

# European Dental Students' Association (EDSA)

9<sup>th</sup> Congress

5-7 April 2012

Thessaloniki, Greece

## Congress Proceedings

European Dental Students' Association

Under the auspices of:  
Aristotle University of Thessaloniki  
School of Dentistry, A.U.TH.



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### **Welcome Message**

On behalf of the organizing committee and the European Dental Students' Association (EDSA) I would like to invite you to the **49th EDSA Meeting** in conjunction with the **9th EDSA Congress** in the beautiful city of *Thessaloniki, Greece*. (April 1-8, 2012).

It is the first time in the history of EDSA that Thessaloniki has been honored with the organization of the biennial congress of the Association as well as the biannual meeting. There are a lot of reasons for this decision of EDSA. A very important one is that Thessaloniki is always a very attractive and easy to reach European destination.

The main theme of the Congress is going to be the "Clinical applications in dental aesthetics; options and compromises". This topic brings to surface the major issue of aesthetics when the crushing percentage of patients has very high anticipations in this area of dental rehabilitation. Parallel themes that are going to get analyzed, taking as a handle the main topic, are current dental research, specialization and ethics regarding dental practice. Lectures and workshops are going to be held during the Congress, under the supervision of prominent figures in the field of Dentistry.

The prominent international and national invited speakers in the scientific program, the exciting social program and the extensive traders' exhibition, with the support of our sponsors, will attract the attention of a large number of dental students and make this congress a very successful and memorable one in the history of EDSA.

Elpida Samara

Chairwoman of the Local Organizing Committee



European Dental Students' Association

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- Ass. Prof. Dr. Tolidis Kosmas, Department of Operative Dentistry, Aristotle University of Thessaloniki
- Ass. Prof. Kimon Divaris, Department of Pediatric Dentistry, UNC School of Dentistry (USA)

## Local Organizing Committee

- Samara Elpida (Chairwoman)
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- Papadopoulos Christos
- Iosif Al Mochamant
- Zogakis Ioannis

The background features a stylized globe in shades of purple and blue, with a yellow tooth icon positioned to its right. The acronym 'EDSA' is written in large, light purple letters across the center of the globe.

# Congress Program

European Dental Students' Association

**Thursday 5<sup>th</sup> April 2012**

**9-11:30 Oral Sessions –Student Presentations-Preclinical Session**

- Tissue engineering in the treatment of temporomandibular disorders  
Makaronidis Ioannis, Gkougoumtzian Roumpina, Kokoti Maria, Koidis Petros
- The effect of bonding application between two layers of composite placed immediately or after 15 minutes on the shear strength of the material. (In vitro study)  
Prof. Dr. Fatma Koray, Dr. Murat Tiryaki, Ayşenur Uzun, Ahmet Güler
- Colour stability of aesthetic dental materials- In vitro study  
Vuletic Jelena, Vlasacevic Aleksandar, Puskar Tatjana
- Measuring the depth of the gingival sulcus and the width of the attached gingiva of dentistry students  
Gajić Vedran, Šarić Dejan
- Finite Element Method Analysis of Stress in Non-Carious Cervical Lesions  
Alina Cocan, Bianca Ioana Porca, Gabriela Beresescu, Simona Mucenic, Ligia Brezeanu
- Evaluation of clinical and biochemical parameters and antioxidant capacities of the patient with severe periodontal disease  
Prof.Dr.Funda Yalçın, Dr.Ülkü Başer, Selin Eren, Nazlı Durmuş
- Identification of stroke prone patients through detection of carotid calcifications on panoramic radiograph  
Kovacevic Mila, Ass. Dr Ivan Sarcev
- CAD/CAM custom abutments - workflow  
Mickovic Maja, Simic Radmilo

**11:30-12:00 Coffee Break**

**12:00-14:00 "Immediate implant placement in fresh extraction sockets in the Esthetic Zone: diagnostic, surgical and restorative considerations"**

Dr. Andrea Mastrosera Agnini (*DDS- Clinical Research Fellow of the Ashman Department of Periodontology and Implant Dentistry, New York University*)

Dr. Alessandro Agnini (*DMD-University of Modena and Reggio Emilia, Italy*)

**14:00-15:00 Lunch Break**

**15:00-16:30 "Contemporary approach for immediate restoration of lost dental hard tissues-materials and techniques"**

Ass. Prof Kosmas Tolidis (*Department of Operative Dentistry, Aristotle University of Thessaloniki, Dental School*)

**16:30-17:15 Sponsor Presentation-Colgate**

**17:15-18:15 "Dentistry in the crossroad of the changes in education and the dental practice in Europe"**

Asc. Prof. C.J. Oulis (*Representative of the Council of European Dentists*)

