiming on the selection of the best one for use in babies.

**Method:** Forty and three volunteers were submitted to a one-minute application of the following formulations: 2.5% prilocaine and 2.5% lidocaine cream - eutectic mixture (EMLA®), 4% lidocaine cream - formulation (Dermomax®), 1% tetracaine with 0.1% fenylefrin (Allergan®) and placebo (carbopol gel). After frenulum drying, the formulations were applied on each side of the lingual frenulum (62.5 mg on each side for EMLA®, Dermomax® and Placebo, and 1 drop on each side for Allergan®). Previously, and right after the applications, the pain perception was evaluated each 2 minutes with a digital von Frey aesthesiometer.

**Results:** All tested formulations presented better ( $p < 0.05$ ) results at all pressure levels (20%, 30%, 50%, 70%, 90% e 100%) above basal perception level evaluated previously to the application of the formulations. Dermomax and EMLA promoted higher anesthetic efficacy than Allergan. At lower pressures (20% and 30%) Dermomax was more effective than EMLA. The volunteers reported mild burning sensation after EMLA application.

**Conclusion:** All tested topical local anesthetics presented higher anesthetic efficacy than the placebo. Dermomax and EMLA presented higher anesthesia success rate and duration. Due to the burning sensation provided by EMLA and the higher anesthesia success of Dermomax at the lower pressure levels, the latter could be the anesthetic of choice for frenotomy in babies.

#### FACTORS ASSOCIATED WITH SUICIDE AMONG BRAZILIAN ADOLESCENTS

CASSIA LIMA DE OLIVEIRA GRACINI; BRUNA PAULA DE CARVALHO; MARCIA REGINA DAL MEDICO VERDI; LAIR BIANCHI DE MELO; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Suicide is the second leading cause of death among young people aged 15-29 in the world (WHO, 2016). Suicidal behavior encompasses suicidal ideation, suicide attempts, and consummate suicide. The objective of this study is to verify the factors associated with this growing problem among Brazilian adolescents.

**Method:** It is an integrative review of the literature.

**Results:** The main results were: suicide is multifactorial, mainly related to intense feelings of anguish, sadness and desvaluation. In the ideation and attempts experienced among adolescents and young people, the majority were: men, unmarried, with low schooling, unemployed, chemical dependents and some psychiatric comorbidities. In cases of autointoxication and self-injury, studies report female predominance. Another important point of a study was the increase in suicide among indigenous people with high rates among children and adolescents. Self-inflicted injuries in the emergency and emergency services account for almost 10% of violence and are underreported. The discrepancy of the diagnoses and the non-referral to the indicated health service stand out.

**Conclusion:** It is concluded, once this aggravation is multifactorial, the understanding of the epidemiological scenarios can help the elaboration, planning and implementation of intervention strategies.

## All abstracts appear as submitted by the authors without editing

**FILM THICKNESS AND FLOW OF MTA-BASED EXPERIMENTAL SEALANT CEMENTS AND A SALICYLATE RESIN**

AMANDA GUERRA CAVALCANTE DE SOUZA; RAFAEL PINO VITTI

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to compare the flow and film thickness of three experimental endodontic sealer based on MTA (mineral trioxide aggregate) and salicylate resin.

**Method:** The experimental sealers were composed of a base and a catalyst pastes. The base paste was made by butyl ethylene glycol disalicylate and bismuth oxide. Three different catalyst pastes were formulated containing: (MTAe) MTA, n-ethyl, p-toluenesulfonamide and titanium dioxide; (MTA-HA) MTA, hydroxyapatite, n-ethyl, p-toluenesulfonamide and titanium dioxide; (MTA-DCPD) MTA, calcium phosphate dihydrate, n-ethyl, p-toluenesulfonamide and titanium dioxide. MTA Fillapex (Angelus®) was used as commercial reference. All materials were handled at room temperature (25±2°C) and relative humidity (50±5%). The flow (n=3) and film thickness (n=3) were tested according to ISO 6876: 2001. Data were submitted to statistical analysis using non parametric test (Kolmogorov-Smirnov) and ANOVA-one way with Tukey test (5%).

**Results:** The results demonstrated that MTAe and MTAe-DCPD showed the lowest flow values, while MTA Fillapex had the highest mean value. For the film thickness test, MTAe and MTAe-DCPD sealers presented highest results, while MTA Fillapex and MTAe-HA the lowest flow values.

**Conclusion:** The experimental MTAe-HA presents physical properties of flow and thickness within ISO 6876:2001 guideline.

**FORENSIC FACIAL RECONSTRUCTION BY THE AMERICAN TECHNIQUE**

RAFAEL ODAIR MALAGUETA; DORA ZULEMA ROMERO DÍAZ; DIANA MARIA SOUZA E COUTO; STÉFANY DE LIMA GOMES; VIVIANE ULBRICHT; JÚLIA VITÓRIO OCTAVIANI; MARIA BEATRIZ DUARTE GAVIÃO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim was to perform the manual three-dimensional forensic facial reconstruction according to the American Technique using modeling mass (plasticine).

**Method:** Three skulls of the osteological and tomographic biobank (FOP-UNICAMP) were selected with the following anthropological profile: females, aged from 25-30 years, with Caucasoid, Negroid and Brown ancestry. Skull replica were obtained, three for each ancestry (n=9), and in them 21 craniometric points were located and demarcated. Small blocks of sticky wax on stick were get with values correspondent to the thickness of the facial tissues, measured with digital caliper following conventional parameters. They were adhered on the craniometric points and joined together with plasticine tapes of 10 mm thick and 15 mm wide, until the replica face had been completed. Different colors of plasticine were weighted and mixed to represent the skin color according to ancestry and prepared as a 3-4 mm thick layer. For the Caucasoid, white (170 g) with light brown (80 g) were mixed; for the Brown, black (170 g) with orange (30 g); for Negroid only black (250 g) was used. The sensory organs were adhered: eyes, external auditory pavilion, lips and nose. Forensic trichology was delineated (hair, eyelashes and eyebrows) by texture.

**Results:** Obtaining nine reconstituted final faces, three of each ancestry.

**Conclusion:** orensic Facial Reconstruction by the American Technique was efficient to be used in forensic situation, allowing recognition by family members and contributing to the identification process. Consequently, this technique can facilitate the primary identification methods.

**FORENSIC FACIAL RECONSTRUCTION BY THE RUSSIAN TECHNIQUE: PRACTICAL APPLICATION OF HUMAN ANATOMY**

CAROLINA ROCHA; DORA ZULEMA ROMERO DÍAZ; DIANA MARIA SOUZA E COUTO; STEFANY DE LIMA GOMES; VIVIANE ULBRICHT; JÚLIA VITÓRIO OCTAVIANI; MARIA BEATRIZ DUARTE GAVIÃO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim was to perform the manual 3D forensic facial reconstruction (FFR) according to the Russian technique using modeling mass.

**Method:** Three skulls of the osteological and tomographic biobank (FOP-UNICAMP) were selected with anthropological profile: females, aged from 25-30 years, Caucasoid, Negroid and Brown ancestry. The origin and insertion of the facial and masticatory muscles were located and demarcated in the skull replica. Plasticine was used to represent the muscles, glands and adipose tissue. Different colors of plasticine were weighted and mixed to represent the skin color according to ancestry and prepared as a 4mm thick layer. For the Caucasoid, white (170g) with light brown (80g) were mixed; for the Brown, black (170g) with orange (30g); for Negroid only black (250g) was used. To make the eyes, two balls of white plasticine of 25mm in diameter were molded, positioned in the center of the orbit with the bipupilar line parallel to the Frankfurt plane. The ears were positioned using the external auditory canal as a reference point. The nose wings were projected 5mm apart from the piriform aperture. For the length of the lips the distal surface of the upper canines was used as a reference. Forensic trichology was delineated (hair, eyelashes and eyebrows)

**Results:** Obtaining nine final faces, three of each ancestry (n=9).

**Conclusion:** The FFR by the Russian Technique showed the importance of anatomy to reproduce the face of an individual antem mortem, for use in forensic situation, allowing recognition by family members and contributing to the identification process. Consequently, this technique can facilitate the primary identification methods.

**GIANT AMELOBLASTOMA: A CASE FROM THE NORTH OF BRAZIL**

SAMEH BRGLAH; ANDERSON MAURICIO PAIVA E COSTA; RAÍRA DE BRITO SILVA; LUCAS LACERDA DE SOUZA; HÉLDER ANTÔNIO REBELO PONTES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Ameloblastoma is an aggressive and asymptomatic tumour histologically formed by remnant of the dental lamina. Clinically, the lesions may cause tooth displacement, mobility and/or resorption and paresthesia. They are commonly presented as a massive swelling of the jaws with high percentage of recurrence.

**Method:** This work aims to report a case of a 19-year-old young male patient (R.C.O.) who was referred to the stomatology clinic due to a progressive swelling in the left mandible extending from parasymphysis to the condyle. Computed tomography showed multilocular lesion, with well-defined margins, resembling "soap bubbles".

**Results:**

**Conclusion:** The histopathological exam confirmed the diagnosis of ameloblastoma. Radical surgical resection followed by immediate reconstruction using a titanium plate was applied as rehabilitation treatment. Ameloblastoma is a destructive lesion and must be known by the dentists, aiming an early diagnosis and a better prognosis for the patient.

**GLASS FIBER POSTS: INFLUENCE OF CEMENTATION TECHNIQUES ON PUSH-OUT BOND STRENGTH**

RENATA PEREIRA; VICTÓRIA CASTELAN RODRIGUES; RODRIGO BARROS ESTEVES LINS; DÉBORA ALVES NUNES LEITE LIMA; LUÍS ROBERTO MARCONDES MARTINS; FLÁVIO HENRIQUE BAGGIO AGUIAR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To quantify and compare the push-out bond strength of glass fiber posts cemented by conventional technique, technique of two steps with luting agent and technique of two steps associating bulk-fill composite and luting agent.

**Method:** Eighty maxillary bovine incisors were endodontically treated and divided into 8 groups (n=10), according to luting agent (Rely X ARC and Duo-link) and cementation technique (conventional technique; technique of two steps with luting agent; and technique of two steps associating bulk-fill composite - Filtek Bulk-fill flow or Surefil SDR flow - and luting agent). Samples were submitted to push-out bond strength test and fracture pattern was evaluated through scanning electron microscope. Data were submitted to two-way ANOVA and Tukey's test (α=0.05).

**Results:** When Rely X ARC was used, conventional cementation technique obtained higher bond strength values than technique of two steps associated with Filtek Bulk-fill flow. When Duo-link was used, technique of two steps associated with Filtek Bulk-fill flow presented higher bond strength values than conventional technique. The most prevalent fracture patterns were adhesive between luting agent and dentin, and adhesive between bulk-fill composite and dentin.

**Conclusion:** Two-step cementation technique associated with bulk-fill composite may be promising depending on the luting agent used.

**GRAN ACUPUNCTURE IN IDIOPATHIC FACIAL PARALYSIS - CASE REPORT**

TALITA BONATO DE ALMEIDA; BRUNA GABRIELA ARAÚJO XIMENES; LUIDE MICHAEL R. F. MARINHO; ANTONIO CARLOS NOGUEIRA PÉREZ; MARIA DA LUZ ROSÁRIO DE SOUSA

SCHOOL OF DENTISTRY OF SÃO PAULO - USP

**Aim:** Bell's palsy has several etiological causes and can be treated using medicines, physiotherapy, among others. Many studies have demonstrated the effectiveness of acupuncture in the recovery of patients with this type of paralysis.

**Method:** This is a case report of a young female patient who presented abrupt onset facial paralysis. The patient complained of pain and feeling of weight on the left side of the face and loss of facial expression. After the anamnesis performed following the principles of Traditional Chinese Medicine (TCM), the patient was diagnosed according to Bioenergetic Acupuncture with extravasation of energy of Pericardium and was treated using the technique of Gran Acupuncture, that is, contralateral needling during 10 sessions over 21 days. After this period, the patient showed no more signs and symptoms of facial paralysis.

**Results:**

**Conclusion:** Gran Acupuncture technique was effective in relieving symptoms related to Bell's palsy.

**HEMANGIOLYMPHANGIOMA OF TONGUE IN A CHILD: A CASE REPORT**

HENRIQUE HEIJI SATAKE; ISABEL SCHAUSLTZ PEREIRA FAUSTINO; DIEGO TETZNER FERNANDES; PATRICIA MARIA FERNANDES; ALAN ROGER DOS SANTOS; RAISA SALES DE SÁ; MARCIO AJUDARTE LOPES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study is to describe a case report of hemangiolympangioma of tongue in a 7 years old girl with 10 years of follow up.

**Method:** A 7 years old girl was referred to Orocentro with a nodular lesion located on the dorsum of the tongue. Clinically, it was observed a single lesion measuring 1cmx3cmx0.5cm, with a mixed coloration (red in the anterior region and normochromic in the posterior) and vesicular surface in the normochromic area. The patient's mother reported that the lesion was present since her birth. An incisional biopsy in the posterior region was performed and the diagnosis of hemangiolympangioma was established. It was decided to follow up the lesion without any treatment. After 7 years, the lesion remained with similar features, however, the patient complained about aesthetic aspect. Therefore, the sclerotherapy with ethanolamine oleate 5% was proposed. Three sclerotherapy sessions with 1 month of interval between them and total usage of 1.7ml were performed, showing important reduction. However, the patient was still unsatisfied with the remaining lesion. It was proposed electrocauterization surgery. Three electrocauterization surgeries were performed. The patient is in follow up and satisfied with the result.

**Results:**

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**Conclusion:** Even though hemangiolympangioma is not a rare disease, there are few scientific reports in the literature. The treatment of this lesions is a challenge for us dentists because of the recurrences. The usual treatment is just the follow up. However, eventually association of sclerotherapy and surgery may be a good option.

**HEMIFACIAL SPASM TREATED WITH BOTULINUM TOXIN A - CASE REPORT**

VITOR PRADO MONTE MOR; PAULO HENRIQUE FERREIRA CARIA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To report a clinical case of application of botulinum toxin type A in patients with hemifacial spasm.

**Method:** A 65-year-old male patient sought the postgraduate clinic of the Piracicaba Dental School, reporting difficulties in phonation, mastication, vision and impairment of aesthetics and facial harmony due to severe spasms in the region of the palpebral part of the orbicularis muscle and angle of mouth. Neurological examination was normal, except for the exaggerated contraction and of the major and minor zygomatic muscles, orbicularis oculi (eyelid) muscle and risorial muscle. The diagnosis was clinical, and after a detailed anamnesis, the treatment course was established with Botulinum Toxin type A (BTX-A) brand Botulifit 100U. A total of 37U BTX-A were applied, distributed on the right and left sides of the face in the following proportions: 6 points of 3 units in the region of the orbicular muscle on the right side (3 points) and left (3 points) of the face, 2 points on 3 units in the zygomatic muscles major and minor only on the direct side, 1 point of 2 units in the upper lip lifter and right wing nose, 2 points of 3 units in the right and left corrugator muscles and 2 points of 2.5 units in the frontal muscle region, according to figure 1. After 15 days, retouching was performed for aesthetic purposes, using only 1 unit in the orbicularis muscle of the right eye.

**Results:**

**Conclusion:** We concluded that the use of Botulinum Toxin type A was effective in the treatment of hemifacial spasm, both functional and aesthetic.

**HISTOMORPHOMETRIC ASSESSMENT OF ABSORBABLE MEMBRANES FOR GUIDED BONE REGENERATION OF BONE DEFECTS IN RODENT SKULLCAPS**

EDITH UMASI RAMOS; EDITH UMASI RAMOS\*; CAROLINA FERRAIRO DANIELETTO-ZANNA; GUSTAVO ZANNA FERREIRAS; LEONARDO PEREZ FAVERANI; ROBERTA OKAMOTO; WIRLEY GONÇALVES ASSUNÇÃO; PAULO SÉRGIO PERRI DE CARVALHO; ANA PAULA FARNEZI BASSI; ANA PAULA FARNEZI BASSI

ARAÇATUBA DENTAL SCHOOL - UNESP

**Aim:** Histomorphometric assessment of absorbable membranes for guided bone regeneration of bone defects in rodent skullcaps

**Method:** Forty-eight male albino Wistar rats were divided into four groups (n=12 each): membrane-free control group (only blood clot, negative control); porcine collagen membrane group (Bio-Gide®, positive control); bovine cortical membrane group (GenDerm®, first experimental group), and thicker bovine cortical membrane group (GenDerm Flex®, second experimental group). Rats were euthanized at 30 and 60 days postoperatively. All morphological analyses were performed using a binocular optical microscope. Histometric analysis was performed using an optical microscope, these images were stored as figures (TIFF). The data obtained were transformed into absolute values of pixels to percentages for statistical tests. Immunohistochemistry analyses was performed under a light microscope and the intensity of the immunolabels will be determined semiquantitatively, with scores from 1 to 4. The Statistical analyses were performed in the statistical program Sigma Plot 12.3231. Thus, the 2-way ANOVA test was applied for Additionally, the Tukey post-test was applied.

**Results:** Histomorphometric and immunohistochemical results associated porcine collagen and thicker bovine cortical membranes with better new bone formation values. Less thick membrane also assisted in GBR.

**Conclusion:** All membranes promoted GBR, especially the positive control and experimental groups.

**HOME CARE PROGRAM OF THE MUNICIPALITY OF PIRACICABA**

MARCELO TADEU TRISTÃO; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The Home Assistance Program (HAP) is a complementary activity to the public health network, which aims to meet the health care needs of people who are bedridden unable to access health services through a multidisciplinary team. The aim is to perform a literature review about this practice: admission criteria, responsibilities of families and caregivers, composition of HAP members.

**Method:** Literature review in databases.

**Results:** The HAP in Piracicaba provides differentiated home care with technical and humanized quality with multiprofessional team (medical, nursing, physiotherapeutic, nutritional and social) for bedridden patients. For admission, it is necessary that the user have a responsible caregiver, of adult age, to provide the care to the user at home and be sent with a medical report from the basic care network, the center of medical specialties, hospitals and the acceptance of the family through the signing of the free and informed consent. In February 2019, 81.47% of the users served by the HAP are elderly, 30% aged between 80 and 89 years and 15.75% with age equal to over 90 years. The Home Care Therapy consists of nursing care and follow-up, medical visits, Social Work follow-up, motor / respiratory physiotherapy, nutritional counseling, psychological support, immunization and other services.

**Conclusion:** That it is necessary to consider elements such as the integrality of the care, the subjects of care and the articulation with the other health services. In this scenario, the family and the user return to centrality in the production of care, previously restricted to the practices of health professionals.

**IMMUNOHISTOCHEMICAL ANALYSIS OF IMMUNE CELL INFILTRATION IN GINGIVAL EPITHELIOID ANGIOMATOUS NODULE**

LARISSA NATIELE MIOTTO; FERNANDA GONÇALVES BASSO; AUDREY FOSTER LEFORT ROCHA; ANDRÉIA BUFALINO; ROSE MARA ORTEGA; JORGE ESQUICHE LEÓN; TULIO MORANDIN FERRISSE

ARARAQUARA DENTAL SCHOOL - UNESP

**Aim:** The aim of this investigation is to report an Epithelioid angiomatous nodule (EAN).

**Method:** A 69-year-old female patient was referred presenting a well-defined nodule with a smooth and erythematous surface, asymptomatic, measuring 0.8 cm in greater diameter with two months of evolution. Periapical radiograph was performed and showed no bone involvement. The lesion was fully excised without recurrences. Hematoxylin and eosin staining were performed in 5-µm sections for histopathologic analysis. Immunohistochemical reactions were carried out in 3-µm sections in accordance to manufacturer's instructions. The histopathological study showed a mucosal epithelioid proliferation with solid and organoid growth patterns, with vascular lumens scattered focally throughout the lesion. The large epithelioid cells showed intracytoplasmic vacuoles and vesicular nuclei with prominent nucleoli, surrounded by scarce extravasated erythrocytes. Immunohistochemistry showed positivity for vimentin, α-SMA, CD34, focally for D2-40, and Ki-67 labeling index was 15%. Noteworthy, numerous immune cells (HLA-DR+/CD68+/CD163+/FXIIIa+) scattered throughout the lesion, were detected. EAN was the final diagnosis. EAN is a rare benign vascular proliferation, regarded as part of the morphologic spectrum of benign and malignant epithelioid vascular lesions. Oral involvement is extremely rare and, to date, only three oral cases have been reported in the literature.

**Results:** with vascular lumens scattered focally throughout the lesion. The large epithelioid cells showed intracytoplasmic vacuoles and vesicular nuclei with prominent nucleoli, surrounded by scarce extravasated erythrocytes. Immunohistochemistry showed positivity for vimentin, α-SMA, CD34, focally for D2-40, and Ki-67 labeling index was 15%. Noteworthy, numerous immune cells (HLA-DR+/CD68+/CD163+/FXIIIa+) scattered throughout the lesion, were detected. EAN is a rare benign vascular proliferation, regarded as part of the morphologic spectrum of benign and malignant epithelioid vascular lesions.

**Conclusion:** This is the first report which highlights the immune cell population, with M2-like phenotype, as an important component of EAN, suggesting participation on their etiopathogenic mechanisms.

**IMPACT OF MICRO-COMPUTED TOMOGRAPHY RECONSTRUCTION PARAMETERS ON BONE FRACTAL DIMENSION ANALYSIS**

MURILO MIRANDA VASCONCELOS VIANA; HUGO GAÉTA ARAUJO; NICOLLY OLIVEIRA SANTOS; DANIELI MOURA BRASIL; EDUARDA HELENA LEANDRO DO NASCIMENTO; CHRISTIANO DE OLIVEIRA SANTOS

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To evaluate the influence of the level of three reconstruction tools: beam-hardening correction (BHC), smoothing filter (SF) and ring artifact correction (RAC) on the fractal dimension (FD) analysis of trabecular bone.

**Method:** Five Wistar rats' maxillae were individually scanned in a SkyScan 1174 micro-CT device, positioned with the long-axis perpendicular to the horizontal plane and wrapped in wet paper, under the following settings: 50 kV, 800 µA, 10.2-µm voxel size, 0.5-mm Al filter, rotation step 0.5°, 2 frames average, 180° rotation and scan time of 35 minutes. The raw images were reconstructed under the standard protocol (SP) recommended by manufacturer, a protocol without any artifact correction tools (P0) and more 35 protocols with different combinations of these reconstruction parameters. The same volume of interest (VOI) was established in all reconstructions for each maxilla and the FD was calculated. One-way ANOVA with Dunnett post-hoc test was used to compare the FD of each reconstruction protocol (P0 to P35) to the SP (α=5%).

**Results:** The FD values increased significantly when the level of BHC and SF increased, but protocols that BHC was settled at 45% and combined with SF of 2, or when BHC was settled at 30% combined with SF of 4 or 6, the FD values had no statistical difference compared to SP. In all cases, the variation in RAC did not influence FD values.

**Conclusion:** The BHC and SF tools affect the FD values of micro-CT images of the trabecular bone, therefore, these reconstruction parameters should be standardized when the FD is analyzed.

**IMPACT OF THE VIRTUAL REALITY SIMULATOR ON PRE-CLINICAL TEACHING IN ENDODONTICS - LITERATURE REVIEW**

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**Aim:** The objective of this study was to compile the literature that evaluates the use of 3D Virtual Reality Simulators (VRS) in Dentistry and in the pre-clinical education of Endodontics.

**Method:** Relevant articles were obtained from the Cochrane Database of Systematic Reviews and PubMed databases. The search included "endodontic education" and "VRS" and combined keywords.

**Results:** The preclinical teaching of endodontics is influenced by a range of factors. Since the 70s, technology has been improved teaching strategies affecting Endodontics, and has been increasingly used in the curriculum of Dentistry courses to complement traditional teaching. Most virtual reality simulation devices are in the early stages of development and have no long-term assessment of their use, benefits, and limitations. Studies to compare the technical and perceptual aspects when using artificial teeth, extracted teeth, and VRS provide insights to determine the most effective and indicated methods for implementing in endodontic teaching. The literature shows that operators trained only on artificial teeth or VRS have been adequately trained for subsequent endodontic treatment in a clinical environment, however, as

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these methods seem to be more adequate as complementation to those of conventional teaching, they are indicated as adjuvant in learning the techniques steps of endodontic treatments.

