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## Adherence of *Candida Albicans* to Different Finished Surfaces of PMMA Resins Reinforced with Glass E Fibers

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*Candida albicans* has been widely associated with the etiology of denture-related stomatitis. When fiber reinforcement is used in the denture base as a total fiber reinforcement, the fibers may be exposed during the finishing of the denture. This may lead to oral disease if the fibers come into contact with the oral mucosa. In this study the adherence of *Candida albicans* to the surface of PMMA and to the surface of E glass fibers of composite material used in dentures was compared. E glass fibers coated with Silan 1 (silan + epoxy resin) and Silan 2 (silan + polyester resin) were used to reinforce denture base polymethyl methacrylate resin. Specimens were produced by two different methods. In the first group the fibers were wetted with a mixture of polymer powder and monomer liquid. In the second group the fibers were wetted in polymer liquid for 15 minutes and then blended with PMA polymers. All of the samples were heat cured. Half the prepared specimens were polished and the other half left unpolished. Replicates and yeast cells (*Candida albicans* ATCC, 90028,  $1.0 \times 10^7$  cells/ml) were placed in wells and incubated for 1 h at 37°C on an orbital shaker at 80 rpm. The replicates were air dried and mounted on glass slides and stained with a solution of 0.5% crystal violet and 1.0% iodine. The number of adherent yeast cells were counted under a light microscope (400x).

### RESULTS:

1. Less *Candida albicans* adhered to the Polished surface ( $P < 0.01$ ).
2. The highest *Candida albicans* accumulation was observed on the Silan 2 (silan + poly ester resin) coupling samples. ( $P < 0.001$ ). The type of material used for silanization is an important factor, effecting the amount of *Candida albicans* accumulation.

105.

## The Mechanical Strength of Acrylic Palatal Plates Reinforced with Net or Bundle Glass Fibers

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The aim of the study was to evaluate the resistant forces of acrylic palatal plates reinforced with glass net and unidirectional glass fibers. The form and models of the edentulous jaw (Frasaco) were used in the study. Palatal plates were made from hot polymerised acrylic SR Triplex Hot (Ivoclar). In the total reinforced method the studied palatal plates used were reinforced with one or three layers of fiber glass net (Stick Net). In the partial reinforced method acrylic palatal plates were reinforced with one bundle of unidirectional glass fibers (Stick). Acrylic resin and glass fibers were prepared and polymerised according to the manufacturer's recommendation. Palatal plates were kept two weeks in water before the tests. Measurements of mechanical properties were made using loading in a universal resistance machine (FM Rauenstein). The palatal plates were loaded with a force in the symmetric plane. The results were compared with measurements in the control group, where acrylic palatal plates lacked reinforcement. Acrylic palatal plates reinforced with glass net, and plates without reinforcement break into pieces under loading. Palatal plates reinforced with bundle of glass fiber cracked under loading without being broken to pieces. The greatest strength of the studied palatal plates was observed in plates with three layers of glass net.

106.

## Injuries to the Stomatognathic System in Tae-Kwon-Do

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Martial arts are high-risk sports for injuries to the stomatognathic system, according to the FDI classification. The aim of this investigation was to determine frequency, type and severity of injuries to the stomatognathic

system, during Tae-Kwon-Do, and the use of protection devices during training and competitions. This investigation included 43 examinees, 15 female and 28 male, among which were members of the national representatives of the Republic of Croatia. They were required to complete a questionnaire. The result revealed a very low number of injuries, in fact, lack of injuries in the female and male junior categories. In the male junior and both senior categories 134 injuries were reported, 118 or 88% of them were laceration of the lips, cheeks and tongue. Other injuries to the stomatognathic system represent only 16 injuries or 12% of all injuries. The majority of injuries occurred during training (68%), and 32% during competition. Protection devices (helmets) were used during training only by 5 examinees (11.63%), and during competition (100%). Mouthguards of any type were not used by any examinee. Helmets used are obligatory during competition and prevent the occurrence of injuries to the stomatognathic system, and decrease the severity of injury.

107.

## Type And Material of Fixed Prosthodontic Appliances in Patients Living in the Region of Metković

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The aim of this study was to evaluate the type and the aesthetic material in relation to age, gender, level of education, employment, socio-economic status and frequency of visits to the dentist. The examination was performed on 212 patients who had a fixed prosthodontic appliance for more than a year (55% males and 45% females, age 18-80 yrs.). The following conclusions were made: 1. The older patients and retired patients had significantly more bridges than crowns ( $p < 0.05$ ). There was no significant difference between gender and patients with a different level of education in the distribution of crowns and bridges ( $p > 0.05$ ). Patients who visit their dentist regularly have significantly more crowns than bridges than patients who visit their dentist irregularly or when in pain ( $p < 0.01$ ). Age or the first visit to the dentist made no significant influence on crown and bridge prevalence ( $p > 0.05$ ). 2. Almost all fixed prosthodontic appliances older than 10 years were made of porcelain (98%), while

acrylic veneer crowns were more frequent in appliances older than 10 or 15 years ( $p < 0.01$ ). Relatively high frequency of porcelain (64%) was recorded in comparison to acrylic material (32%) or chromasite (4%). There was no gender difference with regard to the material used ( $p > 0.05$ ). Patients older than 60 years had more acrylic material compared to younger patients. While patients younger than 39 years had almost exclusively ceramic appliances ( $p < 0.01$ ). Less educated patients had more acrylic veneer appliances. Employed patients had significantly more ceramic appliances than retired patients.

108.

## Evaluation of Tension and Intensity of Electrogalvanical Currents between Dental Alloys and Silver Amalgam

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It is a well-known fact, that the presence of metals, distant from each other in electrogalvanical sequence, causes the occurrence of electrical tensions in the oral cavity environment and, as a result, there is current flow between them.

Tensions and galvanical currents may cause not only discomfort for the patient, metallic taste, oral local changes on mucous membrane, but they may also have negative influence on immunological, internal or gynecological diseases.

The object of this study was the definition of dimension of tension and intensity of electrogalvanical currents, which are induced by the presence of different dental alloys and silver amalgams in artificial saliva with different pH-value. For the study artificial saliva was used, prepared according to the method of Fusayama in modification of Holland.

The examined alloys were the products of the Kulzer-concern:

- Heraenium NA: chrom-nicelic alloy;
- Heraenium NF and Heraenium P: cobalt-chrom-molybdenic alloys;
- and silver amalgams (polished and unpolished) from the SDI-concern.

The above mentioned alloys and silver amalgams were placed in pairs in artificial saliva solutions with different