**Friday 6<sup>th</sup> of April 2012**

**9:00-11:30 Oral Presentations-Student Presentations –Clinical Session**

- Oro Facial clefts and a general dental practitioner's role in treatment  
Dang R. Rushil
- Radiographic evaluation of root canal obturation of endodontically treated teeth  
Kovacevic Ana, Arlov Goran, Adamovic Danijela, Dosen Milorad
- Glass Ionomer Cements in Non-Carious Cervical Lesions Restorations  
Bianca Ioana Porca, Alina Cocan, Gabriela Beresescu, Ligia Brezeanu
- Periodontitis as a complication of diabetes  
Denic Dragana
- Bone temperature changes during mini dental implant placement  
Simic Radmilo, Mickovic Maja
- Molar-Incisor Hypomineralization  
Fernandes A.S., Mesquita, P., Vinhas, L.
- Statistic study on the golden proportion in the maxillary anterior teeth  
Buiga Petronela, Ass. Prof. Camelia Alb
- Facial esthetics and its role in Dentistry  
Melvinder Mohar Tyndall, Dr. Shashirashmi Acharya, Dr. Sunil Mutalik, Dr. Arun Urula, Dr. Tina Puthan Purayil

**12:00-13:15 "Differential Diagnosis of Face Asymmetries"**

Prof Athanasios E. Athanasiou (*Chairman: Department of Orthodontics, School of Dentistry, Aristotle University of Thessaloniki, and President: Hellenic National Academic Recognition and Information Center*)

**13:15-14:30" The Basics of Ergonomics"**

Prof J. Rotgans (*President of European Society of Dental Ergonomics*)

**14:30-15:15 Lunch Break**

**15:15-16:30 "Peri-implant cervical bone resorption during wound healing: Is it a biological phenomenon? Can we prevent it?"**

Prof. A. Konstantinidis (*Professor and Chairman of Preventive Dentistry, Periodontology and Implant Biology, Dental School, Aristotle University of Thessaloniki*)

**16:45-17:30 Sponsor Presentation by Kavo**

**17:30-18:30"Oral health care for infants, children and adolescents: the interface between practice and research"**

Ass. Prof. K. Divaris (*UNC-Chapel Hill, USA*)

**Saturday 7<sup>th</sup> of April 2012**

**9:00-12:00** Workshops (Aesthetic Dentistry, Ergonomics, Research Methology) –Webinar

1. “Fundamentals of research methods inside/out—a problem-based course”

Ass. Prof K. Divaris (UNC-Chapel Hill, USA) - Research Methology

2. “What Is A Good Dental Unit And How to Adopt a Healthy Sitting Working Posture During Dental Treatment”

Prof J. Rotgans (President of ESDE) - Ergonomics

3. “Immediate composite resin restorations using the layering technique”

Ass. Prof Kosmas Tolidis (Department of Operative Dentistry, Aristotle University of Thessaloniki, Dental School)-Aesthetic Dentistry

4. Webinar –Sponsored by Ultradent “Immediate composite resin restorations using the layering technique”

Ass. Prof Kosmas Tolidis (Department of Operative Dentistry, Aristotle University of Thessaloniki, Dental School)

**12:00-12:30** Coffee Break

**12:30-15:00** Sponsor Presentation (restoration & prosthetics, piezo scaler technology) –W&H and Barbeque Party Hands-On-Workshop

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# CONGRESS ABSTRACTS

## 1. INVITED LECTURES

*(In order of presentation)*



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**Immediate implant placement in fresh extraction sockets in the Esthetic Zone: diagnostic, surgical and restorative considerations**

**Dr. Andrea Mastrorosa Agnini, Dr. Alessandro Agnini**



*Clinical Research Fellow of the Ashman Department of Periodontology and Implant Dentistry, New York University*



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**Curriculum Vitae:** Dr. Andrea Mastrorosa Agnini graduated in 2007 from the University of Modena and Reggio Emilia. He works in private practice in Modena and Sassuolo, Emilia Romagna, Italy, following his brother, Alessandro, specialized in fixed prosthodontics, periodontology, and implantology. He attended the NYU College of Dentistry with Dr. Dennis Tarnow, Dr. Christian Stappert, Dr. Stephen Chu, Dr. Michael Bral. He is actually a Clinical Research Fellow of the Ashman Department of Periodontology and Implant Dentistry at NYU, with Dr Sang Choon Cho. He is co-author of Italian and international scientific publications. Since 2007 he has been Clinical Fellow of an annual course of Fixed Prosthetics, Periodontology and Implantology based at his brother Alessandro's, who is the scientific director, private practices in Emilia Romagna, Italy.

## Contemporary approach for immediate restoration of lost dental hard tissues-materials and techniques

**Ass. Prof Kosmas Tolidis**



*Department of Operative Dentistry, Aristotle University of Thessaloniki*



**Curriculum Vitae:** He was born in Thessaloniki on 1964. Graduated from the Dental School of Thessaloniki on 1989 and started as research fellow at the Dept. of Operative Dentistry. The years 1991-1993 was a postgraduate student at the University of Bristol UK and he got the Master's Degree on Paediatric Dentistry. In the year 1996 got his PhD from the University of Thessaloniki on Dental Materials with excellence. At the moment is Ass. Professor at the Dept. of Operative Dentistry at the University of Thessaloniki. He authored approximately 40 scientific papers in English and in Greek and two textbooks in Greek, "Immediate aesthetic restorations, 2004" and "Solving clinical problems in Paediatric Dentistry, 2006". Currently has started the third book on "Minimally invasive Dentistry" and a revision of the aesthetic dentistry book. Currently he is, Secretary General of the Hellenic Academy of Aesthetic Dentistry. He served as member of the council of the Hellenic Dental Association, and President of the scientific committee of the Greek Dental Association, as well as President of the Thessaloniki Dental Society. His research interest is on biomaterials and pediatric dentistry. He is a presenter on national and international level for the subjects of restorative materials and techniques and also organizer of hands on courses for dentists on contemporary materials and techniques. From 1989 he owns a private dental office in Thessaloniki dedicated to esthetic and paediatric dentistry.