**Conclusion:** Thus, additional studies in this area to investigate the impact and new strategies of VRS implementation in the preclinical endodontic teaching are important.

#### IMPORTANCE OF BREASTFEEDING FOR THE DEVELOPMENT OF THE BABY AND THE STOMATOGNATHIC SYSTEM

MARIA LUIZA DE CARVALHO; BEATRIZ CRISTINA DE FREITAS; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To discuss the importance of breastfeeding by focusing on the growth and development of the face, nutrition, affective ties, and dental problems related to non-breastfeeding.

**Method:** A literature review was carried out in periodicals published in the Google Scholar database, Scielo and the Ministry of Health.

**Results:** Studies point to the importance of breastfeeding for the growth and development of the baby. Breastfeeding is the first exercise of the facial muscles (lips, tongue, and cheeks) favoring the stimulus necessary for the harmonious growth of the face, structures, and processes related to breathing, swallowing, chewing and speech (stimulating articulated points responsible for the production of phonemes/sounds). The baby, who is breastfed, as well as satisfying his nutritional and affective needs, also receives a "training" for the second reflex of feeding, which is chewing. Breastfeeding makes the baby receive all the nutrition he needs to achieve healthy growth. Studies show that children who did not breastfeed adequately presented dental problems such as atresia of the maxilla (narrow upper arch), open bite (anterior teeth do not touch), mandibular retrusion (small chin), dental crowding (lack of space for teeth).

**Conclusion:** It is concluded that breastfed babies are less likely to develop dental problems. That breastfeeding improves quality of life, strengthens the affective bond between mother and child and the development of the stomatognathic system.

#### IMPORTANCE OF CORRECT MOLDING OF SKULLS: METHODOLOGY AND CARE

LÉTICIA THOMÉ DE LIMA; DORA ZULEMA ROMERO DÍAZ; DIANA MARIA SOUZA E COUTO; STÉFANY DE LIMA GOMES; VIVIANE ULBRICHT; JÚLIA VITÓRIO OCTAVIANI; MARIA BEATRIZ DUARTE GAVIÃO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim was to present a material and the methodological care for molding human skull to use in forensic facial reconstruction.

**Method:** Three female skulls aged 25-30 years were selected from the osteological and tomographic biobank (FOP-UNICAMP). The areas of retention were relieved with utility wax. The mandible heads were placed into the glenoid cavity with dental arches in occlusion and stabilized using wax along edentulous areas. The mold was obtained using silicone material and an opened wooden box, containing locating guides and holes for the molding material to flow. The skull was positioned with the neurocranium facing the box base with the Frankfurt plan at an angle of 70° to the horizontal plane of the box, oriented by the sagittal plane. Silicone was used in a proportion of 30 g of catalyzer and 1 kg of powder, manually blended during 1-3 min and poured into the box bore; the polymerization taken 12h when the skull was removed and the anatomic details observed, guaranteeing good reproduction. The cast was obtained using 100 g of type III plaster mixed manually with 22 mL of water during 45s under vibration and inserted into the silicone mold in small amounts. After crystallization (1h) the plaster cast was removed.

**Results:** Six replicas for each ancestry were obtained (n=18) and the respective reliability was verified by craniometric point distances, which did not differ from the original skulls (P>0.05).

**Conclusion:** Silicon material showed adequate fluidity to adapt in anatomical structures of the skull, firm to stay in the box when the model was removed and dimensionally stable to reproduce several models with metric reliability.

#### IMPORTANCE OF ORAL MICROBIOLOGY

ALEXANDRA ROBERTA DE OLIVEIRA; BEATRIZ CRISTINA DE FREITAS; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To know the oral microbiology focusing on the microbiota, the main associated microorganisms and sources of infection, and the main oral diseases.

**Method:** This is a literature review in the Google Scholar and Scielo databases on oral microbiology.

**Results:** The oral cavity presents one of the most diverse and complex microbiots of the human organism, resulting from the great variety of microorganisms. Anaerobic and aerobic environments, environments with pH variations, different contact surfaces, besides anatomical characteristics make the oral cavity propitious for biofilm deposition. Biofilm is a polymicrobial community embedded in an extracellular matrix of organic and inorganic components. This biofilm may present pathogenic characteristics depending on its composition and location. About 350 species make up the oral microbiota with an average of 750 million bacteria/mL in saliva and up to 200 billion per gram in biofilm. There are three microorganisms: Lactobacillus, Streptococcus, and Staphylococcus. Microorganisms colonizing the oral cavity can cause a number of oral infectious diseases, including periodontitis, dental caries, endodontic disorders, dry alveolitis, and tonsillitis, as well as bacterial endocarditis and subcutaneous diseases. They are important sources of infections, especially in individuals whose airway defenses are impaired by anatomical deformations, age and immunological weakness, use of alcohol, drugs, and tobacco.

**Conclusion:** Oral microbiology has great importance in the study of microorganisms associated with oral diseases. Oral hygiene is essential to maintain normal microbiota levels.

#### INFLUENCE IN THE INITIAL CHEMICAL SETTING OF CONVENTIONAL GLASS IONOMER CEMENT ADDED WITH TiO2 NANOTUBES

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**Aim:** The aim of this study was to assess the possible variations in the initial chemical setting of conventional glass ionomer cement (GIC) added with TiO2 nanotubes.

**Method:** TiO2 nanotubes (3%, 5%, and 7% were incorporated into GIC's (Ketac Molar EasyMix-KM) powder component, whereas unblended powder was used as control (n=12). Material was spatulated for 1 minute according to the manufacturer's recommendation, with metal spatula on a waterproof paper block. After agglutination of the material, it was waited 90 s to start the measurements with the Gillmore needles. First, the Gillmore needle of smaller caliber was used, at intervals of 30 s, followed by the measurements with the larger gauge needle, also in intervals of 30 s. The needle exchange time was determined when the smaller caliber needle did not promote the marks of its total circumference in the GIC. This time was considered the initial chemical setting of the material.

**Results:** Initial chemical setting data was submitted to one-way ANOVA followed by the Tukey test (&alpha;=0,05). The KM containing 7% TiO2 exhibited the highest value of initial chemical setting differing statistically from the control (KM) and the 3% TiO2 groups (p<0.01).

**Conclusion:** There was not significant difference among control, and 3% and 5% TiO2 groups. Therefore, the initial chemical setting is affected by incorporation of 7% TiO2 nanotubes into conventional glass ionomer cement. However, 3% and 5% TiO2 concentrations was not influenced in their initial chemical setting.

#### INFLUENCE OF APPLICATION OF UNIVERSAL ADHESIVE SYSTEMS UNDER ELECTRIC CURRENT IN THE VALUES OF BOND STRENGTH TO DENTIN

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**Aim:** The aim of this study was to assess whether the application of an adhesive system Universal applied both in the conventional manner, self etch as in the presence of electric current would interfere with the union's resistance to the tooth.

**Method:** Were used 36 bovine teeth were divided into 4 groups. The teeth were cut and the adhesive systems were applied as test groups, and in those where there is electric current, a device was coupled to the microbrush to ensure passage of electric current. After the restoration, the teeth were stored for 24 hours and after, cut into matchsticks 1 mm<sup>2</sup>. Were taken to microtensile test for the determination of the union strength.

**Results:** The data were subjected to statistical analysis using two-factor ANOVA (wet or autocondionate technique and application or not of electric current) and the averages compared by Tukey test with a significance level of 5%. Average of the results of bond strength after 24 hours of storage. Wet technique: (Control = 43Aa; Current 50µA = 47.81 Aa) and the Self Etch Technique: (Control=42,16Aa; Current 50µA=46,55Aa).

**Conclusion:** It can be observed that in the period of 24 hours there was no significant difference between the technique used for the preparation of the restoration. The application of electric current did not result in a significant increase of union resistance.

#### INFLUENCE OF AYAHUASCA ON THE SURFACE PROPERTIES OF A BULK FILL RESIN COMPOSITE

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**Aim:** The aimed of this study was to evaluate the influence of Ayahuasca and other beverages on surface roughness (Ra) and color stability (ΔE) on the top surface of a Bulk-Fill resin based composite.

**Method:** For this, forty specimens of the resin Filtek Bulk Fill (3M) were made using a circumferential metallic matrix (5 mm diameter x 2 mm deep) and photoactive in 1200W/cm2 for 20 seconds. The specimens were submitted to initial analyses of color and roughness (L1) and after immersed in solution according to the experimental group (Ayahuasca, red wine, Coke and distilled water) during 15 days, with solution renewing every 3 days. After this period, final measurements of color and roughness were made and the data were submitted to statistical analyses one-way ANOVA and Tukey Test.

**Results:** Red wine group showed highest values of ΔE with statistical difference to the other groups, and water showed lowest values of ΔE, without difference to Coke. In relation to roughness, water showed the highest Ra means, with statistical differences to red wine and Ayahuasca, and Coke showed no statistical differences from anyone beverage.

**Conclusion:** The studied composite is highly susceptible to water sorption, and even that Ayahuasca has some influence, is similar to usual beverages.

#### INFLUENCE OF BIOACTIVE PARTICLES AND ONIUM SALT ON PHYSICAL-CHEMICAL PROPERTIES OF EXPERIMENTAL INFILTRANTS

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**Aim:** Evaluate the influence of diphenyliodonium hexafluorophosphate(DPI) and the addition of 58S bioactive glass(BAG) and hydroxyapatite nanoparticles(HAP) on physical properties and bioactivity of experimental infiltrants.

**Method:** Six experimental groups and one commercial control (Icon) were studied. The experimental groups were composed by TEGDMA, Bis-EMA, Camphorquinone and



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dimethylaminoethyl benzoate. After manipulation of the blends, DPI, BAG or HAP were added or not. The crystallinity of the infiltrants was qualitatively evaluated after immersion in SBF (Stimulated Body Fluid) at different periods by means of X-ray diffraction (XRD), FT-IR spectrometry and Scanning electron microscopy for particles characterization (n=1). Degree of conversion (DC, n=3), water sorption (WS) and solubility (SL) (n=10) and viscosity (n=3) were performed. Statistical comparisons between groups were made using analysis of variance and Tukey's test with significance of 5%.

**Results:** After all periods of immersion in the SBF, no crystallinity was detected in the groups with BAG. XRD and FT-IR demonstrated presence of HAP crystalline phase in HAP groups. Icon and group B-BAG showed a lower DC in 40s (<50%), while the presence of HAP increased these values. HAP groups showed higher viscosity, but DPI decreased the viscosity for groups with particles. The highest WS was presented by Icon. There were no statistical differences for SL values.

**Conclusion:** The addition of 10% BAG does not improve the physical-chemical properties studied nor produce bioactive effect. DPI reduces the viscosity presented by particles addition besides attenuate the DC decreasing promoted by BAG addition.

#### INFLUENCE OF ETHANOL WET BONDING WITH CROSS-LINKING AGENTS ON DENTIN COLLAGEN

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**Aim:** To evaluate the association between Ethanol Wet Bonding (EWB) and collagen cross-linking agents (CLA) on the mechanical properties of collagen and on the physical chemical properties of an etch-and-rise adhesive to dentin.

**Method:** Demineralized dentin bars (n=10) were immersed, for 1 min or 1 h, according to the respective groups: distilled water control (WC); absolute ethanol (EA); absolute ethanol with the incorporation of proanthocyanidins 6,5% (PAC+AE); absolute ethanol with the incorporation of 1-ethyl-3- (3-dimethylaminopropyl) carbodiimide 0.3M (EDC+EA); absolute ethanol with the incorporation of 5% glutaraldehyde (GA+AE). All as solutions used as dentin primer per 1-min and 1- hour of application, for 3-point bending test was performed to evaluate the modulus of elasticity [ME] and mass change [MC] of collagen treated with the respective solutions.

**Results:** After 1 min and 1 h of application, it was observed that WC group showed the lowest ME (P<0,05). The groups EDC+AE, GA+AE and AE presented a better ME with one hour of application, since the PAC+AE and WC were statistically similar.

**Conclusion:** The association of EWB technique and CLA improved the mechanical properties of the collagen.

#### INFLUENCE OF EXTRACELLULAR MATRIX PROTEINS IN BIOFILM FORMATION BY ENTEROCOCCUS FAECALIS STRAINS OF ENDODONTIC ORIGIN

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SHCOOL OF DENTISTRY OF RIO DE JANEIRO STATE UNIVERSITY - UERJ

**Aim:** Surface proteins in the extracellular matrix composition of dentin are relevant for bacterial adhesion. The aim of this study was to investigate the influence of the extracellular matrix proteins type I collagen (COL I), fibronectin (FN) and fibrinogen (FBG) in biofilm formation by different Enterococcus faecalis strains isolated from primary endodontic infection.

**Method:** Twenty-three E. faecalis were characterized by polymerase chain reaction. To evaluate biofilm formation, 96 well polystyrene plates were coated with COL I, FN or FBG. 50µL of each bacterial suspension (1.5 x 10<sup>8</sup> bac/mL) were transferred to the plates. Non-coated plates with bacterial suspension were used as control. The quantification of biofilm formation amongst the strains was compared using ANOVA with post-hoc Tukey HSD test. Student's t test was used to compare the means of biofilm formation (OD) (P<0.05).

**Results:** All strains were identified genetically as E. faecalis and 70.8% showed amplification for the ace genes. COL I and FN were capable to induce biofilm formation to a few strains. For most of the strains COL I and FN exerted a negative influence on biofilm formation and FBG did not interfere for the majority, but exerted a negative influence on two strains (8.33%).

**Conclusion:** There is no correlation between the presence of ace gene and biofilm formation by endodontic E. faecalis strains. Although the majority of the strains had reduced biofilm formation in the presence of extracellular matrix dentin proteins, but in the presence of COL I, 8.33% of strains had increased a biofilm.

#### INFLUENCE OF LIGHT CURED AND TRANSLUCENCY ON THE MICRO-SHEAR BOND STRENGTH

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**Aim:** The objective of this study was to evaluate the effect of two activation devices (monowave versus polywave) and two translucency (MT-medium translucency vs LT-low translucency) of the IPS e.max Press ceramics (Ivoclar Vivadent) on the microshear bond strength (µSBS) of resin cement Variolink Esthetic LC.

**Method:** Twenty ceramic discs (Shade A1; 12.0 mm diameter x 2.0 mm thickness) were separated into 2 groups (n=10) according to the curing units (LCU): Radii-Cal (monowave; SDI Limited Raddi) and G2 (polywave Bluephase; Ivoclar Vivadent). Then, these groups were subdivided into 2 groups (n=5) according to the translucency of ceramics. One side of the disc was finished, polished and glazed. Another side of the disc was etched with hydrofluoric acid 10% for 20 seconds, washed with water and dried for 60 seconds with air jet, followed by the

application of a thin layer of silane (3M ESPE) for 1 minute. Specimens were subjected to µSBS at a crosshead speed of 1.0 mm/minute. Data were analyzed with ANOVA/Tukey's test (α=0.05).

**Results:** The µSBS of the MT were 27.2 ± 6.1 MPa for Radii and 33.7 ± 7.1 MPa (Bluephase). LT values (23.6 ± 6.2 MPa and 33.2 ± 3.4 MPa - Radii and Bluephase, respectively) were statistically similar to MT.

**Conclusion:** Bluephase G2 showed statistically significant higher values of µSBS (33.5 ± 5.5) compared to the Radii-Cal (25.4 ± 6.3), regardless of translucency. The µSBS was significantly influenced by LCU type. No difference was found between medium and low translucency ceramic.

#### INFLUENCE OF MULTIPLE PEAK LED UNIT BEAM HOMOGENIZATION TIP ON MICROHARDNESS OF DIFFERENT RESIN COMPOSITES

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**Aim:** To evaluate the effect of curing light unit (LCU) guide on the top and bottom Knoop microhardness (KHN) of resin-based composites (RBC).

**Method:** A polywave LED (light emitting diode) LCU (Bluephase Style, Ivoclar Vivadent AG) was used with a regular (RT) and a homogenizer (HT) light guide. Two conventional (Herculite Ultra (HER); Tetric EvoCeram (TEC)) and two bulk-fill RBC (SonicFill (SOF); Tetric EvoCeram Bulk Fill (TBF)) were tested. Disk-shaped samples (10mm Ø), 2-mm thick for conventional RBCs and 4-mm thick for bulk-fill RBCs were prepared and light cured according to manufacturer instructions. Measurements of KHN were obtained on the top and bottom of each specimen, at the output of the three LED chips. Beam profile analysis using both light guides was performed. Microhardness of each composite was analyzed using 3-way ANOVA and Tukey HSD post-hoc test (α= 0.05).

**Results:** Beam profile images showed better light distribution with the HT guide. Use of the HT decreased KHN of HER at the locations of the blue LED chips at bottom, but had no effect on the top surface. For TEC, use of HT increased KHN at the top. Use of the HT increased KHN of SOF at locations of one blue and the violet LED chips at the bottom surface. For TBF, HT increased KHN at all top surface locations. All RBC showed higher mean KHN at the top than at the bottom surfaces. In general, all composites presented higher KHN at the blue LED areas, regardless of the surface or used tip.

**Conclusion:** Results suggest that the HT significantly increased KHN at the top of composites containing alternative photoinitiators but the effect is not observed at the bottom.

#### INFLUENCE OF NANOTECHNOLOGY ON OPTICAL PROPERTIES OF CONVENTIONAL GLASS IONOMER CEMENT

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SÃO LEOPOLDO MANDIC

**Aim:** The present in vitro study investigated the optical properties of glass ionomer conventional high viscosity (GIC) added with TiO<sub>2</sub> nanotubes.

**Method:** TiO<sub>2</sub> nanotubes (≈20 nm in size and ≈10 nm in diameter, synthesized by the alkaline method) were manually added to the GIC powder (Ketac Molar EasyMix™ = KM) at concentrations of 3%; 5%; and 7% by weight, whereas unblended powder was used as control. Specimens (1x5mm) were prepared for colorimetric evaluation (n=6 per group) using spectrophotometer (VITA Easyshade -CIE Lab system) with a white background in an environment with standardized lighting. After automatic calibration of the apparatus, three consecutive measurements of each specimen were made. The tip was perpendicularly placed on the material. Values of L\* = luminosity, a\* = variation on the green-red axis and b\* = variation on the blue-yellow axis. Data were submitted to the Shapiro-Wilk, ANOVA and Tukey tests (α = 0.05).

**Results:** Considering L\*, GIC with 3% showed higher values than 5% and 7% of TiO<sub>2</sub>. It was observed that the higher the concentration of TiO<sub>2</sub> in the GIC, the more opaque the specimen becomes. There was no difference in color saturation (a\*) (p≥0.05). For b\*, GIC with 5% and 7% TiO<sub>2</sub> presented lower values than the control and GIC with 3% (p≤0.05), resulting in specimen with lower yellow intensity.

**Conclusion:** It can be concluded that nanotechnology, independent of its concentration associated with the GIC, modifies the optical characteristics by changing the color of the material with a decrease in luminosity and intensity of the color yellow.

#### INFLUENCE OF NATROSOL GEL IN CHLORHEXIDINE SONIC/ULTRASONIC ACTIVATION IN INFECTED ROOT CANAL DENTIN

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**Aim:** To verify the influence of chlorhexidine (CHX) vehicles during sonic/ultrasonic activation on the E. faecalis (E.f.) reduction in infected root canal dentin (IRCD).

**Method:** 120 lower premolars were standardized in 15mm, contaminated with E. f. and divided into 12 groups (Gr) according to the irrigation technique (IT) used [conventional irrigation (CI), sonic activation (SA) and ultrasonic activation (USA)], and to the different CHX presentation forms [CHX 2% gel (CHX-G), CHX solution (CHX-sol)]. Saline solution (SS) and 1% natrosol gel (NG) were used as controls. Bacterial samples of the IRCD were collected before/after irrigation. The samples were inoculated, incubated and the colony forming units (CFU) counted. After, 3 specimens from each root canal third (RCT), were analyzed by



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Confocal Laser Scanning Microscopy (CLSM). Friedman/Wilcoxon tests compared the CFU. Kruskal-Wallis tests were used for quantification of viable cells (VC). Mann-Whitney U-test was used to compare IT and RCT

**Results:** CFU results showed that the SA and USA were more effective than CI for all tested substances. USA were more effective than SA ( $p < 0.05$ ) in CHX-G, but no difference was found between SA and USA for CHX-sol and controls ( $p < 0.05$ ). CLSM results showed that CI with SS or GN still left many VC in the RCT. USA and SA presented better results than CI in all Gr and RCT ( $p < 0.05$ ). USA obtained better results than with SA using CHX-G in all RCT ( $p < 0.05$ ), with no difference with CHX-sol and controls.

**Conclusion:** It was concluded that the gel presentation form influenced the SA results. The activation of CHX optimized its action and promoted a greater cleaning of the IRCD.

#### INFLUENCE OF PARAFUNCTIONAL HABITS ON FRACTURE OF COMPOSITE RESIN RESTORATIONS

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**Aim:** This research aimed to perform a survey of parafunctional habits and verify its influence on fractures of resin restorations composed of patients seen at the University Dental Clinic (COU) of the State University of Londrina (UEL).

**Method:** All patients signed a Waiver of Informed Consent and answered a questionnaire where personal information and the existing parafunctional habits were collected, then the patients underwent clinical evaluation of the restoration by calibrated evaluators, weighted Kappa of 0.87. The data obtained were tabulated and analyzed through descriptive statistics, COUNTIF function.

**Results:** In total, 205 patients participated in the study, which amounted to 934 restorations evaluated. The patients with parafunctional habits were 83 (40.5%), of which 54 (65.1%) were women and 29 (34.9%) were men. Out of the total number of restorations evaluated, 366 were on patients with parafunctional habits; of these, 26.5% had total or partial fracture, being class V the most affected and bruxism the main related habit. From the 568 restorations on patients with no habits, 18.8% had fractures, 7.7% fewer fractures in relation to patients with habits.

**Conclusion:** Based on the results found, it can be inferred that bruxism was the most incident parafunctional habit, influencing the percentage of fractured restorations, with class V restorations being the most affected.

#### INFLUENCE OF PHOSPHOR PLATE-BASED RADIOGRAPHIC IMAGE SPECIFICATIONS ON THE FRACTAL DIMENSION ANALYSIS OF ALVEOLAR BONE

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**Aim:** To evaluate the influence of spatial resolution, bit depth and enhancement filters on the fractal dimension (FD) of phosphor plate-based radiographic images of alveolar bone.

**Method:** Periapical radiographs of dry human mandibles were obtained using the VistaScan system. The phosphor plates were scanned under two spatial resolutions - 1270 dpi and 2000 dpi - and the original acquisition subjected to three image enhancement filters: Fine, Endo, Perio. All images were exported in 8- and 16-bits. A region-of-interest was selected on the alveolar trabecular bone and the FD value was calculated by means of the differential box-counting method, using the FracLac plugin from the ImageJ software. The multivariate ANOVA test followed by post-hoc Tukey compared the FD values obtained from radiographic images with different specifications ( $\alpha = 0.05$ ).

**Results:** No significant difference was observed between the FD values obtained from 8- and 16-bit images ( $p > 0.05$ ). Except for the Perio filter, FD values were significantly higher for images at 1270 dpi ( $p \leq 0.05$ ). Regarding the enhancement conditions, FD values were significantly greater for the Perio filter, followed by the Endo filter ( $p \leq 0.05$ ). The Fine filter had the significantly lowest FD values and did not differ significantly from the original image ( $p > 0.05$ ).

**Conclusion:** Fractal dimension analysis of phosphor plate-based radiographic images of alveolar bone is influenced by the spatial resolution and some digital enhancement filters; therefore, image specifications should be standardized for this purpose.