## Dentistry in the crossroad of the changes in education and the dental practice in Europe

**Asc. Prof. C.J. Oulis**



*School of Dentistry, University of Athens,  
Council of European Dentists - Representative and Chairman of the  
Working Group*



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**Curriculum Vitae:** Constantin Oulis is Associate Professor of Paediatric Dentistry in the Dental School of the University of Athens .Education: D.D.S Dental School Athens University (1974) ,Certificate in Paediatric Dentistry, UAB (1979-1981), MSc in Oral Biology,UAB(1981-1982), PhD Dental School Athens University (1986).Academic Appointments: University of Athens: Lecturer (1986-1989), Assistant Professor (1989-1991), Associate Professor (1991-today) .Professional Appointments: Founding member and President of the European Academy of Paediatric Dentistry (EAPD) (1996-1998) , President of the Hellenic Society of Paediatric Dentistry (HSPD) (2000-2003 and 2006-2009). Board Member of the Hellenic Dental Association and Chairman of the WG on Education and Professional Qualifications of Dentists in EU (CED) .Publications: Dr.Constantin Oulis has published over eighty scientific papers in International and Greek journals and has made over one hundred and fifty scientific presentations in Greek and International Congresses.His main research interests are in the areas of Cariology in regard to Caries epidemiology ,acid resistance of hard tissues and methods of preventive strategies,with special interest on sealants use for the prevention of caries on pits and fissures of permanent teeth.

## Differential Diagnosis of Face Asymmetries

### **Prof Athanasios E. Athanasiou**



*Chairman: Department of Orthodontics, School of Dentistry, Aristotle University of Thessaloniki, and  
President: Hellenic National Academic Recognition and Information Center*

**Curriculum Vitae:** Dr. Athanasios E. Athanasiou is Professor, Chairman and Program Director at the Department of Orthodontics, School of Dentistry, Aristotle University of Thessaloniki, Greece. He is President of the Hellenic National Academic Recognition and Information Center of the Greek Ministry of Education. He was President (2005-2010), Vice-President (2000-2005) and Executive Committee Member (1995-2000) of the World Federation of Orthodontists (W.F.O.), President (2000-2002) and Secretary-General (1998-2000) of the European Federation of Orthodontics (F.E.O.), President of the Greek Orthodontic Society (1997-2005), and Dean (2003-2007) and Vice-Dean (2001-2003) of the School of Dentistry, Aristotle University of Thessaloniki. He received his Dental Degree and Doctorate Degree from the University of Athens, Greece in 1979 and 1991, respectively, and his Certificate in Orthodontics and Master of Dental Sciences in 1985 from Temple University, U.S.A. He has also attended postgraduate studies at the University of London, England, Lancaster Cleft Palate Clinic, U.S.A., and Albert Einstein Medical Center, U.S.A. He is Honorary Member of the British Orthodontic Society (2006), Cyprus Orthodontic Society (2005), Lebanese Orthodontic Society (2003), Orthodontic Society of F.Y.R.O.M. (2009), South African Orthodontic Society (1998), Honorary President of the Greek Orthodontic Society (2008), and Honorary Editor of the Hellenic Orthodontic Review (2006) (Editor during 1996-2004). He served or serves as referee or member of the editorial board of numerous scientific journals, has published more than 150 scientific articles, chapters and books, has supervised more than 45 Doctorate Degree (Ph.D.) and Master theses, and has presented more than 350 lectures, papers and seminars in 47 countries. He has received many distinctions and awards including the Edward Cherkas Memorial Award by Temple University (1985), Zendium Prize by Aarhus University (1990) and the Louise Ada Jarabak Memorial Award by the American Association of Orthodontists Foundation (2001). Since 1992, Prof. Athanasiou maintains in Athens a private practice limited to orthodontics.

## The Basics of Ergonomics

### Prof J. Rotgans



*President of the European Society of Dental Ergonomics*



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**Curriculum Vitae:** (1963-1968) Officer Royal Netherlands Air Force,(1965-1973) Study medicine and dentistry University Nymegen/Netherlands,(1973-1975) Depts. Prostodontics and Preventive and Social Dentistry, University Nymegen: Lecturer, (1975-1986) Dept. Conservative Dentistry, University Tübingen/Germany: Lecturer; (1987) Chef de Clinique; (1979) Deputy Director; (1981) PhD/assoc. professor; (1984) extra-ordinary professor (1986-1992) Private University Witten/Herdecke Ltd./Germany: (1986) Medical Director/ Chair General Dentistry/vice-dean study affairs; (1989) dean (1987-1996) President German Society of Dental Ergonomics (AGAZ), (1992-today) Dept. Conservative Dentistry RWTH Aachen University/Germany: (1993) Lecturer for dental curriculum development and research; (1999) assoc. professor; (2000) extra-ordinary professor, (1993-1997) Study Master of Health Professions Education, University Maastricht/ Netherlands, (1995-1997) Head Coordination-Unit Community Medicine, Medical Faculty, University Greifswald/Germany ,(2003-2005) Vice-President German Society of Dental Ergonomics, (2005-today) President German Society of Dental Ergonomics, (2005-today) President of the European Society of Dental Ergonomics.