#### INFLUENCE OF ROOT DENTIN CONTAMINATION IN PULP REGENERATION PROCESS: A LITERATURA REVIEW

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**Aim:** Regenerative endodontics aims to reestablish pulp vitality and to support the root formation process in young permanent teeth, being a conservative alternative to conventional endodontic treatment. For this, the knowledge of microorganisms present in root canal system is important to establish the disinfection protocol for pulp regeneration. The objective of the study was to review the literature on the influence of microbial contamination on root canals and disinfection processes to achieve pulp regeneration.

**Method:** Scientific articles were selected from PubMed and Portal Periodic CAPES database, using the following keywords: Chlorhexidine, Sodium Hypochlorite, Regeneration. The research was limited to studies written in Portuguese and English between 2000 and 2018.

**Results:** Twenty-three studies were included in this review. It was found that the use of irrigants and intracanal medication is fundamental for the pulp regeneration process, since success depends on the absence of microbial contamination for the process to occur. The presence of the infection can negatively interfere with tissue formation and cause damage to stem cells. Still, for the pulp regeneration, it is necessary the presence of stem cells, scaffolds and growth factors.

**Conclusion:** Based on the results of the review, it was concluded that despite studies in the

literature, questions regarding irrigants, intracanal medications and time of clinical follow-up have not yet been fully elucidated, making pulp regeneration a challenge for clinical practice.

#### INFLUENCE OF SONIC DELIVERY OF BULK FILL COMPOSITES ON THE BOND STRENGTH OF CLASS I RESTORATIONS

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**Aim:** To evaluate, in vitro, the influence of sonic delivery on the bond strength (BS) of bulk fill and conventional composites.

**Method:** 56 premolars were used, Class I cavity preparations were performed (4x4x3mm and factor C=5). Cavities were restored with composite resins using different insertion techniques (manual, sonic and incremental), forming 7 experimental groups ( $n = 8$  each): G1-Tetric N-Ceram Bulk Fill manual, G2-Tetric N-Ceram sonic, G3-SonicFill manual, G4-SonicFill sonic, G5-Z350XT manual, G6-Z350XT sonic and G7-Z350XT incremental. After 24 hours, teeth were cut down to obtain toothpicks and the microtensile test was carried out on the universal test machine (INSTRON). The fractures types were evaluated with in a stereomicroscope.

**Results:** ANOVA statistical tests two-way and post-hoc Tukey (5%) showed that there was a statistically significant difference between the three composite and different insertion techniques ( $p < 0.000$ ). The single / manual Z350 XT resin presented a lower average bond strength than the other groups, the sonic insertion didn't seem to influence the behavior of Tetric N-Ceram and SonicFill. There was a predominance of adhesive fractures for all the resins used.

**Conclusion:** The sonic delivery doesn't influence the BS of the bulk fill resins tested.

#### INFLUENCE OF SURFACE TREATMENTS ON SHEAR BOND STRENGTH OF CAD-CAM HYBRID COMPOSITES AFTER 1 YEAR OF STORAGE

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**Aim:** This study evaluated the shear bond strength (SBS) and failure mode of CAD-CAM nanoceramic resin (NCR- Lava Ultimate, 3M Oral Care) and polymer-infiltrated ceramic-network (PICN - Vita Enamic, Vita) under different surface treatments after one year of storage.

**Method:** Forty blocks (4x4x1.5mm) of each material were obtained and submitted to the treatments ( $n=10$ ): (Sand) Sandblasting with  $Al_2O_3$ ; (Ac5%) 5% hydrofluoric acid etching; (Ac10%) 10% hydrofluoric acid etching; (Sand/Sil) Sandblasting with  $Al_2O_3$  and silanization. Universal bond was applied on the surface of all specimens, followed by the bonding of four cylinders of resin cement. The SBS of two cylinders was evaluated in an universal testing machine 24 hours after the restorative procedure, and the remaining specimens were stored for 1 year before testing. Failure mode was observed by means of scanning electron microscopy.

**Results:** Three-way ANOVA and Tukey's test revealed that SBS of NCR was statistically greater when treated with Sand, Ac5% and Ac10% after 24 h ( $p < 0.05$ ). At the same time point, Ac5% and Ac10% treatments led to greater SBS for PICN ( $p < 0.05$ ). After one year of storage, while the SBS of NCR was maintained ( $p > 0.05$ ), the values for PICN were significantly decreased when treated with Ac5%, Ac10% and Sand/Sil ( $p < 0.05$ ). Failure mode was predominantly mixed (61.6%) after 24 h and adhesive (65.9%) one year after the restorative procedures. However, NCR exhibited predominance of mixed failure (65.2%) under Ac5% treatment.

**Conclusion:** The shear bond strength of CAD-CAM hybrid composites was influenced by the surface treatments and it was stable after one year of storage only for PICN.

#### INFLUENCE OF THE INCORPORATION OF BENZOPHENONE ON THE SURFACE INTEGRITY OF GLASS IONOMER CEMENT

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**Aim:** This study evaluated the effect of the incorporation of benzophenone on the surface roughness and hardness after toothbrushing simulation of conventional glass ionomer cement (GIC).

**Method:** Cylindrical-shaped specimens (5 mm x 2 mm;  $n = 10$ /group) of the GIC containing 0.5  $\mu M$  (E0.5), 25  $\mu M$  (E25) and 50  $\mu M$  (E50) of a benzophenone were compared to GIC (C) alone and subjected to the following tests: surface roughness, hardness and, mechanical degradation. The roughness analysis was performed prior to the hardness assessment using a roughness-measuring instrument at a constant speed of 0.5 mm/sec with a load of 0.7 mN. Then, hardness test was carried out with a microhardness tester by using a Knoop indenter, with a load of 25 g for 15 s. Measurements of roughness and hardness were recorded at baseline and after 60,000 mechanical cycles under 200 gF load of simulated abrasion using toothbrush and dentifrice slurry. Specimens were then evaluated using a Scanning Electron Microscopy (SEM). Data were submitted to Levene, Kruskal-Wallis and Mann-Whitney Tests ( $p < 0.05$ ).

**Results:** After brushing, the hardness increased in all experimental groups as benzophenone concentration increased (C-51.4; E0.5-67.5; E25-78.5; E50-95.02 KHN). Roughness was significantly increased after mechanical abrasion but not proportionally to the concentration of the benzophenone (C-0.5; E0.5-0.6; E25-1.3; E50-1.2 m).

**Conclusion:** Structural changes were detected on SEM micrographs of all groups after

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brushing. The incorporation of benzophenone to GIC enhances the hardness but the surface roughness was negatively affected.

#### INFLUENCE OF THE RS6667202 SNP ON IL-10 LEVELS IN GINGIVAL CREVICULAR FLUID OF PATIENTS WITH AGGRESSIVE PERIODONTITIS

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**Aim:** Genetic factors influence the development and progression of aggressive periodontitis (AgP) by promoting changes in the immune-inflammatory response of the host. Recently, the single nucleotide polymorphism (SNP) rs6667202, located in the upstream region of the interleukin-10 gene (IL10), was associated as a protector against AgP in a Brazilian population. However, the impact on local production of this cytokine has not been investigated to date. Thus, the objective of this study was to evaluate the possible effect of this SNP on the levels of IL-10 in the gingival crevicular fluid (GCF) in patients with AgP.

**Method:** Fifteen patients diagnosed with AgP and with the presence of SNPs rs6667202 and fifteen patients also diagnosed with AgP, but without this SNP, were evaluated through genotyping by means of PCR with Taqman probes. Four sites of GFC were collected in each patient, two sites with probing depth pockets (PDP)  $\geq 7$  mm and bleeding probing, and two healthy sites with PDP  $\leq 3$  mm. The IL-10 quantification was performed using the Luminex/Magpix system through parametric statistical tests (t Student).

**Results:** In deep pockets, the presence of the SNP promoted an increase of IL-10 in the GFC when compared to individuals without it ( $0.01 + 0.01$  and  $0.005 + 0.003$ , respectively,  $p = 0.03$ ). In shallow pockets, there was no significant difference ( $p > 0.05$ ).

**Conclusion:** It can be concluded, therefore, that the SNP rs6667202 promotes an increase in IL-10 levels, justifying its protective character for the occurrence of aggressive periodontitis.

#### INFORTUNISTICS: OCCUPATIONAL DISEASES AND ACCIDENTS IN DENTISTS, STUDENTS AND DENTAL AUXILIARIES

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**Aim:** The national and international literature was Revised between January 2008 and December 2018 (White-Pubmed, Lilacs, Scielo, Google academic and grey literature) analyzing the main occupational diseases, as well as accidents in Dentists (CDs), Dentistry Students and dental auxiliaries.

**Method:** The most referenced pathologies were divided into: Communicable Chronicles with 7 articles reviewed, non-communicable with 96 reviews, emotional background 9 and allergens 19. As communicable, infectious diseases are infected by viruses (hepatitis, HIV, H1N1, Herpes types I and II), by bacteria (syphilis, tuberculosis, gonorrhea). As for chronic non-communicable diseases, type II Diabetes, Hypertension, obesity, locomotor disorders (postural disturbances, RSI/WMSD), respiratory and circulatory conditions, auditory and ocular affections are considered. ADHD, stress, depression and Burnout Syndrome were Also found, among others. The cases of allergies are caused by Latex, chemicals (fumes, powders, solvents, among others). The most common accident was with piercing-cutting instruments.

**Results:** This is a subject of great relevance and significant value for Dentistry, because it generates an increase in the number of absenteeism type I and type II. Such situations bring loss of labor capacity/economic/social/pension.

**Conclusion:** The accumulated knowledge of forensic infotunistics today allows the health professional to anticipate environmental risks and create powerfully preventative preserving the health of the professional and his assistants in the workplace.

#### INTERACTIONS AMONG GENES ASSOCIATED WITH THE NEUTRALIZATION OF OXIDATIVE STRESS IN THE RISK OF NONSYNDROMIC ORAL CLEFTS

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**Aim:** The aim of study was to evaluated the influence of single-nucleotide polymorphisms (SNP) in genes associated with neutralization of reactive oxygen species (ROS), particularly, superoxide dismutase (SOD) and paraoxonase (PON), in the risk of nonsyndromic oral cleft (NOC) in the Brazilian population.

**Method:** In this multicenter study, the association of 28 single-nucleotide polymorphisms (SNPs) distributed in PON1, PON2, PON3, SOD1, SOD2 and SOD3 were initially analyzed by transmission disequilibrium test (TDT) in 325 NOC case-parent trios, and the SNPs showing significant SNP-SNP interaction were subsequently studied in a structured case-control analysis with 1,588 subjects (722 NOC and 866 controls) based on the individual ancestry proportions.

**Results:** SNP-SNP interactions between 10 SNPs in PON1, PON2 and PON3 demonstrated significant associations with NOC risk after adjustment for multiple tests (both Bonferroni assumption and 10,000 permutation test). Further logistic regression analysis revealed the individual association of rs2237583 in PON1 with NOC, while rs3917490 showed a significant association only in the sample composed of patients displaying high African ancestry.

**Conclusion:** Our results reveal associations between rs2237583 and rs3917490 in PON1 and SNP-SNP interactions in PON1, PON2 and PON3 in the risk of NOC in the Brazilian population.

#### INTRAPULPAL CONCENTRATION OF HYDROGEN PEROXIDE OF TEETH RESTORADED WITH CONVENTIONAL AND BULK FILL BIOACTIVE COMPOSITES

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**Aim:** This study evaluated the hydrogen peroxide (HP) concentration into the pulp chamber of teeth restored with conventional and bulk-fill bioactive composites.

**Method:** Standard cavities were prepared on the buccal surface of bovine incisors crowns and restored according to experimental groups ( $n = 20$ ): bioactive conventional composite (BII, Beautifil II), bioactive bulk-fill composite (AC, Active Bioactive), a positive bioactive material control (RMGI - resin modified glass-ionomer) and two negative controls, a conventional composite (FZ, Filtek Z350) and a bulk-fill composite (FB, Filtek Bulk). The adhesive restorations were exposed to 9.5% HP bleaching. Before bleaching, an acetate buffer solution was inserted into the pulp chamber and after bleaching, this solution was transferred to test tubes containing leucocrystal violet and peroxidase. The HP concentration in  $\mu\text{m}$  in the solution, was analyzed by the spectrophotometric method. Data were statistically analyzed by one-way ANOVA and Tukey test ( $\alpha = 0.05$ ).

**Results:** No significant difference in HP intrapulpal concentration was observed among groups ( $p > 0.05$ ) when restorations were exposed to 9.5% HP.

**Conclusion:** In conclusion, the intra-pulp concentration of hydrogen peroxide was similar among groups submitted to low-concentrated agents, regardless the restorative materials.

#### INVESTIGATION OF RED COMPLEX BACTERIA IN TEETH WITH COMBINED ENDO-PERIODONTAL LESION

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**Aim:** Combined endo-periodontal lesions are defined as the pathological changes affecting the pulp and periodontal tissue in the same tooth. The red complex (RCX) is a group of Gram-negative anaerobic bacteria, considered periodontal pathogens, including Porphyromonas gingivalis (Pg), Treponema denticola, (Td) and Tannerella forsythia (Tf). The aim of this study was to investigate the presence of Red Complex bacteria in root canals (RC's) and periodontal pockets (PP's) of teeth with combined endo-periodontal lesions.

**Method:** Clinical samples were collected from the RC's and PP's of 14 teeth with pulp necrosis and associated periodontal pocket. The microorganisms were identified through Nested-PCR, using species-specific primers for Pg, Td and Tf.

**Results:** In the RC's samples, the most frequently detected Red Complex bacteria was Td (7/14 - 50%), followed by Pg and Tf (3/14 - 21.4%). In the PP's Td was found in 13/14 cases (92.8), Tf in 11/14 cases (78.5%) and Pg in 7/14 (50%).

**Conclusion:** Based on the methodology used and the results obtained, it was possible to conclude that bacteria from the Red Complex are present in endo-periodontal lesions, being more abundant in the periodontal pockets. Support: FAPESP 2014/27365-1; 2015/23479-5, CNPq 308162/2014-5 and CAPES

#### IODINE-BASED CONTRAST IN MICRO-CT (DICECT) FOR STUDYING MASTICATORY MUSCLE MORPHOLOGY OF WISTAR RATS

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**Aim:** The aim of this study was to reproduce the 3-D morphology of masticatory muscles of Wistar rats, using the iodine-based contrast in micro-CT scan (diceCT).

**Method:** One male Wistar rats aged two months was used in this study. After euthanasia, the head was fixed in formalin solution 10%. For the dissection, the head was washed by deionized water, which the masticatory muscles were preserved after skin remove. The piece were stored in iodine-based contrast (I2KI) with 10% concentration during 1 month. Then, a microCT scan were performed and the images presented 19.41  $\mu\text{m}$  pixel size configuration. The NRecon software was used for grayscale image reconstruction and, then, imported into the Materialise Mimics v18 software for image segmentation. From the segmentation, the three-dimensional surface of each muscle were constructed for the analysis of shape, origin and insertion.

**Results:** The results presented the regions of origin located on the surface of different skull bones involving the maxilla, zygomatic, sphenoid and temporal bone. The insertions were located on the surface of the mandible. From the 3D surface as well as the microCT images, it was also possible to determine the direction of muscular fibers.

**Conclusion:** In conclusion, the anatomical characterization of masticatory muscles in Wistar rats was possible through the iodine-based contrast, which changed the muscular structure density.

#### IS ACTIVATED CHARCOAL PASTE EFFECTIVE AND SAFE FOR ENAMEL BLEACHING?

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**Aim:** To evaluate the bleaching effect of an activated charcoal paste (COAL - Carvvo) combined with conventional (CTP - Pro-Saúde, Oral-B) or whitening (WTP - Luminous Whitening, Colgate) toothpastes on enamel color change ( $\Delta E$ ) and surface roughness (Ra), in comparison to at-home bleaching with carbamide peroxide (CP (16% Whiteness, FGM).

**Method:** Ninety enamel blocks were stained with black tea and treated with ( $n=10$ ): COAL/CTP; COAL/WTP; COAL; CP/CTP; CP/WTP; CP; CTP; WTP; C - control, without treatment. COAL, CTP and WTP were applied with a brushing machine for 824 soft toothbrush head movements. CP bleaching was carried out for 4 h during 14 days before brushing. Color

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alteration (E) was determined by means of spectrophotometer according to CIE Lab\* parameters and surface roughness (Ra,  $\mu\text{m}$ ), with a roughness tester. Specimens were stored in artificial saliva among sessions and analyzed after staining (T0) and 24 hours after treatments (TB). E values were submitted to two-way ANOVA and Tukey's test and Ra, to Kruskal-Wallis and Wilcoxon tests ( $\alpha=5\%$ ).

**Results:** COAL alone produced greater E than C ( $p=0.010$ ), but the combination of COAL with CTP and WTP did not enhance E ( $p>0.05$ ). CP protocols resulted in greater E than COAL and/or toothpastes ( $p<0.05$ ). COAL alone increased enamel roughness ( $p<0.000$ ), but roughness was similar to CP-bleached enamel ( $p=0.529$ ). The combination of COAL with toothpastes did not increase enamel roughness.

**Conclusion:** The charcoal paste was unable to promote enamel bleaching as carbamide peroxide agent, regardless the combination of conventional or whitening toothpaste.

#### KNOWLEDGE ABOUT THE EMERGENCY MANAGEMENT OF DENTAL TRAUMA AMONG PUBLIC SCHOOLS TEACHERS OF PIRACICABA, SP, BRAZIL

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**Aim:** The aim of this study was evaluated the knowledge of public schools teachers of Piracicaba, SP, Brazil regarding emergency management in cases of school accidents can result in traumatic dental injuries.

**Method:** This research was done at the Trauma Project of Piracicaba Dental School, State University of Campinas, during the Dental Meeting of Piracicaba in the years of 2017 and 2018. Specific questionnaires were applied to the teachers participating in the project. A lecture about dental trauma was performed after the application of questionnaires.

**Results:** The total number of teachers has answered the questionnaires is 125 and the age ranged between 18 and 66 years old. Most of the participants received first aid training (66.4%), 92% did not know about dental avulsion, 64.8% forward the students to the directors in cases of dental trauma. If the tooth fracture, 39.2% keep wrap in a paper and 82.4% deliver the fragment to a dentist. In avulsed teeth, 93.6% do not feel comfortable to do the reimplantation, 27.2% answered the best media is wrap in a paper, plastic or handkerchief, 54.4% clean the tooth in tap water without instruments, and 64% deliver the tooth to a dentist. It can be concluded that most of the teachers do not know what to do in traumatic dental injuries.

**Conclusion:** Education, such as lectures, folders, and training in dental trauma should be provided for the public school teachers.

#### KNOWLEDGE OF THE LAST YEAR STUDENTS OF THE PHYSICAL EDUCATION COURSE OF FHO/UNIARARAS ON DENTAL AVULSION: PILOT STUDY

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HERMÍNIO OMETTO - UNIARARAS

**Aim:** This study aimed to evaluate the knowledge of the final students of the Physical Education course of FHO/UNIARARAS on dental avulsion (DA) in deciduous (DT) and permanent tooth (PT).

**Method:** The students were divided in 2 groups: lecture (LG) or information leaflet (ILG). A questionnaire was applied before and after a lecture or information leaflet. Both groups received the same information on dental avulsion.

**Results:** A total of 58 students participated of this study: 26 (LG) and 32 (ILG). The first questionnaire results were respectively for LG and ILG: knew the definition of DA (57.7%; 46.8%); to do not perform reimplantation of DT (65.4%; 34.3%); knew how to manipulate the avulsed PT (61.5%; 28.1%); knew how to clean the avulsed PT (80.8%; 40.6%); the ideal treatment is the immediate reimplantation for PT (30.7%; 3.1%); the ideal time to seek care after dental avulsion of PT (15.4%; 0%); knew how to store the avulsed PT correctly (53.8%; 18.7%). The second questionnaire results were respectively for LG and ILG: knew the definition of DA (92.3%; 100%); to do not perform reimplantation of DT (92.3%; 75%); knew how to manipulate the avulsed PT (100%; 78.1%); knew how to clean the avulsed PT (100%; 100%); the ideal treatment is the immediate reimplantation for PT (96.1%; 100%); the ideal time to seek care after dental avulsion of PT (96.1%; 84.3%); knew how to store the avulsed PT correctly (100%; 93.7%).

**Conclusion:** The initial knowledge on dental avulsion was low in both groups, however, it improved soon after the lecture or information leaflet. Nevertheless, there is a need to evaluate the retention of this knowledge over time.

#### LOADING PROTOCOLS FOR MANDIBULAR OVERDENTURES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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**Aim:** In edentulous patients receiving mandibular overdentures, what are the clinical effects of immediate (ILP)/ early (ELP) loading protocols compared to conventional loading protocol (CLP)?

**Method:** Databases were screened for relevant literature, according to the PRISMA guidelines. Prospective (randomized and non-randomized) studies were included based on the PICO strategy. Meta-analysis were performed for the outcomes - success, survival, marginal bone loss, bleeding on probing (BOP), probing depth (PD), plaque index (PI), and implant stability quotient (ISQ) - and their sub-groups according to the follow-up. Publication bias was detected through Egger test. The evidence was quality-tested using GRADE

approach.

**Results:** 14,234 references were identified and 7,252 remained after duplicates removal. 23 studies were included for qualitative and 22 for quantitative synthesis. Meta-analysis showed statistical difference for PI at 12 months (SMD 0.284 [0.022, 0.545]  $p=0.033$ ,  $I^2=35\%$ ), PD at 36 months (SMD 0.460 [0.098, 0.823]  $p=0.013$ ,  $I^2=0\%$ ) and on pooled results for PI (SMD 0.157 [0.031, 0.284]  $p=0.015$ ,  $I^2=18\%$ ) in which the CLP presented lower indices compared to ILP/ ELP. ISQ presented statistical difference only at 3 months (SMD 0.602 [0.309, 0.895]  $p=0.0$ ,  $I^2=0\%$ ) with higher values for the CLP. For the others parameters statistical difference ( $p>0.05$ ) was not found. Certainty of evidence was downgraded as low only for BOP. Publication bias was not found.

**Conclusion:** Immediate/ early loading protocol for mandibular overdentures presented as a well-established treatment modality and is worthy of consideration in clinical practice.

#### MAIN CAUSE OF FAILURE OF COMPOSITE RESIN RESTORATIONS, CLASSES I AND II OF BLACK, FROM UEL

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**Aim:** The objective of this research was to conduct a survey regarding the main cause of failure of composite resin restorations, classes I and II of Black, and which presents the highest number of indication of substitution, of patients who were attended at the University Dental Clinic (COU) of State University of Londrina (UEL).

**Method:** All the patients evaluated answered a questionnaire about their personal information. Then, they underwent clinical evaluation of the restoration by calibrated evaluators, obtaining a weighted Kappa of 0.87. The collected data were analyzed through descriptive statistics, Cont IF function, and the results expressed in table forms.

**Results:** 205 patients participated in the study, 136 women (66.3%) and 69 men (33.7%). A total of 301 class I and II restorations were found and evaluated using the Ryge criteria (USPHS). More than half (55.5%) of these restorations were in need of replacements. The number of failures of class II restorations (62.7%) was considerably higher in relation to class I restorations (39.1%). The main causes of restoration failures in both classes were: secondary caries (46.7%), followed by fracture (19.2%) and marginal integrity (18.0%).

**Conclusion:** It was concluded that secondary caries was the main cause of failure of the restorations and that class II restorations had a greater number of substitution indications.

#### MAIN ORAL CHANGES IN DENTAL ERUPTION OF DECIDUOUS TEETH - LITERATURE REVIEW

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**Aim:** During the dental eruption process, some signs and symptoms may manifest. But there are controversies about the direct relation between the respective manifestations, if these are coincidences or consequences of the eruption. The objective of study was to review the literature on the main manifestations at the time of deciduous eruption and which local or systemic factors are involved.

**Method:** The search was performed in the Scielo and PubMed databases, with no deadline until 2018

**Results:** The most frequent manifestations were gingival inflammation, ulcers, cyst of eruption, swelling, gingival pruritus, skin changes, excessive salivation, irritability, lack of appetite, fever, diarrhea. Those related to dental eruption are: gingival inflammation, irritability, lack of appetite and increase in body temperature not exceeding 37.5 degrees. The causes of other manifestations mentioned are systemic and can coincide with the period of the dental eruption.