## Peri-implant cervical bone resorption during wound healing: Is it a biological phenomenon? Can we prevent it?

**Prof. A. Konstantinidis**



*Professor and Chairman of Preventive Dentistry, Periodontology and Implant Biology, Dental School, Aristotle University of Thessaloniki*



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**Curriculum Vitae:**

**Undergraduate Dental studies:** Aristotle University of Thessaloniki, Dental School 1967-1972.

**Undergraduate Medical studies:** Aristotle University of Thessaloniki, Medical School 1974-1978.

**Postgraduate studies:** a) Tufts University School of Dental Medicine Boston USA, September 1978, Certificate and Masters of Science of Periodontology, November 1981 b) Doctoral Thesis, Aristotle University of Thessaloniki, 1981.

**Publications:** a) over 100 scientific publications in the Greek and International Dental Medicine literature b) One monograph c) Textbook of Clinical Periodontology (in press).

**Present position:** Professor and Chairman of Preventive Dentistry, Periodontology and Implant Biology, Dental School, Aristotle University of Thessaloniki.

## Oral health care for infants, children and adolescents: the interface between practice and research

**Ass. Prof. K. Divaris**



*Department of Pediatric Dentistry, University of North Carolina-Chapel Hill (US)*



European Dental Students' Association

**Curriculum Vitae:** Kimon Divaris received his DDS from Athens University School of Dentistry in 2005. Since 2007 he has been at the University of North Carolina-Chapel Hill (US), where he pursued advanced studies jointly at the School of Dentistry and the Gillings School of Global Public Health. In 2011 he received a certificate of specialization in Pediatric Dentistry, a graduate certificate in Global Health, and a Ph.D degree in Epidemiology from UNC. Kimon's research interests are diverse and span from caries, periodontitis and oral cancer to dental education, oral health literacy and genetics. He has published over 30 articles and abstracts in peer-reviewed journals, is a recipient of the 2011 IADR BEHSR postdoctoral award, and currently is adjunct Assistant Professor of Pediatric Dentistry and Dental Research Postdoctoral Fellow at UNC-Chapel Hill. Kimon is a past President (2003-4) and Honorary Lifetime member of the European Dental Students' Association (EDSA).

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**2. ORAL STUDENT PRESENTATIONS**  
**PRECLINICAL SESSION**  
*(In order of presentation)*



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## **Tissue engineering in the treatment of temporomandibular disorders**

**Makaronidis Ioannis, Gkougiumtzian Roumpina, Kokoti Maria, Koidis Petros**

*Department of Fixed Prosthesis and Implant Prosthodontics, School of Dentistry, Aristotle University of Thessaloniki*

In the treatment of severe cases of temporomandibular disorders, the surgical approach that might be followed may lead to the creation of tissue deficit within the joint. Tissue engineering, a rapidly growing multi-disciplinary field aiming towards the development of biological substitutes, may offer solutions in the near future, suitable for the replacement of the tissue loss. The initial phase requires the study of the normal cellular, biochemical and biomechanical properties of the tissue to be replaced (characterisation studies). Afterwards, a tissue graft with properties identical to the original has to be created. For this purpose, cells derived from cell cultures are combined with scaffolds and receive biological and mechanical stimuli. The initial cell source can be fully differentiated cells, mesenchymal stem cells or embryonic stem cells. Scaffolds can be synthetic (either biodegradable or not) as well as natural and can incorporate stimuli to facilitate cell differentiation. The whole process should also include the necessary growth factors that act as essential promoters of the thorough tissue regeneration. TGF-  $\beta$ 1 and IGF-I are considered to be the two major factors. Tissue engineering in the field of temporomandibular disorders is mainly focused on the construction of grafts for the replacement of the disc and osteochondral grafts for the replacement of the condyle. It should be noted, however, that there are still numerous technical issues to be resolved. Research aiming at the development of optimum laboratory protocols and effective combination of cells, scaffolds and stimuli is still ongoing.

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**The effect of bonding application between two layers of composite placed immediately or after 15 minutes on the shear strength of the material. (In vitro study)**

**Prof. Dr. Fatma Koray, Dr. Murat Tiryaki, Ayşenur Uzun, Ahmet Güler**

*Istanbul University*

**Introduction:** The aim of the comparative study is to evaluate the effect of bonding application between two layers of composite placed immediately or after 15 minutes composite on the shear strength of the material.

**Materials and Methods:** The composite is placed into special prepared holes on acrylic blocks with standard dimensions. Ultradent (USA) application apparatus is applied to allow the standart placement of the second layer. Different groups were set up as following: Group 1(control), composite to composite immediately; Group 2, bonding agent applied between the two layers of composite; Group 3, 15 minutes delay before placing second layer of composite; Group 4, 15 minutes delay before applying bonding agent and placing second layer of composite; Group 5, 15 minutes delay before acid etch + bonding and placing second layer of composite. Shear strengths between two composite layers were measured by the testing machine (Shimadzu Autograph AG-X) and the obtained data analysed statistically.