**Conclusion:** Symptoms that occur during the dental eruption may be related to health factors. Parents knowledge, perceptions, and beliefs may be influencing factors in reporting symptoms.

#### MANAGEMENT OF SEVERE DENTAL TRAUMA WITH DIFFERENT PROTOCOLS OF APEXIFICATION AND PULP REVASCULARIZATION

RODOLFO FIGUEIREDO DE ALMEIDA; ANA CAROLINA CORRÊIA LAURINDO DE CERQUEIRA NETO; ANDRÉA CARDOSO PEREIRA; EDUARDO CÉSAR ALMADA SANTOS; JÚLIO VARGAS NETO; JOSÉ FLAVIO AFFONSO DE ALMEIDA; ALEXANDRE AUGUSTO ZAIA; ADRIANA DE JESUS SOARES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This case report describes pulp revascularization of an avulsed immature permanent tooth replanted after 2 hours on saline solution storage media.

**Method:** A 10-year-old boy was referred to Dental Trauma Service of the Piracicaba Dental School, State University of Campinas, two years after suffering avulsion and replantation of tooth 21. Pulp revascularization was performed after the diagnosis of pulp necrosis. Calcium hydroxide and 2% chlorhexidine gel were used as intracanal medication for 21 days. Five months later, the patient suffered another trauma with intrusion of tooth 11 and avulsion and replantation of tooth 12. Both teeth were treated by Dental Trauma Service's protocol with an obturation paste, consisting of calcium hydroxide, 2% chlorhexidine gel and zinc oxide in a proportion of 2:1:2, and posterior incisal repositioning with an orthodontic device. The follow-up 41 months later showed no signals or symptoms on tooth 11 and 21. An apical closure with an increase in root length and stabilization of external inflammatory root resorption were observed on tooth 21. Tooth 12 was lost due to replacement resorption.

**Results:**

**Conclusion:** Although there are few case reports showing pulp revascularization on replantation of immature permanent teeth, this case, treated with calcium hydroxide and 2%

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chlorhexidine gel as intracanal medication, proved to be effective in one tooth, even as the Dental Trauma Service's protocol with an obturation paste in severe trauma of intrusion.

#### MANDIBULAR MOVEMENTS WITH NEW COMPLETE DENTURES VARYING THE DEGREE OF MANDIBULAR RIDGE RESORPTION

THAIS DE SOUSA SANTANA; VIVIAN BARNABÉ POLICASTRO; ANDRESSA ROSA PERIN LEITE; MARCELA DANTAS DIAS DA SILVA; DANNY OMAR MENDOZA MARIN; ANA CAROLINA PERO

ARARAQUARA DENTAL SCHOOL - UNESP

**Aim:** The present study compared the influence of the height of the mandibular ridge during chewing at different stages after the insertion of new complete dentures.

**Method:** Twenty-eight edentulous individuals (normal mandibular ridges-NR, n=14; resorbed mandibular ridges-RR, n=14) received a new set of conventional complete dentures. A kinesiograph was used to record the amplitude of the mandibular opening and the pattern of movements during chewing. The kinesiographic recordings were performed at 24 hours, 30 days, three months and six months after the insertion of the dentures Two-way ANOVA and the Bonferroni test were used in the data analysis ( $\alpha=0.05$ ).

**Results:** The horizontal amplitude of the mandibular movement during opening was significantly higher at 30 days ( $\mu = 29.270 \pm 1.516$  mm) compared to 6 months ( $\mu = 25.784 \pm 1.068$  mm), irrespective of the height of the mandibular ridge. The amplitude of mandibular movement during chewing was significantly higher for RR ( $\mu = 6.854 \pm 0.364$  mm) in comparison to NR ( $\mu = 5.347 \pm 0.364$  mm). Significant differences were also detected on the amplitude of mandibular movement during chewing between 24 hours ( $\mu=12,698\pm0,425$  mm) compared to 6 months ( $\mu=14,415\pm0,536$  mm).

**Conclusion:** In conclusion, participants with RR presented higher amplitude of mandibular movements during chewing in the periods evaluated. In addition, an improvement of the horizontal amplitude of the mandibular movement during opening was observed 30 days after the insertion of the dentures, and in the vertical amplitude of movement during chewing after six months, independently of the height of the mandibular ridge.

#### MANDIBULAR OSTEOLITIC LESION LEADING TO THE DIAGNOSIS OF NEUROFIBROMATOSIS TYPE-1

CAROLINE KLEIN DIAS; GLAYKON ALEX VITTI STABILE; EVELISE ONO; FÁBIO AUGUSTO ITO; HELITON GUSTAVO DE LIMA; ADEMAR TAKAHAMA JUNIOR

LONDRINA STATE UNIVERSITY - UEL

**Aim:** The main purpose of this report is to present a rare case of neurofibromatosis type 1 (NF-1) with atypical radiographical and histopathological features.

**Method:** An 11-year-old male patient was referred from the orthodontist, after the panoramic radiography revealed an osteolytic lesion in the left mandible angle without any intraoral alterations. Physical examination revealed facial asymmetry, multiple brown macules on the trunk, and a subcutaneous nodule in the chest. An incisional biopsy of the jaw lesion was performed under general anesthesia and the histopathological examination showed a benign mesenchymal tumor composed of fusiform and oval cells and the presence of laminated bodies similar to the Wagner-Meissner tactile corpuscles infiltrating adipose tissue and the skeletal muscle fibers. In the immunohistochemical analysis the tumor cells were positive for S-100 protein, leading to the diagnosis of diffuse neurofibroma. With this diagnosis, a more detailed physical examination revealed structures in the iris compatible with Lisch nodules and axillary freckles, confirming the diagnosis of (NF-1). The patient was then referred to an ophthalmologist and a dermatologist and continues on follow up.

**Results:**

**Conclusion:** The extent of both functional and aesthetic damage that may be caused by neurofibromatosis and the potential malignant transformation of the neurofibromas in these patients make early diagnosis critical to the prognosis of the disease.

#### MANDIBULAR OVERDENTURES SUPPORTED BY DIFFERENT IMPLANT POSITION AND ANGULATION USING MICRO ERA® SYSTEM: IN SILICO STUDY

LETÍCIA DEL RIO-SILVA\*; FELIPE FRANCO FERREIRA; GUILHERME ALMEIDA BORGES; DANIELE VALENTE VELÓSO; THAIS BARBIN; RAFAEL LEONARDO XEDIEK CONSANI; MARCELO FERRAZ MESQUITA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to investigate the biomechanical behavior of implant-retained mandibular overdentures using micro ERA® system with different implant position and angulation by finite element analysis (FEA).

**Method:** Four 3-D finite element models of a simplified mandibular overdentures were constructed, using one Brånemark implant with a micro ERA® attachment. The implant was positioned on the canine or lateral incisor area with an angulation of either 0° (C-0°; LI-0°) or 17° (C-17°; LI-17°) to the vertical axis. A 100-N axial load was applied in one side simultaneously, at the first to second molar and premolar. In all models it was analyzed the Overdenture displacement, compressive/tensile stress in the bone-implant interface, and also the von Mises equivalent stress for the nylon component of the housing. The stresses were obtained (numerically and color-coded) for further comparison among all the groups.

**Results:** The displacement on the overdenture was higher at the posterior surface for all groups, especially in the C-17° group. When comparing the tensile/compressive stress in the bone-implant interface the lateral-incisor groups (LI-0° and LI-17°) had the highest compressive stress, while the canine groups (C-0° and C-17°) had the highest tensile stress. The von Mises stress on the nylon component generated higher stress value in the LI-0° group, irrespective of the implant location and inclination.

**Conclusion:** The angulation and positioning of the implant in mandibular overdenture interferes directly in the stress distribution for the interfaces evaluated.

#### MENTAL HEALTH IN ADOLESCENCE

VITOR MOREIRA DE LARA; BEATRIZ CRISTINA DE FREITAS; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Know the main psychological disorders that occur in adolescence, the prevalence, general factors associated with psychopathologies, health policies, and services.

**Method:** It is a literature review, through the search in scientific articles, having as a database, Scielo, Google academic, Ministry of Health, with the following descriptors: Mental health, Adolescence, Adolescence, Mental health policies.

**Results:** According to the World Health Organization (WHO), some psychological disorders are priorities in adolescence, such as depression, suicide, and psychosis. Anxiety, eating disorders (anorexia and bulimia), personality disorders, behavioral disorders, and social phobia should also be considered. Studies show a prevalence of common mental disorders of 30.0%, with the highest among girls aged 15-17 years (38.4%), the prevalence of emotional and behavioral problems is around 10.0% -20.0% (2016). Studies indicate that the main causes for the development of these psychopathologies are related to genetic, biological and even stimuli of the environment in which the young person is inserted. Inequalities can also be observed regarding policies and the provision of appropriate services, physical infrastructure and human resources qualified to attend to this group.

**Conclusion:** It is possible to conclude the importance of the demand in mental health in adolescence since this is an age group considered vulnerable and at risk. The diversity of clinical situations demands the need for more studies that allow a better understanding of the disease, as well as effective treatments and interventions.

#### METASTATIC THYROID FOLLICULAR CARCINOMA IN THE ORAL CAVITY

JOÃO PAULO GONÇALVES DE PAIVA; ANA LÚCIA CARRINHO AYROZA RANGEL

STATE UNIVERSITY OF WEST PARANA

**Aim:** Follicular thyroid carcinoma (FTC) is the second most common thyroid carcinoma and represents 10% of malignant thyroid lesions. FTC occurs mainly in women between 40 and 60 years old and metastases are reported in 20% of cases at the time of diagnosis.

**Method:** The present study reports the case of a 80-year-old woman, leucoderma, without knowledge of primary neoplasia, who attended the Stomatology Clinic of the State University of Western Paraná (UNIOESTE) with complaint of "mouth lesion". At the physical examination, an exuberant sessile nodule was observed in the lower left posterior alveolar ridge, painful, with no defined limits, erythematous coloration, smooth surface, soft consistency, and a 10-day reported evolution. An incisional biopsy revealed infiltrative neoplasia in the submucosa, composed of small and round cells and areas similar to the microfollicles, suggesting by histopathological analysis and immunohistochemical evaluation to be a metastatic neoplasm of thyroid origin. After referral to the Hospital Cancer of Cascavel (UOPECCAN), diagnosis of metastatic thyroid follicular carcinoma in the oral cavity was confirmed.

**Results:**

**Conclusion:** Thyroid neoplasms may develop insidiously and lead to metastases with relatively high frequency. The spread of a FTC to the oral cavity may represent the first sign of the disease, illustrating the importance of the dental surgeon in lesion diagnosis.

#### MICRO-CT EVALUATION OF 3D AND 2D MORPHOMETRIC PARAMETERS OF VERTUCCI'S TYPE II MESIAL ROOTS OF MANDIBULAR FIRST MOLARS

HELOUISE ABREU LAFFAYETT; ANDRESSA GARCIA GUERREIRO ABRÃO; VÍCTOR HUGO DECHANDT BROCHADO; RONALDO SOUZA FERREIRA DA SILVA; ROBERTO PRESCINOTTI; PABLO ANDRÉS AMOROSO SILVA

STATE UNIVERSITY OF LONDRINA

**Aim:** Knowledge of the root canal anatomy is necessary to ensure the long-term success of endodontic treatment. In mandibular molars, the main characteristic of the mesial root is the presence of isthmuses between the two main channels, particularly in the middle and apical portions of the root. The purpose of this study was to evaluate the internal anatomy of the mesial root of mandibular molars with type II Vertucci's classification.

**Method:** Twenty-eight mesial roots of mandibular first molars were scanned in the Skyscan 1173 microtomography. All images were reconstructed and analyzed by CTAN program v.1.12 (Bruker-microCT). Morphometric 3D: volume, surface area, SMI and 2D parameters: area, roundness minor and major diameter, as well apical foramina of the apical 4mm were studied.

**Results:** 3D volume revealed a median of 4.34 mm<sup>3</sup>, surface area of 69.91 mm<sup>2</sup> and SMI of 0.88. At 1 mm the median area was 0.12 mm<sup>2</sup> and the roundness showed a non-rounded canal 0.45. Major and minor diameters were 0.57 and 0.26 respectively. The area at 2, 3 and 4 mm increased progressively: 0.14, 0.23 and 0.26mm<sup>2</sup>. Oval canals were observed as the distance from the apex increased. Major diameters were 0.78, 0.99, 1.5 and minor diameters were 0.26, 0.33 and, 0.26 at 2, 3 and 4 mm from the apex. Furthermore, few apical foramina were observed in all 4 mm from the apex.

**Conclusion:** According to the results, mesial roots of mandibular molars containing Vertucci's type II configuration showed non rounded canals, small minor diameters an few apical foramina from 1 to 4 mm level. The 3D analysis demonstrated high volumes of the canal system in these types of roots.

#### MICROBIAL COMMUNITIES IN ROOT CANALS FROM TEETH WITH POST-TREATMENT APICAL PERIODONTITIS

EDERALDO PIETRAFESA DE GODOI JR; PRISCILA AMANDA FRANCISCO; AUGUSTO RODRIGUES LIMA; ADRIANA DE JESUS SOARES; CAIO CEZAR RANDI FERRAZ; MARINA ANGÉLICA MARCIANO; MAGDA FERES; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this work was to study the changes in the microbiota composition of root

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canals infections from endodontic failure after chemical-mechanical preparation (CMP) and the use of intracanal medication (IM) for 30 days, through checkerboard technique.

**Method:** Twenty patients with apical periodontitis and need for endodontic retreatment were selected. Samples were collected from the root canals. The DNA was extracted and subjected to checkerboard analysis to detect 40 bacterial species.

**Results:** Through the checkerboard, bacteria were detected in all the initial microbiological collections of the root canals, however, after the CMP and the IM six and three samples did not present bacterial DNA, respectively. The most prevalent species in the initial samples were: *Enterococcus faecium* (19/20), *Enterococcus hirae* (19/20) *Prevotella nigrescens* (17/20), *Treponema denticola* (14/20), *Eubacterium nodatum* (14/20) and *Treponema socranskii* (13/20). After the CMP the most prevalent species were: *Prevotella nigrescens* (13/20), *Enterococcus hirae* (13/20), *Fusobacterium periodonticum* (11/20), *Treponema denticola* (10/20) and *Enterococcus faecium* (10/20). And after IM were: *Staphylococcus epidermidis* (16/20), *Enterococcus hirae* (15/20), *Prevotella nigrescens* (10/20) *Treponema denticola* (9/20).

**Conclusion:** It was concluded that the root canals microbiota in endodontic failure is heterogeneous, presenting microorganisms in most cases. (Supported by FAPESP 15/23479-5, 17/16516-7; CNPq 308162/2014-5 & CAPES).

**MICROORGANISMS AND THEIR VIRULENCE FACTORS IN NORMAL DENTAL PULP**  
VITO MADIO CHIARELLI NETO; EMELLY DE AVEIRO; ADRIANA DE JESUS SOARES;  
ALEXANDRE AUGUSTO ZAIA; CAIO CEZAR RANDI FERRAZ; JOSÉ FLÁVIO AFFONSO DE ALMEIDA; MARINA ANGÉLICA MARCIANO DA SILVA; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The common form of the pulp infection is through dental caries. Bacteria present in the blood can also colonize the pulp through anacrosis. The objective of the present study was to detect microorganisms and their virulence factors in teeth with normal dental pulp, establishing a basis for microbiological studies. It also aimed to evaluate the ability of the chemical mechanical preparation (CMP) and intracanal medication (ICM) in reducing possible levels of microorganisms, endotoxin (LPS) and lipoteichoic acid (LTA).

**Method:** We selected 18 teeth with normal pulp indicated for endodontic treatment for prosthetic reasons. Samples were collected from the root canal before CMP, after CMP and after ICM. The microbiological samples were processed by culture. LPS and LTA were quantified by the Limulus Amoebocyte Lysate (LAL) and Enzyme-Linked Immunosorbent Assay (ELISA) methods, respectively. For statistical analysis, the Wilcoxon test was used to evaluate intragroup significance and the Mann-Whitney test for intergroup ( $p < 0.05$ ).

**Results:** The results showed absence of microbial growth by culture. LPS showed median levels of 0.0100 EU / mL before and after CMP, and after ICM. LTA showed median levels of 7.6 pg / mL before CMP, 2.3 pg / mL after CMP and 2.2 pg / mL after ICM.

**Conclusion:** It can be concluded that no viable bacteria were found by culture in teeth with normal pulp at all phases of the endodontic therapy. The levels of LPS and LTA found in all steps of endodontic therapy suggest the presence of bacteria virulence factors in the normal pulp. (Supported by FAPESP 2015/23479-5; CNPq 308162/2014-5 & CAPES).

**MULTIDISCIPLINARY APPROACH ON LATERAL INCISORS AGENESIS: A CASE REPORT**

TALITA MALINI CARLETTI; MARIANA BARBOSA CÂMARA-SOUSA; OLÍVIA MARIA COSTA DE FIGUEIREDO; RENATA CUNHA MATHEUS RODRIGUES GARCIA  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This case report aims to present a case report of a 23-year-old male patient who sought the Prosthetic Clinic of Piracicaba Dental School for the treatment of congenital agenesis of the maxillary lateral incisors (12 and 22).

**Method:** In this sense, metal-free ceramic crowns implant-supported, homemade dental bleaching, and restoration of maxillary canines with composite resin were planned. In addition, during the treatment, a periodontal surgery with gingival graft was proposed, by means of the vestibular tunnel access surgical technique (VISTA - Vestibular Incision Subperiosteal Tunnel Access) to improve gingival thickness around the periimplant region of the element 12.

**Results:**

**Conclusion:** Multidisciplinary approaches in the treatment of congenital agenesis of maxillary lateral incisors are satisfactory alternatives, recovering patient's social and aesthetic functions.

**MULTIPLE DENTAL TRAUMA MANAGEMENT IN A SAME TOOTH: A CASE REPORT**

PABLA SECCHI; ANDREA CARDOSO PEREIRA; MARINA CARVALHO PRADO; ANA CAROLINA CORREIA LAURINDO DE CERQUEIRA NETO; JAQUELINE MAFRA LAZZARI; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES; ALEXANDRE AUGUSTO ZAIA; ADRIANA DE JESUS SOARES  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This case report describes a clinical management of multiple traumatic dental injuries (TDI) in a same tooth.

**Method:** A 9-year-old girl suffered fall one year previously. Considering the late occurrence of TDI, diagnosis of pulp necrosis and the presence of open apex, the treatment of choice to the right maxillary central incisor was pulp revascularization using the combination of calcium hydroxide and 2% chlorhexidine gel as intra canal medication. Patient returned after 2 years of pulp revascularization, due to the recurrence of TDI 1 month previously. A second endodontic intervention was accomplished with an alternative filling therapy (paste composed by calcium hydroxide, 2% chlorhexidine gel and zinc oxide). A third TDI occurred six months after the second but patient search for treatment 5 months later. Whereas multiple TDI, repeated dentin fracture and closed apex, obturation with MTA and fiber post installation was performed.

**Results:**

**Conclusion:** Pulp revascularization is an effective therapy for traumatized immature permanent necrotic teeth. However, there is a high risk of recurrence of dental trauma, which may interfere in the treatment outcomes. Therefore, professionals should be prepared for the necessity of alternative management, according to evolution of each case.

**MULTIPROFESSIONAL PERFORMANCE IN THE ORAL HEALTH OF THE BABY WITH DISABILITIES**

BEATRIZ ALVES FURTADO; ANA LÚCIA BOMBONATTI ANA RITA ALBUQUERQUE ZITO CÍNTIA MEGID BARBIERI LILIANE PASSANEZI A. LOUZADA MÁRCIO JOSÉ POSSARI DOS SANTOS MARISHA OLIVEIRA DOS SANTOS; ALESSANDRA MARCONDES ARANEGA  
ARAÇATUBA DENTAL SCHOOL - UNESP

**Aim:** Due to the high incidence of dental mutilation and severe oral conditions observed in young patients with mental retardation, diseases or other neurological disorders, the project aims to facilitate preventive and therapeutic procedures, adapting, with the multiprofessional approach, infants with early disability to the dental environment and to intensify information to their caregivers, emphasizing oral prevention behaviors, educational and preventive guidelines.

**Method:** To that end, CAOE has received up to 8 babies a week of 0-5 years of age, along with their caregivers, and many have a history of not being able to provide care in their own municipalities. Babies are received by multiprofessional staff and their dental condition. Based on protocols of the Center itself, infants are adapted to dental treatment and return periodically to preventive and curative dental procedures, according to the existing oral health condition. The active participation of multiprofessional in the preventive process of oral diseases triggers humanized dental action.

**Results:**

**Conclusion:** Clinically, it has been verified that the hygiene of the patient has considerable improvement after its entry into the project and that, with the adaptation, fewer children have been indicated for sedation in the Center itself. Caregivers, when trained, are said to be able to perform healthy hygiene habits and that the patient loses the negative stigma of the dental office. It is recognized that dental care should start at an early age and it is believed that the long-term results may be promising, although more scientific studies assess the impact of the project.

**NARROW DIAMETER DENTAL IMPLANTS SURVIVAL RATE: A SYSTEMATIC REVIEW**

PEDRO HENRIQUE DE SA MAFRA; TAIS ALVES REIS; KARLA ZANCOPE; FLAVIO DOMINGUES DAS NEVES; JOSE HENRIQUE LOPO BARROS  
SCHOOL OF DENTISTRY - UFU

**Aim:** The present study aimed to conduct a systematic review of the literature to determine the survival rate of narrow-diameter implants ( $\leq 3.5$ mm).

**Method:** The research method was a search in electronic databases (Pubmed, EMBASE e Cochrane Database of Systematic Reviews) until September 2016. The inclusion criteria were: articles published in English, studies performed in human patients and dental implants with narrow diameter with at least one year of follow-up. The articles were excluded if they had one or more of the following characteristics: animal study, cohort studies, series or case reports, articles from other reviews, less than 1 year of follow-up.

**Results:** The result of this research initially identified 116 studies and the manual search process identified 16 studies. After the titles and abstracts were read and all duplicates were removed, 50 studies remained for full texts reads. Articles that did not meet the inclusion criteria were excluded, leaving thirty-one (31) for data extraction. Twenty-one (21) studies were prospective and ten (10) retrospective studies. After all data extraction and interpretation, 2,152 patients and 3,659 with a diameter varying from 1.8 to 3.5mm were analyzed and only 98 dental implants were lost.

**Conclusion:** The survival rate found by this systematic review for narrow diameter implants were 97.3%.

**OBTURATOR PROSTHESIS RETAINED BY OSSEOINTEGRATED IMPLANTS: A CASE REPORT**

MICHELE COSTA DE OLIVEIRA RIBEIRO; DANIELA MARIA SANTANA LEAL; SAMILLY EVANGELISTA SOUZA; DANIELE VALENTE VELÔSO; LUCIANA VALADARES OLIVEIRA  
SCHOOL OF DENTISTRY - UFBA

**Aim:** Describe a clinical case of implant retained prosthetic rehabilitation of a patient with extensive maxillary defect caused by surgical resection of Squamous Cell Carcinoma.

**Method:** Female patient aging 77 years, sought the Buccomaxillofacial Prosthetic Service of Bahia Federal University, complaining of compromised phonetic, esthetic, masticatory and deglutition functions due to oronasal communication on the right maxilla. The clinical exam revealed oronasal communication, total upper and lower edentulism, 4 implants set in maxilla and 5 in the mandible. The treatment approach proposed was an overdenture supported on implants with by the bar/clip system on the maxilla and total denture fixed on implants for the mandible

**Results:**

**Conclusion:** Overdenture-type maxillary obturator supported on osseointegrated implants enhanced the masticatory and phonetic function of a patient with maxillary defect due to surgical resection. It is concluded that the prosthetic rehabilitation is fundamental for patient life quality, promoting comfort, function and esthetics.