**Results:** Shear strength of composite in group 2 (18.6 MPa) was the highest ( $p < 0.001$ ). Acid etching procedure had no significant effect on shear strength of placing 15 minutes delayed second layer of composite before applying a bonding agent ( $p > 0.05$ ).

**Conclusion:** Application of bonding between two layers of composite increases shear strength.



## **Colour stability of aesthetic dental materials - In vitro study**

**Vuletic Jelena, Vlasacevic Aleksandar, Puskar Tatjana**

*Medical faculty, Novi Sad*

**Introduction:** The ability of aesthetic restorative materials to resist staining that originates from food and different drinks is an important characteristic.

The aim of this study was to evaluate the effect of three beverages — tea, coffee and coca-cola, as well as surface roughness on the color stability of three different dental materials.

**Materials and Methods:** Twenty disk-shaped specimens of each dental composite and glass-ionomer cement were prepared. Half of the specimens was polished, and the other half was left unpolished. Also, ten glazed and ten unglazed all ceramic crowns were tested. Color measurement was done by using a spectrophotometer. Colour changes were calculated from the formula  $\Delta E = [(\Delta L)^2 + (\Delta a)^2 + (\Delta b)^2]^{1/2}$ .

**Results:** All tested materials showed color changes. Coffee caused the most intensive color changes. Ceramics showed minimal colour changes. Distilled water also caused colour changes. The effect of surface finish on staining was statistically significant.

**Conclusion:** All materials are susceptible to staining by all beverages. All efforts should be made to minimize discoloration of restorative dental materials by adopting excellent polishing techniques.

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## **Measuring the depth of the gingival sulcus and the width of the attached gingiva of dentistry students**

**Gajić Vedran, Šarić Dejan**

*Faculty of medicine, Department of Dentistry, University of Banjaluka*

**Introduction:** The aim of our research was to measure the depth of the gingival sulcus and the width of the attached gingiva. We wanted to determine the difference of the depth of gingival sulcus and width of attached gingiva between male and female, between maxilla and mandible, and also between left and right sides.

**Materials and methods:** We have conducted our research in Medical faculty, Department of dentistry, Banjaluka. Our subjects were both male and female students with clinically healthy gingiva. Their age was from nineteen to twenty five. The number of subjects was 121. The instruments we have used were artificial light, periodontal probe and mouth mirror. We have also made a special form for this research.

**Results:** Results showed that the values obtained for the depth of the gingival sulcus were in average 0,46mm-male and 0,39mm-female for maxilla, and 0,43mm-male, 0,31mm-female for mandible. It was similar with the width of the attached gingiva: maxilla: 3,94mm-male, 4,06mm-female; mandible: 2,79mm-male, 2,60mm-female.

**Conclusions:** On the basis of our research we have concluded that the depth of the gingival sulcus and the width of the attached gingiva is bigger in maxilla than in mandible. There is no significant difference in the depth of the gingival sulcus and the width of the attached gingiva between left and right side, as well as male and female.

**Key words:** the depth of the gingival sulcus, the width of the attached gingiva

## **Finite Element Method Analysis of Stress in Non-Carious Cervical Lesions**

**Alina Cocan<sup>1</sup>, Bianca Ioana Porca<sup>1</sup>, Gabriela Beresescu<sup>2</sup>, Simona Mucenic<sup>2</sup>, Ligia Brezeanu<sup>3</sup>**

*1 - University of Medicine and Pharmacy, Faculty of Dentistry, 4th year student, Targu Mures, Romania*

*2 - University of Medicine and Pharmacy, Faculty of Dentistry, Targu Mures Romania*

*3 - Petru Maior University of Targu Mures, Faculty of Engineering, Targu Mures, Romania*

**Introduction:** Non-carious cervical lesions involve loss of hard tissue at the cervical third of the crown through processes unrelated to caries. Any lesion in the cervical area facilitates the possibility of its advance into the tooth, ultimately fracturing it. The purpose of this study is to examine the NCCLs formation caused by high loads applied onto the tooth and the behaviour of the unrestored lesions under the same levels of loads.

**Materials and methods:** In this study, we generated a bidimensional plane mathematical finite elements model (FEM), using an intact human mandibular canine. Numerical analysis was carried out using ALGOR – Fempro solver. The mechanical analysis using FEM was done on teeth with and without lesions under two different loads.

**Results:** The results show that the most stress-prone area with the highest risk of mechanic damage is the cervical area of the tooth. The values obtained after simulation on a tooth lesion on the cervical area were compared to those obtained following simulations on a healthy tooth. They were considered significant in both cases.

**Conclusions:** We appreciate that finite element method is a valuable complementary method which offers accurate images of the behavior of the structure under study, while being a noninvasive method of analysis.