**ORAL HEALTH EVALUATION IN PATIENTS FROM AN INTENSIVE CARE UNIT**

VITORIA IAROS DE SOUSA; NATHALIA COSTA COPPI; CINDY MAKI SATO; LETICIA SASSAKI CORREIA; ELISA EMI TANAKA CARLOTO; EVELISE ONO; HELITON GUSTAVO DE LIMA; ADEMAR TAKAHAMA JUNIOR

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## STATE UNIVERSITY OF LONDRINA

**Aim:** The objective of this study was to evaluate the condition of the oral cavity of patients hospitalized in an Intensive Care Unit (ICU).

**Method:** For this purpose, data were collected from medical records and physical examinations were performed for 1592 patients, between 2016 and 2018. Data were passed to a standardized chart, then the statistical analysis was performed.

**Results:** 688 (43.5%) were female and 893 (56.5%) were male. The mean age was 59 years, ranging from 13 to 116 years. A little more than half of the patients underwent mechanical ventilation (830 - 52%), most of them with orotracheal intubation (789 - 95%). In the physical examination, 285 patients (17.9%) had caries and 1369 (86%) had some dental loss, of which 784 (57.3%) were totally edentulous. 308 patients (22.5%) used some type of removable prosthesis and 17 of them (5.5%) had been intubated without removal of these prosthesis. 428 patients (27%) presented some type of mucosal lesion, most of which were traumatic ulcers (202-40%), followed by hematomas (31-7%) and candidosis (89-5.6%). The statistical analysis revealed that these oral lesions were more frequent in patients under mechanical ventilation ( $p < 0.0001$ ).

**Conclusion:** Patients admitted to the ICU, especially those under mechanical ventilation, have a higher risk of developing oral lesions, possibly due to low immune function and trauma caused by the procedure of intubation and the apparatus used. These characteristics reinforce the need of the dentists in the ICUs in order to early diagnose and treat these lesions, avoiding complications to the patient's systemic health.

## ORAL HEALTH PROMOTION WORKSHOPS FOR THE CONTROL OF DENTAL CARIES

MARIA CLARA DIONIZIO DE MORAIS; GABRIEL WILDNER CORDESCHI LEITE; LUCAS HENRIQUE GOMES CASTRO; SABRINA DA SILVA BUENO; DAGMAR DE PAULA QUELUZ PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Health and disease are determined by social, economic and psychological factors, which together determine the quality of life of an individual. Preventive treatment in the promotion of oral health aims at reducing the risk of dental caries disease or its recurrence. To propose a reflection from the information given through oral health promotion workshops for the control of dental caries.

**Method:** In order to have control of the effectiveness of the workshops, a data collection was carried out through questions, being applied to the students before and after the theoretical / practical workshops. The questions were analyzed in the categories: right, wrong, partially correct and I do not know.

**Results:** The workshops were attended by nine students, who answered the 15 questions on promotion and prevention in oral health, with the following results: most before the workshops presented more than 50% errors, and after the workshops the results were satisfactory and exceeded our expectations.

**Conclusion:** Based on the results, it can be concluded that the students obtained a remarkable use of the contents, including the information of the workshops and the importance of the promotion of oral health for prevention and control of dental caries.

## OUTCOMES OF AN ALTERNATIVE CERVICAL SEALING MATERIAL IN REGENERATIVE ENDODONTIC PROCEDURES: A CASE SERIES

MARINA CARVALHO PRADO; ANA CAROLINA CORREIA LAURINDO DE CERQUEIRA NETO; ANDRÉA CARDOSO PEREIRA; JOSÉ FLÁVIO AFFONSO DE ALMEIDA; CAIO CÉSAR RANDI FERRAZ; ALEXANDRE AUGUSTO ZAIA; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES; ADRIANA DE JESUS SOARES PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study evaluated the outcomes of a case series of regenerative endodontic procedures (REPs) using an alternative cervical sealing material.

**Method:** Seven maxillary incisors (patients with 7-10 years old) in chronic conditions, which suffered dentin enamel fracture with involvement of the supporting tissues, were selected. Inclusion criteria were: pulp necrosis, open apex ( $\geq 1.5$ mm) and periapical radiolucency. REPs were performed by means of passive decontamination with 6% NaOCl and 2% chlorhexidine (CHX), and an effective formation of a blot clot, using manual endodontic files. Then, the material proposed for cervical sealing (composed of calcium hydroxide, CHX gel and zinc oxide, in a proportion of 2:1:2) was applied. Access cavity was sealed with Coltosol and composite resin. All patients were followed-up every 3 months for at least 1 year. Root radiographic modifications were quantified in Image J program. Root development and the cervical sealing long-term adequacy was evaluated by two previously calibrated evaluators. Results were tabulated and analyzed and the prevalence (%) of data was obtained.

**Results:** Most cases (55%) showed complete healing, whereas 45% and 0% demonstrated incomplete healing and failure, respectively. The proposed cervical sealing material remained stable and adequate during the whole period of follow-up (mean period: 28.5 months).

**Conclusion:** The proposed cervical sealing material demonstrated adequate sealing and positive outcomes during at least 1 year, besides presenting relatively low cost and availability of its components. Therefore, it may be taken as an interesting material for cervical sealing in REPs.

## PERCEIVED STRESS LEVEL AMONG UNDERGRADUATE STUDENTS IN DENTISTRY

GIOVANA CARLINS; ANA OLIVEIRA; GABRIELA FURONI; GABRIEL SIMÕES; LEONARDO URBANO; ROSANA POSSOBON PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To investigate the level of perceived stress among dental undergraduate students at FOP-Unicamp.

**Method:** The students answered the Perceived Stress Scale (PSS14), which evaluates the general perception of stress, and a questionnaire for socioeconomic and demographic data.

**Results:** Three Hundred students enrolled in the 5 grades participated in this survey. No

student presented severe stress, but 76% of the sample had a moderate level of stress.

**Conclusion:** The moderate stress level was more prevalent than the mild among students of both genders, and more prevalent in students over 21 years old and attending the 3rd year of graduation.

## PERCEPTION OF LEFT HANDED DENTISTRY STUDENTS ABOUT THEIR CONDITION AND CLINICAL PRACTICE

JULIO MARTINEZ ALVES OLIVEIRA; SUZELY ADAS SALIBA MOIMAZ; ARTÊNIO JOSÉ ISPER GARBIN; TÂNIA ADAS SALIBA ARAÇATUBA DENTAL SCHOOL - UNESP

**Aim:** The objective of this study was to analyze the difficulties reported by left - handed dental students in clinical and laboratory activities.

**Method:** This is a descriptive research, an inquiry type, fulfilled by the Faculty of Dentistry of Araçatuba - UNESP. The sample consisted of 37 left-handed students enrolled from the 2nd to the 5th year of the full-time period, and from the 2nd to the 6th year of the night period. A semi structured questionnaire was applied about the subject, developed by the researchers. The variables studied were: Prejudice for being left - handed, risks of musculoskeletal complications, performance in dental procedures and institutional support.

**Results:** 70% of those interviewed were female and the mean age was 22 years. The majority (81%) of the interviewees reported not having suffered discrimination due to their left-handed status. Of those surveyed, 41% believe they are at a higher risk of acquiring skeletal muscle complications and 43% reported that they would have better clinical performance if they were right-handed. 11% indicated to use left-handed equipment in college clinics.

**Conclusion:** Most of the left-handers affirmed that they had losses in the clinical performance and still perceived health risk due to their condition.

## PERCEPTIONS ABOUT TEACHING AND LEARNING PROCESSES IN PIRACICABA DENTAL SCHOOL BY UNDERGRADUATE AND POSGRADUATE STUDENTS

GABRIEL WILSON SILVA; FÁBIO LUIZ MIALHE; FÁBIO LUIZ MIALHE PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this research was to characterize and evaluate the teaching and learning processes developed in Piracicaba Dental School from the perspective of undergraduate and Postgraduate students

**Method:** Two online questionnaires were developed based on the research objectives and students were asked to enter into a link and to complete the questionnaires.

**Results:** To date, data were collected from 106 undergraduate students of both sexes, ranging in age from 18 to 28 years. In relation to postgraduate students, 52 students participated in the research to date, with ages ranging from 23 to 54 years.

**Conclusion:** For the undergraduate students, the teacher is a determining factor in their process of professional training, as well the teaching strategy that they use to instruct they students. For the undergraduate students, there is a low interest of teachers in relation to use new teaching and learning strategies different from the traditional pattern of expositive classes. This perspective was very similar in the sample of postgraduate students. It is concluded that the teaching and learning processes should be reviewed both at the undergraduate and postgraduate levels in the Piracicaba Dental School in order to motivate their students to be better interested in the disciplines and courses offered in this Institution.

## PERIODONTAL ATTACHMENT LOSS AND ASSOCIATED FACTORS IN THE ADULT POPULATION FROM SOUTHEAST BRAZIL: A 4-YEARS FOLLOW UP

GABRIELLE CHRISTINE BONETTI SALLUM; MARCELA DI MOURA BARBOSA; MARÍLIA JESUS BATISTA; MARIA DA LUZ ROSÁRIO DE SOUSA; ENILSON SALLUM; RENATO CORRÊA VIANNA CASARIN; KARINA GONZALES SILVÉRIO PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The present study aimed to evaluate the prevalence of periodontal disease in 2011 and 2015, and further, to analyze the risk factors for the periodontal attachment loss during 4 years of follow-up in the adult population of Piracicaba, São Paulo, Brazil.

**Method:** In 2011, a sample of 248 people aged 20-64 years was randomly selected, and in 2015, for the follow-up, only 143 people participated. A home-based oral examination was conducted in both years, using the Community Periodontal Index (CPI) and the Periodontal Attachment Loss (PAL), and a questionnaire was applied to collect demographic and socioeconomic data, information of health habits and the use of dental service. From this, the individuals were classified in "free of disease, mild periodontal disease and moderate to severe periodontal disease".

**Results:** The data showed that mild periodontal disease was the most prevalent condition in 2011 (74.8%) and 2015 (83.9%). The chance of disease progression (increase in PAL from 2011 to 2015) was 3.08 (CI: 1.42-6.70) and 2.59 (CI: 1.13-5.90) times greater in individual above of 46 years-old and male, respectively ( $p < 0.05$ ).

**Conclusion:** Mild periodontitis was the most prevalent condition. Further, age and male gender were the factors associated to the progression of periodontal attachment loss between the years 2011 and 2015.

## PHOTOFUNCTIONALIZATION OF BIOFUNCTIONAL COATING ENHANCES SURFACE CHARACTERISTICS AND BIOLOGICAL PROPERTIES OF TITANIUM

CAROLINE DINI; BRUNA EGUMI NAGAY; JAIRO MATOZINHO CORDEIRO; NILSON CRISTINO DA CRUZ; ELIDIANE CIPRIANO RANGEL; ANTONIO PEDRO RICOMINI-FILHO; VALENTIM ADELINO RICARDO BARÃO PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Photofunctionalization mediated by ultraviolet (UV) rays changes the physico-chemical characteristics of titanium (Ti) and improves the biological properties of dental implants.

However, the role of photofunctionalization of biofunctional Ti surfaces on the antimicrobial

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and photocatalytic activity remains unknown and was investigated in this study.

**Method:** Commercially pure titanium (cpTi) discs were divided into four groups: (1) machined samples [cpTi UV-]; (2) plasma electrolytic oxidation (PEO) treated samples [PEO UV-]; (3) machined samples with UV light application [cpTi UV+]; and (4) PEO-treated samples with UV light application [PEO UV+]. The surfaces were characterized according to their morphology, roughness, crystalline phase, chemical composition and wettability. The photocatalytic activity and albumin adsorption were measured. For the microbiological assay, *Streptococcus sanguinis* adhesion was developed on the disc surfaces and the colony forming units was evaluated.

**Results:** PEO treatment increased the Ti surface roughness and wettability ( $p < 0.05$ ). Photofunctionalization reduced the hydrocarbon concentration and enhanced albumin adsorption mainly for the PEO-treated surface ( $p < 0.05$ ). PEO UV+ also maintained higher wettability values for a longer period and provided reduction of bacterial initial adhesion at 1 h ( $p = 0.012$  vs. PEO UV-). Photofunctionalization did not increase the photocatalytic activity of Ti ( $p > 0.05$ ).

**Conclusion:** The photofunctionalization of a biofunctional PEO coating seems to be a promising alternative for dental implants as it increases blood plasma protein adsorption and reduces initial bacterial adhesion.

#### PHYSICO-MECHANICAL PROPERTIES OF A BISACRYLIC RESIN BEFORE AND AFTER IMMERSION IN 0.12% CHLORHEXIDINE DIGLUCONATE

GIOVANA DORNELAS AZEVEDO ROMERO; BETINA CHIARELO COMMAR; CLARISSA BUENO SILVA; EMILY VIVIANNE FREITAS DA SILVA; SANDRO BASSO BITENCOURT; MARCELO COELHO GOIATO; DANIELA MICHELINE DOS SANTOS  
ARAÇATUBA DENTAL SCHOOL - UNESP

**Aim:** To evaluate the influence of 70% alcohol on physical-mechanical properties of the Protemp composite resin, with and without the application of light-curing glaze, under treatment with 0.12% Chlorhexidine Digluconate.

**Method:** Forty samples were divided into 4 groups ( $n = 10$ ): Group A (without alcohol/without light-curing glaze), Group B (without alcohol/with light-curing glaze), Group C (with alcohol/without light-curing glaze) and Group D (with alcohol/with light-curing glaze). All samples were submitted to in vitro treatment with oral rinsing 0.12% Chlorhexidine Digluconate for 7 days and tests of color stability, microhardness, roughness and surface energy were performed initially and after the period of treatment. The data of color stability were submitted to two-way ANOVA, and microhardness, roughness and surface energy data were submitted to three-way ANOVA for repeated measures. All data were submitted to the Tukey test ( $\alpha=5\%$ )

**Results:** Group A presented the highest value of  $\Delta E$  with significant statistical difference for group C. The groups with alcohol presented higher microhardness values compared to groups without alcohol, except for the groups with light-curing glaze in the final period. Group A showed higher roughness values in relation to group C in both periods. Group D presented higher roughness values than group B. Surface energy values did not vary significantly between groups, except between groups A and C in the final period

**Conclusion:** The application of alcohol, in general, improved the properties of the resin analyzed

#### POPULAR PARTICIPATION OR SOCIAL CONTROL IN HEALTH: A REVIEW

MARIA ANGELA ADAMOLI DE MORAIS ROSSETTO; DAGMAR DE PAULA QUELUZ  
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**Aim:** Describe the importance of popular participation or social control in the Unified Health System, and the different segments that are part of it.

**Method:** Bibliographic review of legislations, laws, decrees and portaries.

**Results:** The importance of popular participation or social control in the Unified Health System requires a real participation with engagement of the population in the different spheres of public offices (federal, state and municipal). The Health Councils are deliberative bodies that act as strategic participatory spaces in the claim, formulation, control and evaluation of the execution of public health policies. The Health Conferences consist of public forums that take place every four years, through discussions at local, state and national levels, with the participation of representative social segments of Unified Health System (providers, managers, workers and users), evaluate and propose guidelines for the formulation of health policy.

**Conclusion:** It is of extreme importance the popular participation or social control in the Unified Health System by its scope and in the proposals of public policies to improve the assistance provided to the users of the Unified Health System.

#### POSITION OF THE PREMOLARS AND MOLARS AND ITS RELATION WITH THE ZYGOMATIC ROOT OF CEBUS APELLA MONKEYS

MARIA CLAUDIA HARADA FERREIRA; ALEXANDRE RODRIGUES FREIRE; RAFAEL ARAUJO; FELIPPE BEVILACQUA PRADO; ANA CLÁUDIA ROSSI  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to investigate the position of the maxillary premolars and molars relative to the long axis of the zygomatic root of monkeys of the species *Cebus apella* by linear measurements.

**Method:** Twelve skulls of adult Capuchin Monkeys (Specie: *Cebus apella*), were used in this study. A digital caliper was used for the measurements. Measurements were made to describe the distance of each premolar and molar with the long axis of the zygomatic root on both sides. Shapiro-Wilk test was used to determine if the measurements were conformed to a normal distribution. Comparisons of side were analyzed with Student t test. Tukey's post-hoc test was used to verify the difference between all relationships. All calculations were performed on R CRAN Source software. In all cases, the significance level was set at  $p < 0.05$ .

**Results:** The Shapiro-Wilk test showed that all groups presented a parametric distribution of the data. There was no statistically significant difference only between the relation of the 3rd premolar and 1st molar groups on the right side. All other relationships showed a difference between measurements on the same side. When comparing the right side to the left side (paired Student's t-test), a statistically significant difference was found only for the 2nd premolar group and the 3rd molar group.

**Conclusion:** Our results suggest that the zygomatic root in the adult dentate *Cebus apella* monkey skull exhibit differences in relation to the premolars and molars axis.

#### POSSIBILITY OF IMPLANT SUPPORTED PROSTHESIS AS A ALTERNATIVE OF TOTAL CONVENTIONAL PROSTHESIS: A MICROCUSTEE ANALYSIS

LAURA PAREDES MERCHAN; LÍVIA FERNANDES PROBST; ANTONIO CARLOS PEREIRA; YURI WANDERLEY CAVALCANTI; ANA CLARA SIMÕES; GLÁUCIA MARIA BOVI AMBROSANO; DENISE DE FÁTIMA BARROS CAVALCANTE  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to estimate the costs of two technologies for the treatment of mandibular edentulous, the inferior conventional total prosthesis (PTCI) and implant supported prosthesis- 2 implants technique (PIS). This study deals with a partial economic evaluation in oral health with a bottom-up approach for the calculation of direct costs.

**Method:** Doubts regarding the clinical and laboratory phases, as well as definition of the appropriate techniques from the perspective of the sus were solved by a panel of experts. To determine the values related to each item, the sources of information available to represent a real and unique national value for each item were consulted and two sites were used: the health price bank, and the price panel website of the ministry of planning, development and management of brazil.

**Results:** The value for produce a PTCI was R\$ 189.89 in the base scenario (ranging from R\$ 151.91 more optimistic scenario to R\$227.89 more pessimistic scenario). The value of a PIS (2 implants) was R\$632.14, ranging from R\$501.83 to R\$753.20. Considering two clinical situations, that is, a) PIS reusing abandoned or disused PTCI and b) PIS as the primary choice, and comparing the costs with the ministry of health transfer of funds in the three scenarios, it was verified that there was only spending above in the most pessimistic scenario of clinical situation A.

**Conclusion:** Concluded that PTCI and PIS are two viable economic technologies and should be induced through public policies due to their positive impacts in several functional domains of health.

#### PRESERVATION OF THE ALVEOLAR STRUCTURE USING ONLY BLOOD CLOT- PRELIMINARY RESULTS

MARIA JÚLIA ASSIS VICENTIN\*; RENATA SILVEIRA SAGNORI; CLAUDIO FERREIRA NÓIA  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of the present study was to evaluate the changes in height and thickness that occurred in dental alveoli after extraction.

**Method:** Ten patients were evaluated, submitted to extraction of dental elements that were allowed to heal naturally and followed up in the postoperative period. Cone beam computed tomography were obtained preoperatively and postoperatively for 3 months and served as a basis for assessing the loss of height and thickness that occurred. The Pearson correlation test with a significance level of 5% was used to evaluate the dimensional changes.

**Results:** The results showed that the vertical loss (mean of 2.99mm) was greater than the horizontal loss (mean of 2.52mm). The statistical analysis pointed out the existence of a very good and significant correlation between these bone losses and also revealed that the higher the loss of height, the greater the loss of thickness. In 8 of the 10 patients in the sample, some grafting was necessary prior to the installation of the implants, thus increasing the morbidity and the time of treatment.

**Conclusion:** It was concluded that the clot was not a viable alternative for alveolar preservation aiming at the posterior installation of dental implants.

#### PROPOSAL FOR THE ESTIMATE OF AGE, BY PHOTOANTROPOMETRY, IN A SAMPLE OF INDIVIDUALS OF 10 TO 21 YEARS

IZABELLA AMARAL BAESTEIRO\*; TÂNIA PASSARINHO MARTINS SANTOS; CARLOS ALBERTO SASSI ETCHEGOYEN; JOÃO SARMENTO PEREIRA NETO; ALEXANDRE RAPHAEL DEITOS; CARLOS EDUARDO PALHARES MACHADO; EDUARDO DARUGE JÚNIOR; LUIZ FRANCESQUINI JÚNIOR  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The present study aimed to obtain identification of individuals based in facial images in frontal norm, of white individuals from southwestern Brazil, coming from the Federal Police image bank in three age group, based on metric measures.

**Method:** The sample consisted in 1.245 facial images of brazilian individuals measures according methodology elaborated by Flores (2014) and FISWG. Specifically, facial measures were made in the facial images from de Federal Police (Brazil) after approval by an Ethical Committee (CAAE: 51448515.0.3002.0075). Within this context the sample was divided into three subgroups according age range, Group 1 (10-13 years), Group 2 (14-17 years) and Group 3 (18-21 years) distributed by sex. Initially the date was submitted to Kolmogorov-Smirnov test to verify the Normality and to Test t to determine the sexual dimorphism and following the Linear Regression and Discriminant Analysis by IBM@ SPSS@ 25 Statistics.

**Results:** The Linear Regression, referring to Group 1 (10 to 13 years), 41.8% of the measures used explain the age variation; Group 2 (14 to 17 years) this value was 55.5%; Group 3 (18 to 21 years) 46.9%. In the male, the results are much more significant than in the female, due mainly to the later facial growth and to present a longer period of adolescence, which makes it easier to distinguish between age groups.



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**Conclusion:** After the Statistics analysis its possible concluded that there is the possibility of using the present study in Forensic Facial Identification, through the proposed method.

**PSYCHOLOGICAL VARIABLE IN TMD INTERVENTIONS: ANALYZING REVIEWS**

RAMON MARIN; GUSTAVO SATTOLO ROLIM; KAREN MENDES GRANER; ANTONIO BENTO ALVES DE MORAES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Temporomandibular disorder (TMD) has been investigated under a multifactorial approach, which has assumed that Psychological factors may have a substantial role as a causative factor. However, there is no conclusive data about the main role of these factors, neither as causes nor as consequences of this joint problem. Through a literature review, this project tried to understand how psychological factors participates in TMD and how the interventions has integrated these variables in their procedures.

**Method:** Three data basis were used: PubMed, Scopus and Web of Science. In all of them the combinations of keywords for searching was the same. In a second step of this procedure, it was made a selection of review studies, published between 2000 and 2017. All the selected articles should be written in english. As another election criteria, the articles must present some kind of analysis about psychological related interventions, that tries, in some sense, to improve the life quality of TMD patients, or reduce their symptoms.

**Results:** After these three steps, all the duplicated review articles were excluded of the sample. It was found, in the first searching using the keywords combination, 4,092 articles in all of the three bases. There were 7 articles selected by these criteria and all of them were analyzed.

**Conclusion:** It can be seen that all of these review articles do not show clearly the psychological factors role, what could be explained by the lack of a clear definition or a misunderstanding of the critical variables considered as psychological interventions.

**PULPAL REVASCULARIZATION: CASE REPORT**

KAROLLYNE RUBERTAGUIAR; RÚBIA CAUS PEREIRA

FAESA

**Aim:** Endodontic treatment of incomplete rhizogenesis and pulpal necrosis has received a new treatment approach: revascularization. Clinical evidence shows that pulpal revascularization seems to be a more promising alternative than apicification because it refers to a procedure that can restore the functionality of the apical region.

**Method:** The aim of this study was to report the case of a 14-year-old female leucoderma patient who attended the dental office with a history of extensive caries, incomplete rhizogenesis, and pulp necrosis on tooth 47. The chosen approach was pulp revascularization, in conservative treatment. After the complete removal of caries and access to the canals, disinfection with 2% gel chlorhexidine and the use of endodontic files K # 10, # 15 and # 20 were performed to achieve patency and to stimulate bleeding to obtain the clot. Then the MTA® was inserted to form a plug at the input of the channels. Above the MTA® was placed Coltosol and CIV as temporary sealing. After 2 months the onlay of e-max was installed and the tooth rehabilitated. Follow-up was performed every 3, 6, 12, 18 and 48 months, and the pulp sensitivity test (Endo-ice) was positive, and radicular formation was observed in the radiographic analysis.

**Results:**

**Conclusion:** We can conclude from this case report that pulpal revascularization is an alternative for the treatment of incomplete rhizogenesis, with pulp necrosis, with a greater possibility of root formation and recovery of pulp vitality.

**PULPOTOMY IN PRIMARY TEETH: WHAT'S NEW? A CRITICAL ANALYSIS OF LITERATURE**

CYNTHIA LUIZA LOPES DE OLIVEIRA; FERNANDA MIORI PASCON

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study aimed to analyze and update available scientific literature about clinical and radiographic results of agents used for pulpotomy in primary teeth.

**Method:** A previous research was done in 2012, as a partial fulfillment of the requirement for degree of Doctor of Dental Surgery, reaching literature from 1997 to 2011, using key-words: endodontics; tooth, deciduous; drug utilization review. The present research selected studies over 2012 to 2019 using key-words: clinical trials and pulpotomy and primary teeth. Selected studies should include randomized clinical trials and specify the material used in pulpal exposition due to caries or trauma in primary teeth. Relevant publications were selected through research on electronic database (PubMed). Studies were analyzed regarding the methodologies and results were described.

**Results:** It was selected 34 studies (2012-2019) reporting primary teeth treated with formocresol (15 studies), ferric sulfate (FS) (8 studies), calcium hydroxide (HCA), sodium hypochlorite (SH) and laser (6 studies each), mineral trioxide aggregate - MTA (18 studies) and Biodentin (8 studies). MTA still a very approached material, presenting 52,9% of all 34 articles, followed by formocresol (44%), Biodentin and FS (23,5% between 2014-2019 and 2012-2018), Laser, HCA and SH (17,6% between 2012-2018).

**Conclusion:** The greatest difference until now was the discovery of Biodentin as a coating material for pulpotomy, due to the similar results compared to MTA, and Biodentin is considered a good MTA substitute. However, formocresol is still very used and also showed high rates of clinical and radiographic results.

**QUALITATIVE FORENSIC ANTHROPOMETRY: CRANIOSCOPY**

DIANA MARIA SOUZA E COUTO; LARISSA STASIEVSKI; PAULO ROBERTO NEVES; NIVIA CRISTINA DURAN GALASSI; CARLOS ALBERTO SASSI ETCHEGOYEN; JULIA VITORIO OCTAVIANI; JOÃO SARMENTO PEREIRA NETO; LUIZ FRANCESQUINI JUNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to verify the efficacy of the qualitative evaluation of the skull and mandible for estimation of sex, with the Brazilian mixed population.

**Method:** For this purpose, 201 skulls and their respective jaws, from the Odontolegal Biobank of the FOP / UNICAMP, were studied, in which 30 characteristics were identified as dimorphic of a total of 52 according to Coma (1999). The obtained data were confronted with the real sex cataloged next to the records of the Biobank. Subsequently, the degree of agreement was measured using the Kappa test ( $\alpha = 0.05$ ).

**Results:** It was verified that some characteristics should not be used for sex determination [Weight and Temporal Crises], since they do not present statistical significance in the concordance test. The variables: Glabella, Angles and Strokes, Facial Physiognomy, Chin, Jaw size, Skull base, Depth of mouth, Nasal aperture, prominence of the supraorbital region, Orbits, Mastoid processes, Alveolar arches, Zygomatic arch, Orbital border / Supraorbital protuberance, and supra-mastoid ridges and ridges presented moderate agreement and were the best descending order for the qualitative evaluation of sex, and should be used for this in conjunction with quantitative anthropometric methods.

**Conclusion:** It is concluded that the qualitative analysis can be used in the process of sex identification.

**RAPAMYCIN ON THE TREATMENT OF MUCOEPIDERMOID CARCINOMAS AND THE RELATIONSHIP WITH CANCER STEM CELLS**

LEONARDO AMARAL DOS REIS; RENATA LUCENA MARKMAN; LIANA PRETTO WEBBER; PABLO AGUSTIN VARGAS; CRISTIANE HELENA SQUARIZE; JACKS JORGE; ROGERIO M CASTILHO

PIRACICABA DENTAL SCHOOL AND UNIVERSITY OF MICHIGAN SCHOOL OF DENTISTRY

**Aim:** Our aim was to explore the role of mTOR signaling pathway, commonly found upregulated in solid tumors including MEC, Oral Squamous Cell Carcinomas (OSCC), and its population of cancer stem cells (CSC). We also explored the potential implication on the disruption of the mTOR signaling on the expression of the clock gene family BMAL1 and in tumor behavior using the specific mTOR inhibitor Rapamycin.

**Method:** In this research we used immunofluorescence of tumor tissue, MEC cell culture (mucoepidermoid carcinoma) treatment with rapamycin, cell immunofluorescence, flow cytometry, invasion and migration assay, as well as sphere formation assay.

**Results:** We showed that MEC is endowed with high expression levels of mTOR and BMAL1. Administration of Rapamycin demonstrates a potent anti-proliferative activity in MEC cells, along with the ability to reduce tumor invasion and migration. We also found that Rapamycin is an effective modulator of the core clock gene BMAL1. Unexpectedly, inhibition of mTOR signaling resulted in the proliferation of CSC in MEC.

**Conclusion:** These findings suggest that Rapamycin have different effects on CSC of different solid tumors. The administration of Rapamycin was efficient in treating MEC tumors pois inibiu a via de sinalização mTOR, diminuiu a invasão e migração, porém, Rapamycin failed in disrupting the population of CSC from MEC.

**RED COMPLEX BACTERIA IN SYMPTOMATIC ENDODONTIC INFECTIONS**

GABRIEL ROSA CIRINO; ESTER DE SOUSA SIVIERO; MARIA EDUARDA AGUIAR PRADO; EZEQUIEL GABRIELLI; RAFAELA CASADEI CHAPOLA; AUGUSTO RODRIGUES LIMA; MAICON RICARDO PASSINI; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The anaerobic microorganisms components of the Socransky Red Complex present severe manifestations in periodontal diseases. The objective of this study was to identify the presence of Treponema denticola, Porphyromonas gingivalis, Tannerella forsythia in necrotic root canals and in acute apical abscesses associated with these canals.

**Method:** Ten patients with endodontic disease were diagnosed as painful symptomatology. Microbiological samples were collected from the root canal and from the abscessing exudate before the chemical-mechanical preparation. The bacterial DNA was extracted from the samples. Two PCR reactions were performed. The first reaction was carried out with universal primers and the second reaction with species-specific primers of the investigated bacteria, directed to the 16S and 23S regions. The products were analysed by agarose gel electrophoresis.

**Results:** The results indicated a higher prevalence of Socransky Red Complex bacteria in the abscess site when compared to the necrotic root canal. In addition, it was possible to detect a higher prevalence of Treponema denticola than the other species of the complex.

**Conclusion:** In conclusion, the microbial components of the Socransky Red Complex are important pathogens found in the acute apical abscess. Support: FAPESP 2017/18459-0; 2015/23479-5, CAPES & CNPq 308162/2014-5.

**REHABILITATION OF SMILE DISHARMONY THROUGH PERIODONTAL AND PERI-IMPLANTER PLASTIC SURGERY AND PROSTHETIC REHABILITATION**

ROBERTA ANDRADE REIS; RENATA PEREIRA; BRUNA GUERRA; FLAVIO AGUIAR; RENATO CASARIN

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Gingival deformities around implants is a challenge condition in the prevention and treatment, specially at anterior region. This case report aims to explore different approaches to treat a smile disharmony in anterior region.

**Method:** A patient (AE, 22years, female) look for treatment due to aesthetic discomfort with smile. The patient presented an implant in lateral incisor with no bone loss but mucosal deformity and colour alteration. Moreover, the zenith line was altered, showing alteration in length-width ratio at central incisors and canines. A multidisciplinary approach was indicated, including gingival/mucosal correction and prosthetic rehabilitation. Initially, a palatal connective tissue graft was harvested and applied at implant buccal surface. At the same time,



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gingivectomy was performed at all anterior region, correcting zenith disharmony. After tissues healing, bleaching and prosthetic rehabilitation were done, creating a harmonic and healthy smile.

**Results:**

**Conclusion:** The multidisciplinary approach can be an ideal option to treat anterior smile disharmony in implants and teeth.

#### RELATIONS BETWEEN INSTRUCTIONS AND SELF-CARE BEHAVIORS OF PATIENTS SUBMITTED TO THIRD MOLAR EXTRACTION

BRUNA TOZZI; ANTONIO BENTO ALVES DE MORAES; PEDRO BORDINI FALEIROS  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To assess the relationship between patients' self-care behaviors and the dental care guidance they received after third molar extraction.

**Method:** The study was conducted with two groups of participants, the first one with 10 and the second one with 12 participants, by both genders, aged between 18 and 25 years old. The procedure was conducted in the following steps: 1) only for one group of participants, a video with an actor simulating the desired self-care behaviors was shown right after the surgery; 2) both groups were submitted to a questionnaire about the surgery and comprehension of the given information; 3) participants were instructed to fill up a form on pain, bleeding and swelling, during the recovery week; 4) on the suture removal day, participants were submitted to an interview that had as purpose investigate which of the self-care instructions of the post-surgical were remembered.

**Results:** In the post-surgical moment, participants that watched the video remembered more of the given information about self-behaviors when compared to participants who didn't watch it. However, in contrast of what was expected, on the suture removal day, participants submitted to the video remembered less of the given information about self-care behaviors when compared to the group that didn't see the video. Data indicated these participants didn't have the self-care behaviors instructed by the dentists reporting to have more pain, bleeding and swelling what may have helped the remembering on the suture removal day.

**Conclusion:** The video shown seems to be effective in promoting preventive self-care behaviors on the recovery week.

#### RELATIONSHIP BETWEEN CYTOKINE PATTERN AND LIPOPOLYSACCHARIDES OF DIABETICS AND NORMOGLYCEMICS: A CASE-CONTROL STUDY

LARA DE ANCHIETA CAPONI; THIAGO PEREZ RANGEL; AURELIO AMORIM REIS;  
FRANCISCO HUMBERTO NOCITI-JUNIOR; ENILSON ANTONIO SALLUM; RENATO CORRÊA VIANA CASARIN  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Periodontitis is an inflammatory disease of multifactorial etiology, resulting if untreated in tooth loss. Systemic conditions such as diabetes mellitus (DM) can alter its severity and progression. Studies have shown that DM promotes a dysbiosis pattern of biofilm, through higher number of gram-negative bacteria which may change endotoxin content in the subgingival environment resulting in a faster periodontal destruction.

**Method:** We selected 30 patients, 15 patients diagnosed with type 2 DM at least 2 years and 15 normoglycemics, all diagnosed with generalized severe chronic periodontal disease. Gingival crevicular fluid were collected to endotoxin lipopolysaccharides (LPS), cytokines and metalloproteinases analysis.

**Results:** On DM group presented high levels of LPS in the subgingival environment ( $292,3 \pm 282,2$ ), when compared with normoglycemic ones ( $26,8 \pm 16,2$ ) ( $p < 0.05$ ) and in relation to the levels of cytokines, individuals with DM presented higher levels of IL-17, IL-1 $\beta$  and MMP-2 ( $p < 0.05$ ), than normoglycemics. Correlation was performed, showing a modulation of IFN- $\gamma$  ( $0.538(0.04)$ ), IL- ( $0.820(<0.0001)$ ), and MMP-2 ( $0.880(<0.0001)$ ), while negatively modulating IL-10 ( $-0.798(<0.001)$ ) in DM group. This correlation was not seen in normoglycemic group.

**Conclusion:** Diabetic patients had a higher local level of LPS than normoglycemics. In addition to these elevated levels, in diabetic patients, LPS demonstrated the modulation of different cytokines, suggesting a change of modulation due hyperglycemic environment, positively modulating IFN-  $\gamma$ , IL-17 and MMP-2 while negatively modulating IL-10.

#### RELATIONSHIP BETWEEN OBESITY, EARLY CHILDHOOD CARIES, AND ORAL/GUT MICROORGANISMS IN PRESCHOOL CHILDREN

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RENATA O. MATTOS-GRANER; THAIS MANZANO PARISOTTO  
SÃO FRANCISCO UNIVERSITY

**Aim:** Controlling worldwide diseases like obesity and early childhood caries is one of the most important public health challenges nowadays. Therefore, studies identifying risk indicators related to these diseases should be encouraged. The present study aimed to assess the relationship between obesity, oral/intestinal microorganisms and early childhood caries.

**Method:** Ninety six preschoolers (3-5-years) from Bragança/SP were assigned into 4 groups: caries+obesity ( $n=25$ ); caries-free+obesity ( $n=16$ ); caries+eutrophy ( $n=32$ ) and caries-free+eutrophy ( $n=23$ ); Streptococcus mutans, Streptococcus sobrinus Firmicutes and Bacteroidetes were enumerated in dental biofilm and in fecal samples by real-time polymerase chain reaction. Data were analyzed by Wilcoxon test and logistic regression ( $\alpha=5\%$ ).

**Results:** There were no significant differences between the counts of Firmicutes in the oral cavity and in the fecal samples regarding all studied groups ( $p > 0.05$ ). On the other hand, counts of Bacteroidetes were different in all groups ( $p < 0.05$ ). The logistic regression models revealed that higher levels of Streptococcus mutans in the dental biofilm ( $OR\ 8.2$ ,  $p < 0.0001$ ) and higher counts of Streptococcus sobrinus in the fecal samples ( $OR\ 8.4$ ,  $p = 0.01$ ) were closely related with ECC; moreover, lower fecal counts of total bacteria ( $OR\ 2.4$ ,  $p = 0.04$ ) was associated with obesity.

**Conclusion:** In conclusion, the number of bacteria from Firmicutes phylum in the oral cavity

may reflect the amount from the gut in the early childhood. Furthermore, Streptococcus mutans/Streptococcus sobrinus were linked to caries while low numbers of total bacteria was linked to obesity.

#### REPORT OF EXPERIENCE IN THE SOCIAL PROJECT "RIO DE SORRISOS"

ALEXA NICOLE GUERRERO ÁIZPURUA; ANANDA FINI ROCCIA; BEATRIZ OMETTO SAHADI; JOÃO CARLOS LEME JUNIOR; DAGMAR DE PAULA QUELUZ  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Oral health is an integral part of the general health of the child. One of the challenges of dentistry is prevention of dental caries, the most common chronic illness in children, which results in the destruction of the calcified structures of the tooth. The aim of this work is to report the experience of the participation of undergraduate students in Dentistry, in the social project "Rio de Sorrisos", developing actions of promotion and prevention in oral health.

**Method:** Experience report. The activities developed were reception, educational activities, supervised brushing, clinical dental care.

**Results:** The children were taken through the parents to the reception where the informed consent form was given, authorizing that they agree to the treatment and the child was referred to the educational activities. The educational activities for children consisted of collective activities in which subjects such as disease prevention and health promotion, especially oral health, were addressed. We develop: oral hygiene instruction (brushing techniques), relationship between diet and the beginning of the formation of caries lesions, through play activities, as a theatrical play, arousing the attention and interest of the same. Clinical care was to remove the outbreaks of infection through atraumatic restorative treatment. All treatment was carried out in a humanized, empathic way and respecting biosafety standards.

**Conclusion:** It can be concluded that the "Rio de Sorrisos" project contributed to the health of the population by providing preventive care to children, in order to promote oral health for as many people as possible.

#### REVIEW OF LITERATURE ON PARENTS' ANXIETY AND CHILDREN'S BEHAVIOR DURING DENTAL ATTENDANCE

THAIS CRISTINA CORREA SIMOES; MARÍLIA VIEIRA ZERBETTO; BRUNNA VERNA CASTRO GONDINHO; CLÁUDIA ALINE DE BRITO OLIVEIRA; LUCIANE MIRANDA GUERRA; JAQUELINE VILELA BULGARELI; ROSANA DE FÁTIMA POSSOBON; KARINE LAURA CORTELLAZZI MENDES  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The objective of this study was to perform a bibliographic survey about the influence of parents' anxiety on the behavior of children, aged 0 to 5 years, during dental care.

**Method:** The search was performed in the Virtual Health Library, from the LILACS, Pubmed and Scielo databases, with national and international publications (2007 to 2017).

**Results:** We used the descriptors: Anxiety to dental treatment, Dental care, Child behavior and Parents. Initially, 87 articles were found, which were filtered through the steps: title and year; abstract and full reading; Finally, 5 articles were used in the study.

**Conclusion:** Most publications point out that there is no relationship between parental anxiety and children's behavior during dental care. It is important to consider aspects such as patient / dentist interaction, techniques such as conditioning / management of child behavior, child's age, parental adherence. Thus, dental care for children is a complex context.

#### SALIVARY CYTOKINE PROFILE OF CHILDREN FROM AGGRESSIVE PERIODONTITIS FAMILIES

LARISSA BIZARRE; GABRIELA BONILHA; MABELLE DE FREITAS; AURÉLIO AMORIM REIS; FRANCISCO HUMBERTO NOCITI JÚNIOR; MÁRCIO ZAFFALON CASATI; RENATO CORRÊA VIANA CASARIN  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** Aggressive periodontitis (AgP) is a rare and rapidly progressing disease affecting adolescents and young adults, with a significant occurrence in the offspring of affected individuals

**Method:** Children (between 6 to 12 years) from parents affected by AgP (AgP Group,  $n = 20$ ), and children from parents with periodontal health (Health Group;  $n = 20$ ), paired for age and gender, were selected. Unstimulated saliva was collected and the concentration of inflammatory cytokines were analyzed on the Luminex platform. Clinical data were collected by calibrated examiner. Data from the enzyme-linked immunosorbent assay were compared using the Mann-Whitney test and correlated with the Spearman test and Multiple Linear Regression ( $p < 0.05$ ).

**Results:** No statistically significant difference between the groups were observed for IL-10, IL-1 $\beta$ , TNF- $\alpha$ , IL-17, IFN- $\gamma$  and IL-17 levels ( $p > 0.05$ ). However, IL-4 levels, considered to be an anti-inflammatory cytokine, were higher in the Health group ( $15.3 \pm 4.8\text{pg / mL}$ ) than in the AgP group ( $26.4 \pm 9.8\text{pg / mL}$ ). The final regression model indicated that there was a negative correlation between the concentration of IL-4 in saliva and bleeding at the probing.

**Conclusion:** Thus, it can be concluded that the offspring of individuals with AgP presented alterations in the inflammatory pattern in saliva, and IL-4 levels are predictive of the gingival bleeding pattern, even in the presence of biofilm.

#### SECONDARY CARIES INHIBITION POTENTIAL OF CONVENTIONAL AND BULK-FILL BIOACTIVE COMPOSITES

BEATRIZ DE OLIVEIRA MEDEIROS; DAYLANA PACHECO DA SILVA; CAMILA SIQUEIRA SILVA COELHO; MATHEUS KURY; MAYARA DOS SANTOS NORONHA; MARCELO GIANNINI; VANESSA CAVALLI GOBBO  
PIRACICABA DENTAL SCHOOL - UNICAMP

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**Aim:** This study evaluated secondary caries inhibition potential of conventional or bulk-fill bioactive materials.

**Method:** Fifty enamel blocks were selected according to surface microhardness. Standard cavities were prepared, a dual-curing universal adhesive was applied and cavities were restored with (n=10): bioactive conventional composite (BC, Beautifil II), bioactive bulk-fill composite (BB, Active Bioactive), a positive control (C - resin modified glass-ionomer) and two negative controls, a conventional composite (CC, Filtek Z350) and a bulk-fill composite (BF, Filtek Bulk). Specimens were subjected pH cycling which comprised 4h of immersion in remineralizing solution and 20 h in demineralizing solution for 7 days. Specimens were longitudinally sectioned and cross-sectional Knoop microhardness (CSM) was conducted. Mean (KHN) values were converted into carious lesion area ( $\Delta S$ ) and data were statistically analyzed by one-way ANOVA, with a significance level of 5%.

**Results:** No differences of  $\Delta S$  were observed among groups ( $p > 0.05$ ) indicating that the area of the secondary caries was similar, regardless the restorative material used.

**Conclusion:** In conclusion, bioactive conventional or bulk-fill composites were unable to control secondary caries development and exhibited similar inhibition potential than conventional, bulk-fill composites.

#### SEX DETERMINATION IN A BRAZILIAN SAMPLE FROM CRANIAL MORPHOMETRIC PARAMETERS

ANA FLAVIA DE CARVALHO CARDOZO; CARLOS ALBERTO SASSI ETCHEGOYEN; NÍVIA CRISTINA DURAN GALLASSI; PAULO ROBERTO NEVES; VIVIANE ULBRICHT; ALICIA MARIEL PICAPEDRA PALOMEQUE; JOÃO SARMENTO PEREIRA NETO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** In the present study, eleven measures were analyzed aiming to elaborate a reliable method for estimating sex. The study was approved by CEP / FOP / UNICAMP CAAE38522714.6.0000.5418.

**Method:** A total of 186 skulls were selected, of which 100 were males and 86 females, aged between 18 and 94 years at death, belonging to the Osteological Biobank of FOP/UNICAMP. Four linear measurements were made in the sagittal plane (Lambda-Nasion, Lambda-Rhinion, Lambda-Nasospinale, Rhinion-Nasospinale) and seven linear measurements in the horizontal plane (Zygomaxillare-Zygomaxillare, Lambda-Incisivae Foramen, Lambda-Right Zygomaxillare, Lambda-Left Zygomaxillare, Basion-Incisivae Foramen, Basion-Right Zygomaxillare and Basion-Left Zygomaxillare), by means of a digital sliding caliper with a resolution of 0.01mm (150 mm - Digimess®, SP, Brazil), or a digital spreading caliper with a resolution of 0.01mm (203 mm - Igaging®, CA, United States of America).

**Results:** It was found that of the measurements performed only the Lambda-Nasospinale and Rhinion-Nasospinale, in the sagittal plane, and the Zygomaxillare-Zygomaxillare and Lambda-Incisivae Foramen, in the horizontal plane, were significantly dimorphic. Then, two predictive mathematical models of sex were formulated, one of logistic regression (logit (p)) = -29.5393 + (0.1057 x La-Ns) + (0.2985 x Rhi-Ns) for the sagittal plan and logit (p) = -24.4233 + (0.1089 x ZgM-ZgM) + (0.0777 x La-If) for the horizontal plan and another of conditional inference trees with accuracy rates of 78,5% and 77,42%, and of 68,28% and 72,04%, respectively.

**Conclusion:** It was concluded that mathematic models obtained allow us to estimate the sex.

#### SEXUAL DIMORPHISM IN CLAVICLES

DÉBORA COSTA RUIZ; BRUNA CAROLINE PINCINATO; PAULO ROBERTO NEVES; ALICIA MARIEL PICAPEDRA PALOMEQUE; CARLOS ALBERTO SASSI ETCHEGOYEN; FRANCISCO CARLOS GROPPPO; JOÃO SARMENTO PEREIRA NETO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The study analyzed 193 left clavicles (83 clavicles of female individuals and 110 of male individuals) belonging to the osteological and tomographic Biobank of Prof. Eduardo Daruge from FOP/UNICAMP in order to evidence the presence of sexual dimorphism in skeletal clavicles.

**Method:** The measures studied were the maximum length of the left clavicle, the mean perimeter of the left clavicle, measure of length and width and length of the medial and distal epiphyses. The perimeter measurements were obtained through a tape measure using the perimeter of the midpoint of the clavicle, while the height of the medial epiphysis, width of the medial epiphysis, height of the distal epiphysis and width of the distal epiphysis were obtained through the use of a digital caliper, being recorded in spreadsheet. An analysis was performed using the Kolmogorov-Smirnov test, for normality presentation; Levene test, for homoscedasticity presentation; Unpaired t test, to compare the sexes that target each measure separately; Forward Stepwise - Wald, to calculate the logistic regression and Nagelkerke, to show an influence of the variables on the variant found in sex.