## **Evaluation of clinical and biochemical parameters and antioxidant capacities of the patient with severe periodontal disease**

**Prof.Dr.Funda Yalçın, Dr.Ülkü Başer, Selin Eren, Nazlı Durmuş**

*Istanbul University Dentistry Faculty*

**Introduction:** Periodontal disease is a chronic inflammatory disease characterized by connective tissue breakdown and alveolar bone loss. The limitations of traditional methods became clear and new techniques have been proposed as diagnostic tests for periodontal disease. The aims of this study is 1)to evaluate the clinical status of all patients; 2)to evaluate the inflammatory biochemical parameters in saliva, gingival crevicular fluid (GCF) and serum samples; 3)to compare obtained parameters and to evaluate the relationship between the clinical parameters.

**Materials and methods:** Our study consisted of 50 severe chronic periodontitis patients aged between 21-57 and 30 healthy subjects (control group) aged between 21-52. A medical history was reported to rule out any systemic disorder that could potentially affect periodontal status. Clinical data included probing depth, bleeding on probing, gingival index, plaque index and the gingival recession were measured at six sites per tooth. After these clinical measurements subjects were asked to expectorate unstimulated whole saliva into a sterile plastic tube. After isolation from saliva, filter paper strips were introduced gingival sulci of 5 sites which had equal or more than 5mm probing depth. Then blood samples were collected in one LH-including, one EDTA-including and one empty tube. All the samples were stored in a freezer at -80 degrees Celcius.

**Results:** The clinical results of the group are: plaque index is  $0,79\pm 0,15$ ; gingival index is  $1,6\pm 0,26$ ; probing depth is  $3,29\pm 0,47$ ; and bleeding on probing is  $0,79\pm 0,14$ . The clinical results of the control group are: plaque index is  $0,31\pm 0,09$ ; gingival index is  $0,84\pm 0,48$  probing depth is  $1,7\pm 0,45$ ; bleeding on probing is  $0,48\pm 0,12$ . The analysis of biochemical parameters is still in progress.

**Conclusion:** The clinical results of the periodontitis group were higher than the control group. After the analysis of the biochemical markers, the clinical results will be compared to biochemical parameters.

## **Identification of stroke prone patients through detection of carotid calcifications on panoramic radiograph**

**Kovacevic Mila, Ass. Dr Sarcev Ivan**

*Medical Faculty of Novi Sad*

**Introduction:** Stroke often occurs as a result of atheromatous plaque existing in carotid bifurcation. Calcification which occurs in the evolution of atheromatous plaque can be detected on dental panoramic radiographs which are used in diagnostic of dental diseases.

**Materials and methods:** 300 panoramic radiographs obtained during 2008.-2010. in the Clinic of Dentistry of Vojvodina were analyzed to detect calcifications in carotid bifurcation. The prevalence of calcifications depending on patients` sex and age was examined.  $\chi^2$  test was used for data processing.

**Results:** Calcifications in carotid bifurcation were detected on 42 (14%) of analyzed radiographs. Calcifications were detected on 11,94% of radiographs in male patients, and on 15,66% of radiographs in female patients, with no statistically significant difference in prevalence between the genders. In patients who were between 45 and 60 years of age, calcifications were detected on 10,11% of radiographs, and in patients who were older than 60 years on 20,54% of radiographs. Difference in prevalence between these two age groups is statistically significant.

**Conclusion:** Orthopantomography is an efficient method for detecting calcifications in carotid bifurcation. Calcifications in carotid bifurcation can more often be found on radiographs in patients who are older than 60 years.

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## **CAD/CAM custom abutments – workflow**

**Mickovic Maja, Simic Radmilo**

*School of Dentistry, University of Belgrade*

Computer-aided design/computer aided-manufacturing (CAD/CAM) custom abutments have been gaining attention due to their advantages of esthetic emergence profile and ideal soft tissue contours, as well as availability in zirconia and titanium materials. This paper explored a novel method to produce CAD/CAM custom abutments in zirconia material and presented optimal solution for the restoration. After getting impression and pouring a model, waxing procedure must be completed to build the abutment to full anatomic contour according to the needs of restoration. Thus the position of the wax-up abutment and implant can be determined by scanner. The scan is sent to the central laboratory for manufacturing to get a custom abutment in zirconia material. The abutment is now suitable for cement- or screw-retained restorations. Moreover, this type of abutment reduces the chance of creating dark interproximal spaces or exposing margins on anterior restorations, relieving the dentist from abutment selection and preparation. At last, solution for restoration depends on implant position in bone, actually on screw access hole position. Crown can be produced on standard protocol (access hole placed on incisal or labial surface of the abutment) or ceramic layering directly on abutment (access hole on palatal surface of the abutment).

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**3. ORAL STUDENT PRESENTATIONS**  
**CLINICAL SESSION**  
*(in order of presentation)*



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## **Oro Facial clefts and a general dental practitioner's role in treatment**

**Dang R. Rushil**

*MCODS*

**Introduction:** Cleft lip and palate is one of the common congenital conditions in North - Eastern India; its incidence is 1.2 to 1.5 per 1000 live births. The clinical presentation is a unilateral or bilateral cleft with or without extension through the palatal shelves. Dental anomalies often associated with clefts range from multiple missing teeth to abnormal arch morphology amongst others.

**Materials and methods:** An overview of the embryology, etiology, and incidence of this diverse group of orofacial clefts is presented. Techniques involving fabrication of obturators and pre - surgical orthodontics have also been discussed.

**Results:** Cleft involving lateral and median upper lip; and oblique facial, lateral facial, and palate are reviewed together with the various techniques towards fabrication of obturator in palatal cleft cases.

**Conclusion:** This study highlights the orofacial anomalies that arise from the mouth and lips, and that the management of dental anomalies should be made central to the treatment planning process of cleft lip and palate.

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## **Radiographic evaluation of root canal obturation of endodontically treated teeth**

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**Introduction:** Obturation is a phase of endodontic treatment which comes after mechanical and medicament processing of root canal. Success of endodontic treatment can be evaluated by analysis of the obturation. Aim of this research was the evaluation of homogeneity and length of the obturation material in root canal of patients who were treated in academic 2010/2011 at the Department of Dentistry of the Medical faculty in Banjaluka.

**Materials and methods:** The research was conducted among 70 patients with diagnosis of pulpitis, pulp infection and periapical lesion. Root canals were treated by step back and crown down techniques. Obturation was performed using standard technique of gutta-percha with AH plus paste. The quality of obturation was estimated by observing control RTG image and in relation to the length and homogeneity of the root canal filling. The obturation was considered successful if the filling had been homogeneous all the way to the root top.

**Results:** The obturation of all the teeth was successful in 67,6% of cases, of which 94,1% of single-rooted teeth and 45,0% of multi-rooted teeth were obturated successfully.

**Conclusion:** The highest percentage of the treatment success was with single-rooted teeth.

**Key words:** obturation, radiographic image

## **Glass Ionomer Cements in Non-Carious Cervical Lesions Restorations**

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**Introduction:** Non-carious cervical lesions (NCCLs) represent a unique clinical situation due to their multifactorial etiology. A critical factor for restorative success is represented by the selection of the restorative materials. This study evaluates the clinical performance of glass ionomer in NCCLs restorations over a one-year period, and their mechanical behavior.

**Materials and methods:** For this study, there were evaluated 80 glass ionomer cements restorations, according to a modified USPHS criteria 12 months following replacement. For the mechanical behavior we employed a parametric analysis of the restorative elastic modulus using a mandibular canine model embedded into finite element method. Simulations of different values and positions of the loads, both vertical and oblique, were used on restored teeth.

**Results:** In the present study, we detected significant differences in retention rates in NCCLs between restorative materials with different elastic modulus values. The softening of the material occurs in the interfacial cervical region of the restoration. The cervical interface was identified as locus minoris resistentiae.

**Conclusions:** In order to avoid fracture of cavities walls, clinicians must take in considerations aesthetic needs and localization into account in selecting materials for such restorations. A correct restoration leads to normal morphofunctioning of the tooth.

## **Periodontitis as a complication of diabetes**

**Denic Dragana**

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**Introduction:** Periodontitis is a chronic disease that attacks the teeth supporting apparatus. The process begins with gingivitis, periodontal pockets continue forming, creating periodontal abscess to form foci, which are threatened and distant organs. Teeth begin to sway and eventually fall out stage. Some systemic diseases can often be a risk factor for periodontitis. One of these is diabetes mellitus. Relation of diabetes and periodontal disease is the result of many pathogenetic mechanisms: vascular changes, disturbed collagen metabolism and specific microbiological flora in periodontal pockets. This study should help us clarify the mutual relationship of periodontal disease and type 2 diabetes mellitus.

**Materials and Methods:** The study included 30 patients, where 10 of them were healthy and 20 subjects had clinically diagnosed diabetes mellitus type 2. From these respondents were 10 with controlled diabetes, and 10 respondents were not subjected to the treatment of diabetes. The group consisted of persons aged from 40 to 65 years. Periodontium status of patients was defined based on the measurement of dental plaque index PI, gingival index GI, gingival bleeding SBI level, depth of periodontal pockets DPDz and frequency of periodontal abscess.

**Results:** Results indicate that the increased frequency and degree of periodontal disease heavier in patients with type 2 diabetes. Periodontal disease is a significant complication of diabetes mellitus type 2.

**Keywords:** Periodontal disease, diabetes, periodontal pocket.

## **Bone temperature changes during mini dental implant placement**

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**Introduction:** Mini dental implants (MDI) are commonly used to stabilize lower complete denture and it requires placement of 4 implants in the interforaminal region of the mandible, composed of dense bone. Such structure of the bone increases the possibility of tissue overheating during MDI placement. Temperature of 47°C for 1min induces bone tissue necrosis and leads to osseointegration failure. The aim of this “in vitro” study was to investigate bone thermal changes during MDI placement.

**Materials and Methods:** All 56 temperature measurements were done in water bath to simulate in vivo conditions. Mini dental implants with diameters of 1.8mm, 2.1mm and 2.4mm and lengths of 10mm, 13mm, 15mm and 18mm were placed in bovine ribs that simulated human mandibular bone. Temperature of bone was measured by 3 thermocouples vertically inserted around each implant site, at distance of 0.5mm from implant’s periphery and at 3 depths: coronal, middle and apical third of the osteotomy.

**Results:** All temperatures were in safe range. Longer implants produced a higher temperature regardless of the implant diameter.