**Results:** It was possible to construct a mathematical model to determine the sex: Sex = - 27.8 + (1.39 x Clavicle maximum length) + (1.58 x Clavicle mean perimeter) + (0.10 x Medial epiphysis width). The method results in 87.3% of sensitivity, 84.3% of specificity and 86.0% of accuracy.

**Conclusion:** It is concluded that the model obtained allows estimation of sex in missing skulls. All measures studied are dimorphic and all of them were larger in men.

#### SEXUAL DIMORPHISM IN MANDIBULAR CONDYLE BONE PARAMETERS OF THE CEBUS APPELLA MONKEYS

ANA PAULA GUIDI SCHMIDT; ALEXANDRE RODRIGUES FREIRE; RAFAEL ARAUJO; PAULO ROBERTO BOTACIN; FELIPPE BEVILACQUA PRADO; ANA CLÁUDIA ROSSI

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to evaluate the bone parameters of the trabecular micro architecture of the mandibular condyle of the Cebus apella monkeys.

**Method:** For this study, six computerized microtomography of the mandibular condyle of Cebus apella monkeys was performed. After scanning and andreconstruction of the 3D images, the morphometric parameters were obtained in the CTAnalyser Software (SkyScan, Bruker, Belgium). The statistical analysis, performed in Software R (CRAN Source), followed abnormal distribution, and when the data were parametric, Student's t test was applied for side and sex variables, and for non-parametric data the Wilcoxon test was applied for the same variables. The significance level considered was 5%.

**Results:** There were differences in some parameters of the trabecular bone pattern between males and females. For the sex variable, there were differences in BV, Tb.Th and connectivity parameters being higher in males; and in the parameter Tb.N, being higher in females. For the variable side, differences were found in the parameters Tb.Th and Tb.N.

**Conclusion:** The trabecular micro architecture of the mandibular condyle of the Cebus apella monkey showed sexual dimorphism in related parameters with volume and trabecular orientation.

#### SEXUAL DIMORPHISM: LINEAR MEASUREMENTS IN MEDIUM SAGITAL SECTION IN COMPUTERIZED TOMOGRAPHIES

NÍVIA CRISTINA DURAN GALLASSI; HAMILTON ROJAS MENDONÇA; PAULO ROBERTO NEVES; VIVIANE ULBRICHT; JAQUELINE VILELA BULGARELI; DEBORAH QUEIROZ DE FREITAS FRANÇA; JOÃO SARMENTO PEREIRA NETO; LUIZ FRANCESQUINI JÚNIOR

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** In the present study, it was sought to perform linear measurements on computerized tomographies in order to verify if they are dimorphic and would provide a reliable logistic regression model for the estimation of sex.

**Method:** Thus, 117 computerized tomographies of male skulls and 89 CT of female skulls were used, these data are from the Osteological and Tomographic Biobank of FOP / UNICAMP, all with known age, ancestry and cause of death. Measured with OnDemand3D® software, the measurements were: Turkish Sella (center) to Nasal Suture; Turkish Sella (center) to Anterior Nasal Spine; Turkish Sella (center) to Posterior Nasal Spine; Turkish saddle (center) to Ínio; Nasal suture up to ENA; Nasal suture to PN, in medium sagittal section. It was approved by CAAE 54171916.0.0000.5418. It was verified that all measures studied are dimorphic. In the logistic regression, the values of Y were also assumed, which also represents a dependent variable (Sex) and dichotomous (0,1), after testing the seven measurements proposed by the study in the Wald test and the ratio and likelihood.

**Results:** The results showed that the  $\beta$  of the measures PPST - ENA, SNRE - ENA; SNRE - ENP and ENA - ENP presented statistical significance, being selected for the determination of the multiple model. A logistic regression model was created called Mendonça SEX 2018 [Logito: -19,909 + 0,177 (SNRE-ENA) + 0,231 (ENA-ENP)].

**Conclusion:** The obtained model can be used for the determination of sex, since it has an accuracy of 77.2% being effective in predicting the sex.

#### SHAPING ABILITY OF RECIPROC AND RECIPROC BLUE SYSTEMS ON THE FORAMEN: ANALYSIS IN SEM

ARTHUR PIMENTEL BARROSO; JEFFERSON JOSÉ DE CARVALHO MARION; DANIEL RODRIGO HERRERA; THAIS MAGESTE DUQUE; EDY CARLOS DE ALENCAR SOARES; RAFAEL AIELLO BOMFIM; ALEXANDRE AUGUSTO ZAIA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** During the chemical-mechanical preparation, one of the maneuvers used to perform the cleaning of the root canal system is the foraminal enlargement. This procedure is intended to remove biofilms and scrapings of contaminated dentin that may be present in the apical foramen.

**Method:** Twenty roots with radicular curvature of 10° to 20° and foramen diameter corresponding to a K#20 file were selected and inserted in a silicone platform. SEM images were obtained with an increase of 50 to 200 times at 15kv, before and after preparation. The foramina were classified according to their morphology (round, oval or irregular) and the images were divided into eight parts, in sequence, calculated the area in mm² of each part.

**Results:** The initial and final areas presented statistical difference, however, there was no difference between the final means. Regarding effectiveness, RB presented a lower number of segments without alteration of the initial area. Analyzing the changes in the geometric shape of the apical foramen, the difference was significant for RB. As for the wear pattern, there was difference when the foramen was irregular, and the final area was larger than the other formats, regardless of the type of instrument used. RB presented greater final areas in the irregular foramen, for round and oval there were no statistically significant differences between the groups.

**Conclusion:** The authors concluded that the RB presented a greater modeling capacity of the foramen and that the amount of area worn after the preparation seems to be more related to the initial geometric shape of the foramen than to the mechanical properties of the instrumentation systems.

#### SOCIAL NETWORKS AS A RESOURCE FOR HEALTH PROMOTION AND EDUCATION

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To present HumanizaSUS Network: social network experience developed as a space for strengthening public health policies in the Brazilian context.

**Method:** Literature review in databases.

**Results:** It is an arena opened by the National Humanization Policy (NHP) (General Coordination of the NHP in the Ministry of Health) to broaden the dialogue around its principles, methods and guidelines HumanizaSUS Network (HSN) is a social network of people interested and / or already involved in processes of humanization of management and care in the Brazilian Public Health Care System (SUS). Better known as HSN, it is the social

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network of SUS workers, managers and users that daily act with the desire to make a unique health system with equity, universal access and integral health care. It is a space for sharing narratives about different ways of making the SUS happen, a place to share your experiences and broaden the dialogue. It broadens the public and democratic character of collective health and of activating a collective intelligence aimed at the constant improvement of SUS. The HSN is a network of mutual support to address the challenges posed to the humanization of management and care in SUS. It is one of the devices offered by the NHP, to foment the formation of networks, the expansion of the dialogue and the collaborative power, power of production, production of the common good.

**Conclusion:** We conclude that the HumanizaSUS Network can function as a device for training, for the production of experiences, especially for the collaborative creation of spaces for sharing experiences and collective reflection on the daily construction of a public policy.

### SODIUM FLUORIDE TREATMENT DID NOT IMPROVE THE LONGEVITY OF RESIN/DEMINERALIZED DENTIN BONDING STRENGTH

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to determine the effect of remineralising treatment of 0.2% sodium fluoride (NaF) on bonding strength longevity of the resin/demineralized dentin (DD) after storage in Simulated Body Fluid (SBF) under modified simulated pulpal pressure (MSPP).

**Method:** The sample consisted of 48 caries-free third molars and the DD production was made by biological method. The teeth were randomly distributed into 6 groups (n=8) according to the treatment of dentin surfaces: G1: Sound dentin (SD); G2: DD; G3: DD + 0.2% NaF; and storage time (24-hour; 6-month). Sequentially, the dentin was submitted to bonding procedure with Adper Single Bond 2 and a Filtek Z350 resin composite block (4mm/height) was built over it. The resin/dentin sets were stored in SBF/37°C under MSPP. So, the sets were sectioned in beams (section mean area=1.0 mm<sup>2</sup>) in order to be submitted to microtensile bond strength (μTBS). The failure sites were analyzed by SEM. The μTBS data were submitted to factorial ANOVA and Tukey tests and, Spearman's correlation (97%) and Kruskal-Wallis test were performed to evaluate the failure sites (alfa=5%).

**Results:** NaF showed smaller microtensile bond strength compared to SD (p>0.05) and similar values to DD (p>0.05) at 24-hour and 6-month. In relation to failure sites, DD and NaF presented higher percentage of adhesive failure and, SD more mixed failure (p<0.05) in same times. There was a reduction in the microtensile bond strength and an increase in adhesive fractures over time for all groups (p<0.05).

**Conclusion:** Therefore, the treatment of demineralized dentin with NaF was not effective to improve the resin/dentin bond strength.

### SPLIT CREST TECHNIQUE WITH IMMEDIATE IMPLANT TO TREAT WIDTH DEFECTS OF THE ALVEOLAR RIDGE

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PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study aims to evaluate a reconstructive technique called Split Crest to dental implant placement in alveolar bone with width defects.

**Method:** To achieve this goal, it was selected thirteen patients with absence of superior incisors and presence of both canines and simultaneously width defect on computed tomography evaluation with impair implant placement without a reconstructive technique. Those patients were rehabilitated with dental implants on a two stages approach: 1) Alveolar bone expansion with dental implant placement and; 2) After six months, second stage surgery to load and to prosthesis rehabilitation. Measurements of initial and final bone height and thickness were performed on Dolphin Imaging® 11.5 software. We compared pre and postoperative distance between the nasal fossa to alveolar bone crest evaluating the alveolar height, to measure bone thickness it was measured the distance between the buccal and palatal cortical bone taking the same reference from the median palatal suture from 5 mm and 10 mm above the alveolar crest.

**Results:** Results showed a bone height loss of 0.68mm, and average width gain of 2.97 mm, both analysis were statistically significant (p<0.01). There were any complications due to surgical procedures, 23 implants were installed following the surgical expansion, any implant was lost (100% survival).

**Conclusion:** In conclusion, the Split Crest technique is a viable and predictable technique, allowing for a significant increase in the ridge thickness and a high percentage of implants survival without mayor complications.

### SQUAMOUS CELL CARCINOMA OF THE MAXILLARY SINUS - THE IMPORTANCE OF CONE BEAM COMPUTED TOMOGRAPHY IN THE DIAGNOSIS

EDUARDO HENRIQUE DE CAMPOS; FABIO AUGUSTO ITO; EVELISE ONO; JEFFERSON LUIS OSHIRO TANAKA; ELISA EMI TANAKA CARLOTO; HELITON GUSTAVO DE LIMA; ADEMAR TAKAHAMA JUNIOR  
STATE UNIVERSITY OF LONDRINA

**Aim:** Maxillary sinus carcinoma is a rare malignant neoplasm, representing about 3% of the cases of head and neck carcinomas. In the paranasal sinuses, the involvement of the maxillary sinus corresponds to 80%. Symptoms or manifestations that refer to sinusitis episodes are uncommon. It predominantly affects the elderly, with a slight predilection for male and in more than 80% of cases in advanced stage. This report aims to present a case of squamous cell carcinoma in the maxillary sinus.

**Method:** A 70-year-old male patient was referred the COU-UEL Stomatology Clinic forwarded by a UBS dentist for evaluation of a persistent facial edema. Clinically, the patient presented a painful facial asymmetry, with intra and extraoral edema on the right side in the maxillary sinus

region extending from the orbit to the labial commissure. In the intraoral examination, an ulcerated lesion in the mucobuccal fold, in the same side, was noted. A cone beam computed tomography (CBCT) was requested and revealed a tumor mass invading the entire right maxillary sinus with destruction of the cortical bone and invasion of soft tissues. Then an incisional biopsy was performed by intraoral access. The histopathological analysis revealed a well-differentiated squamous cell carcinoma. The patient was forwarded to treatment where surgical resection, chemotherapy and radiotherapy were performed. In a 3- year follow-up the patient is free of disease without signs of relapse.

#### Results:

**Conclusion:** The CBCT was an accurate and important complementary exam, which in association with the histopathology, allowed the final diagnosis and the primary location of the tumor.

### STATUS OF PERIODONTAL CONDITION IN PREGNANT WOMEN

CAMILLA KAROLINE DE CARVALHO BECKMAN; ALYSSON AMORIM PINTO; MAURÍCIO PEREIRA MACEDO; MARCIO SANTOS DE CARVALHO; ADRIANA DE FÁTIMA VASCONCELOS PEREIRA; SANDRA AUGUSTA DE MOURA LEITE; FERNANDA FERREIRA LOPES; LIANA LINHARES LIMA SERRA  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The present study aimed to analyze the periodontal condition of pregnant women, detecting the presence of gingivitis and periodontitis.

**Method:** Participants were pregnant women who underwent prenatal visits at the Maternal and Child Hospital (HUUFMA) São Luis - Ma, adults (20-35 years), at least 20 teeth, except for third molars. The pregnant women were divided at two stage groups: group 1 - at 0-16 weeks and group 2 - at 17-36 weeks of gestation. The sample consisted of 31 pregnant women. Nine were examined at group 1 and Twenty two were examined at group 2. In group 1, one subject was excluded due to hepatitis B. The present study was approved by the Research Ethics Committee protocol number 1.548.766 and only the patients who signed the consent form participated in the study. Patients were examined periodontally according to probing depth, Bleeding Index and Clinical Attachment Level. The statistical analysis was performed by the "Epi info" program, version 7.2

**Results:** Obtaining results in which 96.67% presented gingival inflammation; 10% had periodontitis and 3.33% had systemic (cardiovascular or diabetic) changes.

**Conclusion:** Thus, among the periodontal diseases, gingivitis was the most common among pregnant women.

### STUDY OF LINEAR MEASURES AND SKULL AREAS FOR SEX AND ANCESTRALITY ESTIMATION

STÉFANY DE LIMA GOMES; VIVIANE ULBRICHT; DORA ZULEMA ROMERO DIAS; JOÃO SARMENTO PEREIRA NETO; EDUARDO DARUGE JUNIOR; LUIZ FRANCESQUINI JÚNIOR  
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**Aim:** In this work we sought to verify the existence of sexual dimorphism and estimate the ancestry through the skull and obtaining a mathematical model and its applicability.

**Method:** It was approved in CEP CAAE 54171916.0.0000.5418. The sample consists of 25 skulls with known sex, age and ancestry and being measured by three distinct time periods having most strong and some regular results. The other skulls of the FOP / UNICAMP Biobank were randomly selected to complete 175 (n = 100%) of which 96 were male and 79 were female. The measures were (SNL, SNB, BL, AO, EE, ENAE and AOA), with the measures SNL + SNB + BL and AOA being the measures EE + ENAD + ENAE. The data were submitted to the Kolmogorov test Sminorv to see normalcy of the data. Tested the 08 variables, by applying logistic regression by Stepwise method-Forward. So, SNL and SNB variables have been defined for the elaboration of model for sexual dimorphism.

**Results:** Resulting in 72.9% sensitivity, 67% specificity and 70.3% of accuracy. T test was applied to the Ancestry and may accept the hypothesis that there is dimorphism for the measures ENAD, ENAE e AOA. The measures carried out and the areas were not significant for the estimation of ancestry. A mathematical model for estimating the Sex (Stéfany Logits Sex = 24,582 + (-0,071SNL) + (-0,127SNB)). It is concluded that the quantitative method developed results in 70.3% of accuracy, showing, therefore, effective in the prediction of sex.

**Conclusion:** It is concluded that the quantitative method developed in 70.3% of accuracy, thus proving to be effective in predicting sex.

### SURGICAL MANAGEMENT OF THE DENTIGEROUS CYST IN THE MANDIBLE: CASE REPORT

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SCHOOL OF THE AMAZON

**Aim:** The dentigerous cyst is one of the main odontogenics of the highest incidence in dentistry, originating from the acuteness of liquid between the reduced epithelium of the enamel organ and the crown of the tooth. Most of the cases present a slow evolution, being able to reach great proportions in its size. The marsupialization is the most complete treatment in cases of large cysts, since it allows the protection of the anatomical structures in any pathological process, followed by enucleation and exodontia of the associated associated tooth.

**Method:** The objective of this study is to report a clinical case of dental cyst in a 14 year old male patient. Clinically, there was a significant increase in volume in the mandibular region of the left side, hardened, restricted mouth opening, absence of secretions, asymptomatic, without alteration of skin color and absence of cervical lymphadenopathy, with evolution of 3

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years and 6 months. It also presented tissue evolution in vestibular mucosa in the region of posterior dental elements below the eye and absence of the tooth 37. The radiographic examination had a radiolucent image, with well delimited sclerotic margins in the region of the mandibular body, extending to the angle and mandibular ramus region, associated with the tooth 37 inclusive.

**Results:**

**Conclusion:** A marsupialization was performed after enucleation and second bone remodeling. Extensive tooth cysts should be surgically treated with marsupialization to reduce lesion size and subsequent enucleation, resulting in less comorbidities and improved recovery.

**SURGICAL TREATMENT OF PEDIATRIC CONDYLAR FRACTURES: LITERATURE REVIEW**

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**Aim:** The purpose of this study was to determine, from a literature review, the fixation method that allows better reestablishment of mandibular function in children, whose condylar fractures were surgically treated.

**Method:** Through a review, scientific papers were selected in different electronic databases, with no time interval. Articles in the English language were considered, such as case series, retrospective and / or prospective clinical studies. The following keywords were used in combination: "condylar mandibular fracture", "children patient", "internal fixation", "pediatric patient", "open treatment" and "treatment type".

**Results:** A total of 301 articles were obtained with the cross-over of keywords and, in the end, we selected 09 papers that were in agreement with the inclusion criteria.

**Conclusion:** The conclusion of this study was that the open reduction and fracture fixation showed good functional results in most of the patients regardless of the type of fixation.

**SURVIVAL OF DENTAL IMPLANTS INSTALLED IN RECONSTRUCTED MAXILLA WITH AUTOGENOUS ILIAC CREST GRAFT - 7-9 YEARS FOLLOW-UP**

FELIPE GERMOGLIO CARDOSO MACEDO; GABRIEL GUILLEN; ALEXANDER SVERZUT; MARCIO DE MORAES; CAROLINA SANTOS VENTURA DE SOUZA; CLÁUDIO FERREIRA NÓIA

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this study was to analyze the survival of dental implants installed in reconstructed maxilla with autogenous iliac crest graft, as well as to assess (by means of a questionnaire) the patient satisfaction with the treatment.

**Method:** Medical record review and clinical/radiographic assessment of 10 patients with severe maxillary atrophy who had undergone reconstruction with autogenous iliac crest graft and rehabilitation with dental implants between 2008 and 2011. Patients were assessed for the survival of the implants, considering: implant diameter and length, smoking status, diagnosis of diabetes, type of loss and region of the lost implants. In addition, a questionnaire with specific questions on the patients' satisfaction with the treatment was applied.

**Results:** Seventy-six implants were installed in the sampled patients, and only one loss was observed (late loss in the anterior maxilla region) after average follow-up of 7.9 years, which corresponds to a 98.60% survival rate. Most of the installed implants had a regular diameter and average length (most frequent = 3.75x10mm). One sampled patient was diabetic, and a second patient was both diabetic and a smoker. No loss of implants was observed in these two patients. All patients reported being completely satisfied with the treatment and would undergo the procedure again or refer it to a friend/relative.

**Conclusion:** The results of this study suggest that the reconstruction of the maxilla with autogenous iliac crest graft provides adequate survival of implants and patient satisfaction.

**SYNTHESIS OF BIOCOMPATIBLE N,BI-CODOPED TiO2 COATING WITH VISIBLE-LIGHT-INDUCED ANTIBACTERIAL EFFECT FOR DENTAL IMPLANT**

BRUNA EGUMI NAGAY; CAROLINE DINI; JAIRO MATOZINHO CORDEIRO; ANTÔNIO PEDRO RICOMINI-FILHO; ERICA DORIGATTI DE AVILA; ELIDIANE CIPRIANO RANGEL; NILSON CRISTINO DA CRUZ; VALENTIM ADELINO RICARDO BARÃO

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This study developed a TiO<sub>2</sub> coating codoped with nitrogen (N) and bismuth (Bi) via plasma electrolytic oxidation (PEO) on the surface of commercially pure titanium (cpTi) discs to investigate the photocatalytic and antibacterial activities of the coating under visible light (VL) with reactivation potential.

**Method:** Polished cpTi discs were used as control (cpTi). The experimental coatings via PEO consisted of TiO<sub>2</sub> doped with N (TiO<sub>2</sub>N), additional N via urea (U-TiO<sub>2</sub>N), Bi (Bi-TiO<sub>2</sub>N) and additional N and Bi (U,Bi-TiO<sub>2</sub>N). Morphology, chemical composition, crystallinity, roughness, wettability, band gap, albumin adsorption, photocatalytic activity (PA) and reusability (after 24 h and 72 h) were evaluated. The bacterial adhesion (2 h) and biofilm (24 h) composed of *Streptococcus sanguinis* and *Actinomyces naeslundii* on discs were evaluated after irradiation or not (dark) of the biofilm with VL (30 min; LED 105W). The cytotoxicity was evaluated with human gingival fibroblasts. Data were subjected to analysis of variance (ANOVA) and Tukey HSD test ( $\alpha = 0.05$ ).

**Results:** PEO coatings showed a complex surface topography with greater roughness, hydrophilicity and albumin adsorption compared to cpTi ( $p < 0.05$ ). Bi shifted the band gap of TiO<sub>2</sub> and induced greater PA ( $p < 0.05$ ) with reusable potential. Also, such coatings showed non-cytotoxicity effect and the greatest bacterial reduction (24-h biofilm) in dark ( $p < 0.05$ ) with a greater effect after VL.

**Conclusion:** N and Bi incorporation in TiO<sub>2</sub> via PEO can be considered a promising alternative for dental implants application with antibacterial properties in darkness and by VL application. (FAPESP 2017/00314-6)

**TENSION INDUCED BY OVERDENTURE RETAINED BY SINGLE IMPLANT-PHOTOELASTIC ANALYSIS**

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**Aim:** This study was to verify the stress induced by single implant retained overdentures with diameters (3.5, 4 and 5 mm) and lengths (7, 9 and 11 mm) in mandibular photoelastic models submitted to loadings (10 and 30 kgf)

**Method:** The models were: 1) Implants with 3.5 mm-diameter and 7, 9 and 11 mm-length; 2) Implants with 4 mm-diameter and 7, 9 and 11 mm-length; and 3) Implants with 5 mm-diameter and 7, 9 and 11 mm-length. Were made 9 photoelastic resin mandibular models. One maxillary denture and three mandibular overdentures were made. Was utilized circular polariscope which produced the images for qualitative analyses

**Results:** In the implants with 3.5 mm-diameter the results were: 7 mm-length with stress at apex, around the implant and alveolar ridge; 9 mm-length with stress at middle third to apical, and left side, increasing the concentration with the load increase; and 11 mm-length with stress at along the implant apex, and alveolar ridge with the load increase. In the implants with 4 mm-diameter the results were: 7 mm-length with stress at apex concentration with greater load and lesser stress in the alveolar ridge; 9 mm-length with stress along the implant and apex with greater load; 11 mm-length with stress at apex, along and around the implant with greater value for smaller load, and homogeneous distribution with greater stress. In the implants with 5 mm-diameter the results were: 7 mm-length with similar concentration at apex for both loads and greater value for greater load; 9 mm-length with stress at apex and around the implant with load increase; 11 mm-length with stress along and apex of the implant for both loads

**Conclusion:** Greater length of the implants promoted better stress distribution at apex, along the implant, and alveolar ridge. Greater diameter (5 mm) concentrated more stress around the implants. Increase of load promoted greater amount of induced stress in the implant, and homogeneous distribution in the alveolar ridge

**THE IMPORTANCE OF NUTRITION FOR HUMAN DEVELOPMENT**

JULIANA MARÇAL MINETTO VICENTE; BEATRIZ CRISTINA DE FREITAS; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To know the importance of nutrition for human development focusing on the main nutrients, their deficiencies and major changes in the body.