**Conclusion:** Length of mini dental implant is a factor that has a higher impact on bone temperature compared with implant diameter.

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## **Molar-Incisor Hypomineralization**

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**Introduction:** Molar-incisor hypomineralization (HIM) was first described by Weerheijm et al in 2001 as a hypomineralization of systemic origin involving from one to four first permanent molars, often associated with affected permanent incisors. The first clinical report ever done was, however, around 1972. Since then, several classifications have been used to describe this pathology such as "idiopathic opacity of the enamel in first permanent molars", "opacity of enamel fluoride not related to the first permanent molars," "internal enamel hypoplasia," "cheese molars" or "aplasia of the enamel". This variety of terms has made it difficult to compare studies. The enamel defects observed are the result of a variety of environmental factors that act at the systemic level. These include all the factors presented in the pre-natal, peri-natal and childhood that may interfere with the normal development of the enamel. Genetic predisposition must also be considered. Clinically, the enamel of the teeth is characterized by the presence of white/opaque, yellow or brownish discolorations, depending on the degree of severity. It is well demarcated and generally non symmetric. After eruption, the molars tend to fracture or to produce high sensitivity, both to cold and hot, and are often difficult to anaesthetize. This disease has, therefore, achieved an enormous clinical relevance, over the last decade, capturing the attention of dentists. The aim of this paper is to undertake a review of existing information in the international literature related to this disease, focusing on their clinical implications.

**Materials and Methods:** For the preparation of this work, we use the databases MEDLINE / PUBMED, B-On library and archives of the School of Dental Medicine, University of Porto, using combinations of the terms "dental enamel," "molar incisor hypomineralization/hipomineralisation" "permanent first molars", "prevalence", "MHI", "etiology," "cheese molars" and "treatment". Search Limits were imposed, including English-language articles and articles published between the years 1970 and 2011. We read the abstracts of all articles obtained and selected those considered relevant to the topic, based on the inclusion criteria; the characteristics of the pathology, etiology, diagnosis and treatment

of molar-incisor hypomineralization. We also considered articles mentioned on the bibliography not identified in the research and fulfilling the inclusion criteria.

**Discussion and conclusion:** The HIM is still a relatively unknown entity of unknown etiology and not totally described. There is a lack of evidence in the literature to determine the etiological factors of this disease. It is important that this pathology is universally recognized by the establishment of well-defined diagnostic criteria without which any investigation will be compromised. One can, based on literature review, conclude that the HIM has a multifactorial origin and is more common in children with preterm birth and those who contracted childhood diseases during the first three years of life. The patient with HIM should attend the dentist frequently, who must implement strict measures and effective oral care measures, including the use of a desensitizing paste, and advise a less cariogenic diet. More investigations are needed with well-defined long-term clinical study groups, supported by laboratory investigation which, in turn, evaluate, among others, the molecular mechanisms underlying the abnormal function of the ameloblasts to allow the development of guidelines needed for treatment of the HIM. It is important that dentists identify children with increased potential of developing the disease, working towards the prevention of early tooth loss. Mapping the prevalence is also imperative, based on representative populations and studies validated by the use of standardized methods for intra-oral photographs, and has been identified as useful in epidemiological studies related to enamel defects.

## **Statistic study on the golden proportion in the maxillary anterior teeth**

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**Introduction:** The existence of the golden proportion between the widths of the upper anterior teeth and the width-to-height ratio W/H for the maxillary central incisor (CI) is the subject of the present paper which investigates it on a study group of patients.

**Materials and Methods:** We performed a statistic study on 80 patients taken from the database of the Pedodontics Clinic in Cluj-Napoca. The golden proportion and the W/H ratio of CI were evaluated on the base of 40 standardized frontal images and 40 gypsum casts. Measurements were taken with the help of vernier caliper by two investigators.

The results were submitted to the statistic analysis using a one- sample t test.

**Results:** We obtained significant differences when the mean ratios between perceived widths were compared with their ideal golden ratios ( $P < 0,01$ ). Significant differences were also observed when the mean values were compared with the proportion of 75%.

**Conclusions:** The existence of the golden proportion for the maxillary anterior teeth as a whole was not found in evaluation of the images nor in case of casts. The W/H ratio for the maxillary CI does not comply with the proportion of 75%. Other studies showed similar results.

## **Facial esthetics and its role in Dentistry**

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The science of esthetics literally means “the science of beauty in nature and arts”. Beauty in itself is a combination of reality and personal perception. An object of beauty can be interpreted differently by every artist, based on his preconceived notion of beauty. Such differences exist across different countries and its races, different professions and even generations. Thus, the science of esthetics remains inexact and subjective. Dento-facial esthetics can be analysed by certain man-made references. The main frame consists of the face. The inner frame constitutes the nose, eyes, lips, forehead, chin, etc. These references help us to evaluate facial esthetics. Relating the face to the innermost frame consisting of teeth and gums helps in the evaluation of dento-facial esthetics. Innermost frames consisting of teeth and gums play a crucial part in the overall beauty of the face. The whole face needs to be considered in a whole when trying to work on dental esthetics because the final picture should be a merger wherein the various features of the face, smile, teeth and gums complement each other. The current paper will review the factors of esthetic dento-facial composition and their clinical significance.

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