**Method:** This is a literature review in the database, Scielo, Google academic, Ministry of Health.

**Results:** Studies highlight the importance of nutrition for the physical, cognitive and neurological development of the human being. The importance of the main nutrients present in the foods consumed defines to a great extent the health, the growth and the development of human beings. The main nutrients are: folic acid, which helps in the repair and production of DNA, in the production of new cells such as red blood cells (red blood cells), acts in the prevention of congenital anomalies in the first trimester of gestation; iron that mainly acts in the synthesis (manufacturing) of red blood cells and in the transport of oxygen to all cells of the body, its deficiency is associated with anemia, growth retardation, and impairment of learning ability; vitamins that have various biochemical functions. Vitamin D has regulatory functions of mineral metabolism, cell growth, and tissue differentiation. Vitamin E, A or C, act as antioxidants. The first three years of life represent the most important period since it constitutes the one of greatest vulnerability related to the main alterations, the appearance of infectious diseases, malnutrition and significant alterations in the central nervous system.

**Conclusion:** It is concluded that feeding is of extreme importance for physical, cognitive and neurological development throughout life, but especially in the first thousand days of the child's life.

**THE INFLUENCE OF DENTAL HEALTH TEAMS IN FAMILY HEALTH STRATEGY ON POPULATION KNOWLEDGE RELATED TO ORAL HEALTH**

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**Aim:** The objective of this study was to evaluate the knowledge related to oral health in a sample of adult users attending by health teams of the Family Health Units (FHU) located at the city of Piracicaba, São Paulo, and to compare their levels between FHU who have or do not have dental health teams (DHT).

**Method:** Questionnaires were applied to 490 adult users between 20 and 70 age of both sexes, residents assigned to 5 FHU without DHT and 5 FHU with DHT randomly selected. The application of the research instruments occurred both in the residence of the participants and in the waiting room of the FHU.

**Results:** Data analysis was performed using descriptive statistics and t test for unpaired data. It was observed that those living around FHU with DHT presented better knowledge regarding the causes of a healthy dentition ( $p=0.0314$ ); the causes of dental caries ( $p=0.0332$ ) and the causes of halitosis ( $p=0.0198$ ) than those living around FHU without DHT.

**Conclusion:** It was concluded that the presence of DHT on Family Health Strategy had a good influence on knowledge related to oral health in adult users of FHU.

**THE INFLUENCE OF THE SURFACE TREATMENT ON THE PRIMARY STABILITY OF DENTAL IMPLANTS**

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## All abstracts appear as submitted by the authors without editing

**Aim:** The purpose of this study was to review the scientific literature regarding the influence of surface treatment of dental implant surface on the primary stability.

**Method:** For this, a literature search were performed using the keywords 'dental implants', 'surface treatment' and 'osseointegration' on the PUBMED database. After the inclusion and exclusion criteria were applied, a total of 10 manuscripts were selected.

**Results:** The literature review showed that one of the most reliable methods for evaluation of the primary stability is the removal torque (RTQ). The literature also showed that surface roughness on titanium implant surface improved the osseointegration and primary stability compared to machined implants, according to removal torque (RTQ). Although new surface treatments were developed such as SLActive, they had no statistical differences compared to conventional laser-etched and chemically activated surfaces.

**Conclusion:** Therefore, in accordance to the literature review, it may be concluded that the surface treatments influenced on the primary stability of dental implants according to RTQ measurements. Additionally, the literature showed that surface treatment are able to improve the osseointegration.

#### THE INHIBITION OF FASN AFFECTS THE ADHESION, MIGRATION AND INVASION OF SCC9 CELLS

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**Aim:** Fatty acid synthase (FASN) is an enzymatic complex formed by seven catalytic domains and it levels are associated with poor prognosis and metastases in several malignant neoplasms, including oral squamous cell carcinoma (SCC). The goal of this study was to compare the effects of different pharmacological FASN inhibitors in the adhesion, migration and invasion of SCC9 cell line.

**Method:** SCC9 cells were treated with cerulenin (CER), orlistat (ORL) and triclosan (TCS) for 24h or 48h. Cellular adhesion was evaluated by seeding the previously treated cells in 96-wells plate coated with collagen and fibronectin and stained by toluidine blue. Migration assay was assessed by "wound healing" and transwells assays. Invasion was evaluated by using Boyden chamber assays.

**Results:** The adhesion of SCC9 to the matrix components were significantly reduced by the treatment with different concentrations of TCS. However, CER significantly increased the cell adhesion to the collagen and fibronectin and ORL did not change the adhesion phenotype of these cells. TCS and CER reduced the migration and invasion of SCC9 cells.

**Conclusion:** The FASN enzyme has emerged as a promising therapeutic target for cancer treatment. The comparison of the inhibition of different FASN domains may contribute to understand the mechanism and the side effects of these drugs. In summary, our results showed that the inhibition of FASN affects the adhesion, migration and invasion of SCC9 cells and TCS was significantly more effective when compared with the other compounds.

#### THE RELEVANCE OF COMPUTED TOMOGRAPHY FOR LOCALIZATION OF IMPACTED TEETH: A CASE REPORT

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LONDRINA STATE UNIVERSITY - UEL

**Aim:** Computed tomography (CT) has been an extremely important imaging exam in dental surgical planning, since it allows visualizing the structures and their location relationship in a three dimensional way - a characteristic that makes it superior to conventional radiographs. The present study aims to demonstrate the importance in indication of this imaging exam through the report of a clinical case.

**Method:** A 7-year-old male patient who was referred to the Surgery Specialty with indication of extraction of two supernumerary impacted teeth, discovered in routine radiographs for orthodontic purposes. Clinically, there were no changes in underlying mucosa or painful symptoms. In the periapical radiograph, the supernumerary teeth were related to the incisors. Due to the difficulty in determining the exact position of the teeth through the radiographs (Clark's technique), a CT scan was requested, which revealed the teeth were in a very unusual position.

**Results:**

**Conclusion:** The surgery was performed in a hospital environment under general anesthesia, without trans or postoperative complications. Therefore, it is essential to use additional exams to plan and prevent complications during the surgical procedure.

#### THE TEACHER AND THE TEACHING OF HEALTH EDUCATION IN THE DEVELOPMENT OF ORAL HEALTH PROMOTION IN PRESCHOOL CHILDREN

LENISE MARIA CORAL; DAGMAR DE PAULA QUELUZ

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To know the role of the teacher and the teaching of health education in the development of oral health promotion in preschool children.

**Method:** Bibliographic review in theses and periodicals SciELO and Google Scholar.

**Results:** The school is a social space of discussion of health, being able to bring ample results and competences in health promotion when discussed and applied in schoolchildren. Studies report that preschool children have a high prevalence of caries, emphasizing that hygiene habits, diet and the knowledge of those responsible for schoolchildren directly influence this index, demonstrating the need for greater emphasis and encouragement in health promotion and prevention activities to clarify the population about the etiological factors of the disease. The teacher with good training is an auxiliary for the maintenance of programs focused on oral health, however, it is emphasized the need for these teachers to be updated on the themes.

**Conclusion:** It is sought that the pedagogical practices employed strengthen children's learning, generating new habits that seek to adapt the individual, contextualizing their habits that generate positive impacts within the social context.

#### THE USE OF A NEW ULTRASONIC INSERT FOR ENDODONTICAL RETRACTMENT: CASE REPORT

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ARAÇATUBA DENTAL SCHOOL - UNESP

**Aim:** Adequate disinfection in cases of retreatment is difficult to obtain when compared to treatment resulting in a lower success rate. Failure to remove the obturator material is one of the main factors leading to treatment failure. The areas where they were not touched remain infected, perpetuating the injury. The purpose of this study is to report the case of endodontic retreatment with the Clearsonic® ultrasonic tip.

**Method:** The 22-year-old female patient was referred to the Faculty of Dentistry of Araçatuba, after an unsuccessful attempt to retreat the tooth. After the anamnesis and clinical examination, she showed that the tooth was extremely wide and had a selective area difficult to access, the patient had painful symptoms. The association of the Ultrasonic Clearsonic® tip and microscopic endodontic was made. The sealing material was removed from the walls with brush strokes. The tooth was irrigated with sodium hypochlorite 2.5% and EDTA-T, after intracanal medication of calcium hydroxide, iodofom and propylene glycol. After 30 days and with the absence of symptoms, the tooth was obturated through the hybrid technique of Tagger. Radiographic controls of 30.90 and 140 days were performed.

**Results:**

**Conclusion:** The use of the microscope together with the Clearsonic® tip made it possible to achieve results that were higher than expected and avoided paraendodontic surgery

#### TOPICAL ANESTHETIC EFFICACY ON PALATAL MUCOSA PRETREATED WITH MICRONEEDLES

GABRIELA GAMA XAVIER AUGUSTO; STEPHANY DI CARLA SANTOS; NÁDIA CRISTINA FAVARO MOREIRA; NÁDIA CRISTINA FAVARO MOREIRA; HENRIQUE BALLASSIN ABDALLA; MARIA CRISTINA VOLPATO; FRANCISCO CARLOS GROPPPO ; HARVINDER SINGH GILL; MICHELLE FRANZ-MONTAN

PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This research evaluated whether topical anesthetic efficacy increases on palatal mucosa pretreated with microneedles.

**Method:** In this crossover, randomized, double-blind study, 20 male volunteers were submitted to topical application of microneedles or flat patches on palatal mucosa, bilaterally in the canine region followed by topical anesthesia procedure with EMLA® (Eutectic mixture of lidocaine and prilocaine) during 2 or 5 minutes. Immediately after, an infiltrative anesthesia was performed by using a 30-gauge short needle and 0.3 mL of lidocaine 2% with epinephrine 1:100,000. Pain sensation during needle insertion and local anesthetic injection was evaluated by using 2 different visual analogical scale (VAS). VAS (in mm) results were submitted to the Mann-Whitney test ( $\alpha = 5\%$ ).

**Results:** The use of microneedle as a pretreatment of palatal mucosa did not increase topical anesthetic efficacy of EMLA in reducing pain during needle insertion or local anesthetic injection after 2 min of topical application. However the efficacy of EMLA after 5 minutes of application resulted in reduction of pain during needle insertion, but not to local anesthetic injection ( $p > 0.05$ ).

**Conclusion:** In conclusion, microneedle treatment of palatal mucosa was able to increase topical anesthetic efficacy of EMLA®.

#### TRANSCRIPTIONAL ACTIVITIES OF THE COVR AND VICRK GENES IN STRAINS OF STREPTOCOCCUS MUTANS EXPOSED OR NOT TO HUMAN SERUM

LETÍCIA TANK OLIVEIRA; LÍVIA ARAÚJO ALVES; ERIKA NIKITZA SHIAUHA HARTH CHU; RENATA DE OLIVEIRA MATTOS GRANER

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**Aim:** Bacteria need to quickly adapt to environmental signals during the colonization and/or infection processes of their hosts. To this end, bacteria employ signal transduction Two Component Systems (TCS). In *S. mutans*, the TCS VicRK and CovR regulate cell wall homeostasis and genes for evasion to blood clearance functions. The aim of this study was to compare the transcriptional activities of genes encoding VicRK and CovR between *S. mutans* strains isolated from the bloodstream or oral cavity, exposed or not to human serum (HS).

**Method:** To that purpose, total RNA was purified from blood (SA13, SA16 and SA18) and oral (3SN1, 8ID3 and 15VF2) strains at mid-log phase treated or not with 20% HS. Transcript levels of vicR, vicK and covR were determined by RT-qPCR, and compared between strain groups at each condition.

**Results:** Exposed to HS significantly decreased the transcription of covR and/or vicR/vicK in relation to strains not treated with HS (ANOVA with Tukey post hoc test;  $p < 0.05$ ) in 3SN1, 8ID3, but increased transcript levels of these genes in 15VF2 ( $p < 0.05$ ). The blood isolates showed reduced transcript levels of covR, vicR/vicK when compared to oral strains either in the presence or absence of HS.

**Conclusion:** These results are consistent with the evidence that genes encoding CovR and VicRK are responsive to HS in a strain-specific fashion. This study was supported by FAPESP; proc. 2015/22967-6 and 2015/12940-3.

#### TRAUMATIC DENTAL INJURIES KNOWLEDGE OF UNDERGRADUATE STUDENTS IN A BRAZILIAN COLLEGE OF DENTISTRY

## All abstracts appear as submitted by the authors without editing

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**Aim:** The objectives of this study were to evaluate the basic knowledge of dental undergraduate students of the School of Dentistry of Piracicaba, State University of Campinas, in relation to traumatic dental injuries (TDI) before class, to evaluate the effectiveness of knowledge acquisition after class and to estimate the level of confidence of students in RTD management after clinical training.

**Method:** Specific questionnaires were applied to students before, after TDI class, and after clinical training. Knowledge with particular focus on the following questions were evaluated: what is RTD, dental avulsion and reimplantation; what is the best storage medium and the best place to handle the avulsed tooth; to know when, how and where TDI occurred; which is the most prevalent tooth in TDI; What are the possible sequelae of the avulsed tooth? what is the best time to reimplant; what to do on root fractures; You feel confident in TDI management. The total number of students who answered the questionnaires was 49, with a mean age of 21.84 years and the prevalence of women (81.6%).

**Results:** The results showed that students had little knowledge about TDI before the lecture that increased significantly after lecture and clinical training. Graduating students are confident in the management of RTD (85%).

**Conclusion:** It can be concluded that it is very important to give classes and clinical training in TDI to undergraduate students.

### TREATMENT FOR TINNITUS AND YOUR RELATION TO TEMPOROMANDIBULAR DISORDERS

AYLLA MESQUITA PESTANA; CAMILLA KAROLINE DE CARVALHO BECKMAN; IAGO TORRES CORTÊS DE SOUSA; ANA FERREIRA SOUZA; MARCIO SANTOS DE CARVALHO; JULIA MICHELLE SOUSA DOS SANTOS; CAROLINA CARRAMILO RAPOSO; IVONE LIMA SANTANA  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** To assess the relationship between tinnitus and temporomandibular dysfunction associated with parafunctional habits and the efficacy of 3 types of treatment for tinnitus and major complaints reported by patients.

**Method:** The sample had 24 patients with tinnitus, divided into 3 groups. Each group received a specific type of treatment: group 1 - physiotherapy and counseling, group 2 - occlusal splint and counseling and group 3 - physical therapy, occlusal splint and counseling.

**Results:** The data showed that there was reduction of the main complaints, but without significant differences between the groups. Besides, it was observed that, on average, tinnitus reduction was greater in the groups treated with physical therapy, but it was not statistically significant

**Conclusion:** TMD treatment had influence on tinnitus reduction and major complaints reported by patients.

### TREATMENT OUTCOMES OF AN IMMATURE TRAUMATIZED PERMANENT TOOTH TREATED WITH PULP REVASCULARIZATION IN A SINGLE SESSION

PATRICIA ALMEIDA DA SILVA DE MACEDO; ANA CAROLINA CORREIA LAURINDO DE CERQUEIRA NETO; ANDRÉA CARDOSO PEREIRA; JAQUELINE MAFRA LAZZARI; BRENDA PAULA FIGUEIREDO DE ALMEIDA GOMES; JOSÉ FLÁVIO AFFONSO DE ALMEIDA; MARINA ANGÉLICA MARCIANO; ADRIANA DE JESUS SOARES  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** This case report describes pulp revascularization in a single session of an immature traumatized permanent tooth.

**Method:** A 7-year-old boy was referred to Dental Trauma Service of the Piracicaba Dental School, State University of Campinas, one day after suffering a fall with extrusive luxation of tooth 21. Pulp revascularization was performed after the diagnosis of acute apical periodontitis. Passive decontamination was done with sodium hypochlorite, saline solution, and 2% chlorhexidine. EDTA 17% and saline solution were used as final irrigation. After this, the root canal space was dried and a manual endodontic file beyond the apex induced the blood clot formation. Cervical sealing was performed with an obturation paste, consisting of calcium hydroxide, 2% chlorhexidine gel and zinc oxide in a proportion of 2:1:2. The access cavity was sealed with Coltosol and composite resin. The follow-up 34 months later showed no signals or symptoms on tooth 21, and absence of crown discoloration. Radiographically, a complete apical closure with an increase in root thickness was observed.

**Results:**

**Conclusion:** This proposal for pulp revascularization in a single session and an alternative cervical sealing material can be used for the treatment of immature traumatized permanent teeth, and this case report showed favorable clinical and radiographic outcomes.

### TYPE I DENTIN DYSPLASIA ASSOCIATED WITH FRONTAL ENCEPHALOCELE: REPORT OF A RARE CASE ASSISTED BY MULTIPROFESSIONAL TEAM

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**Aim:** This case report was approved by the Institutional Review Board (CAAE protocol 76655517.0.0000.5441) and aimed to describe the imaging and histopathological diagnosis of type I dentin dysplasia (IDD) associated with frontal encephalocele and their respective treatments, in a patient assisted at the Hospital for Rehabilitation of Anomalies Craniofacial (HRAC)/USP in Bauru.

**Method:** The patient arrived at the hospital two months after birth, brought by both parents searching for treatment for his congenital abnormality (encephalocele). The diagnosis of the

cranial defect was confirmed and the appropriate surgical treatment was carried out. During follow up by the pediatric dentistry and orthodontic teams of HRAC/USP, radiographic examination revealed abnormal anatomy and resorption of roots of the upper and lower first permanent molars, with diagnosis compatible with Type I Dentin Dysplasia. Clinical examinations by other dental specialties confirmed this diagnosis and the appropriate treatment was performed, in accordance with the multidisciplinary required in this case.

**Results:**

**Conclusion:** To our knowledge, there is no previous information in the literature about the simultaneous occurrence of IDD and congenital encephalocele, thus emphasizing the relevance of the present report, aiming to contribute for the elucidation and characterization of new cases. It is pertinent to emphasize the importance of health professionals, structured in a multi- and interdisciplinary team, at the time of diagnosis of both disorders, to establish the best treatment plan and also inform and guide the family.

### USE OF A COMPUTERIZED CEPHALOMETRIC TRACING PROGRAM IN ORTHODONTICS: LITERATURE REVIEW

MAIARA DE CASSIA ROCHA FERREIRA; MARCELA DE OLIVEIRA FERREIRA; NICOLLE KOZIELSKI CARNEIRO; MARIEL DE SOUZA KUSSANO; RICARDO TAKAHASHI  
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**Aim:** There are several benefits that cephalometry has provided for diagnosis in Orthodontics, as well as for scientific research. The advancement of technology in orthodontics with the introduction of software for cephalometric tracings has provided an improvement and better practicality of the technique. In recent years, several cephalometric tracing programs have been developed and adherence by professionals in the field has been increasing by these programs.

**Method:** This work aims to perform a literature review in the databases of Dentistry, identifying the most used cephalometric tracing programs in the studies, their characteristics, analyzing and discussing the methodology and the results obtained, based on the cephalometric measures analyzed.

**Results:** There are several methodologies found in the analyzed works that result in different significant results.

**Conclusion:** We conclude that knowing and correctly identifying the anatomy are essential aspects in the cephalometric analysis, it is also extremely important to include the calibration of the examiner in all scientific work, thus fulfilling all the recommended steps would increase the reproducibility and reliability of the cephalometric measures analyzed by these programs of cephalometric tracing.

### VIDEO OF BEHAVIOR MANAGEMENT TECHNIQUES AS A TOOL FOR DENTISTRY STUDENTS PRACTICE

RENATA ANDREA SALVITTI DE SA ROCHA; GUSTAVO SATTOLO ROLIM; ANTONIO BENTO ALVES DE MORAES  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** In dental treatment context, fear and anxiety can be present, and may lead to avoidance of dental care or disruptive behavior during treatment. The pediatric dentist shouldn't be restricted to technical learning of a specific area, but should have also adequate training to deal with disruptive behavior. Behavior management must be part of dentist's training programs, and it is important to assess the new teaching tools available to achieve this goal.

**Method:** Four dental students and their patients participated in 64 dental treatment sessions. The sessions were directly observed by the researcher, and the events were registered. The pre-session video lasted 6 minutes and was shown to the student through a Samsung Tablet (SM-T320) before the patient arrived. The design was reversal: (A) Sessions 1, 2 and 3 - baseline (B) 4, 5, and 6 - video presentation prior to treatment, (A) 7, 8, and 9 - usual treatment (B) 10, 11 and 12 video presentation prior to treatment and (A) 13, 14 and 15 - usual treatment, and 1 follow up session, 1 month after last session. For behavior events registration, event sampling methodology was used.

**Results:** The use of behavior management increased after video sessions. The most widely used technique was Tell-Show-Do, followed by Distraction and Time Structuring. In sessions with more use of behavior management, children actively participated and asked for specific techniques.

**Conclusion:** The use of a video shown before treatment was an effective teaching tool to increase the use of behavior management techniques, and the patient's participation in dental sessions.

### WATER SORPTION AND SOLUBILITY OF EXPERIMENTAL BULK FILL COMPOSITES CONTAINING THE ELASTOMERIC MONOMER EXOTHANE 24

MATEUS PAVARIN PEREIRA; MAY ANNY ALVES FRAGA; MATEUS GARCIA ROCHA; AMERICO BORTOLAZZO CORRER  
PIRACICABA DENTAL SCHOOL - UNICAMP

**Aim:** The aim of this in vitro study was to evaluate the water sorption (WS) and solubility (SL) properties of experimental bulk fill composites containing different type and concentrations of urethane monomers.

**Method:** A neat resin with BisEMA and TEGDMA were made. To this blend were added 2.3 wt%, 5.75 wt%, or 11.5 wt% of UDMA or elastomeric monomer (Exothane 24), totaling 6 groups: U1 (2.3 wt % UDMA), U2 (5.75 wt % UDMA), U3 (11.5 wt % UDMA), E1 (2.3 wt % Exothane 24), E2 (5.75 wt % Exothane 24) and E3 (11.5 wt % Exothane 24). Barium borosilicate glass (75 wt%) and colloidal silica (2 wt%) were used as filler particles. A circular metallic matrix ( $\Phi 15 \pm 0.1$  mm) was used to obtain 5 disc specimens from each group. Filtek™ Bulk Fill (3M) was used as commercial control (FB). WS and SL were evaluated following ISO 4049/2009 requirements. WS data was evaluated with one-way ANOVA and Tukey's test ( $\alpha=5\%$ ). SL data was evaluated with Kruskal-Wallis and Mann-Whitney test

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( $\alpha=5\%$ ).

**Results:** FB had higher WS than other groups. The increase on Exothane 24 significantly reduced WS whilst the inverse was found for UDMA content. E3 had significantly higher SL than FB; there was no significant difference between SL of other groups.

**Conclusion:** It can be concluded that urethane monomer affect WS and SL of resin composites. While low concentration (2.3 wt%) of UDMA is preferred, for Exothane 24 the best results were found when high monomer concentration (11.5 wt%) was used.

**WORK ACCIDENTES WITH EXPOSURE TO BIOLOGICAL MATERIAL AMONG HEALTH PROFESSIONALS AND THEIR PROFILE IN THE SÃO PAULO STATE**

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**Aim:** To identify work accidents with exposure to biological material among health professionals and their profile in the São Paulo state.

**Method:** Literature review in databases.

**Results:** According to the epidemiological bulletin of the São Paulo state on Workmen's Health Injuries from 2011 to 2014, 54,256 cases of work-related accidents with exposure to biological material in the state were reported. There was a higher prevalence of accidents caused by sharps in women aged 25 to 39 years. The most affected professionals were nursing auxiliaries and technicians, nurses, followed by doctors, cleaning and hygiene personnel, students and dentists. Regarding the time of the sharps accident, there was a prevalence during the invasive procedures, administration of medication and inappropriate disposal of the materials used.

**Conclusion:** It is concluded that nursing professionals, physicians, hygiene staff, students and dentists are more exposed to the risk of work accidents with biological material in their daily routine, requiring greater attention regarding training, permanent education and training actions; in addition to ensuring a safe environment, providing adequate materials for the development of their activities and personal protective equipment by employers.