

# THE PROGRAM

**Seq#: 1**      **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Symposium, Prince Hotel: Hall 2**

**Dental Materials - Controversies in Polymerization of Light-activated Polymer Matrix Composites**

**Chairman: D. Watts**

**0001** 3:00 Controversies in Polymerization of Light-activated Polymer Matrix Composites. D.C. WATTS\*, J.W. STANSBURY, R. NAGEL, and K.H. KUNZELMANN (*University of Manchester, Great Britain; University of Colorado, and Bisco Inc., USA; and University of Munich, Germany*).

3:05 Resin Composite Polymerization Kinetics from a Molecular Perspective. J. STANSBURY (*University of Colorado, Aurora, US*).

3:35 Dental Curing Light Design and Performance. R. NAGEL (*Bisco, Inc., Schaumburg, IL, US*).

4:05 Polymerization Shrinkage Stress from Various Activation Methods. K.-H. KUNZELMANN (*University of Munich, Germany*).

4:35 Discussion

**Seq#: 2**      **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Symposium, Makuhari Messe: Room 201 A**

**Cariology - Maintaining the Success of Caries Prevention in Adulthood**

[Supported by Vivadent Ltd.]

**Chairpersons: C. Pine and E. Crowley**

**0002** 3:00 Maintaining the Success of Caries Prevention in Adulthood. H.P. WHELTON\* and C.M. PINE (*Oral Health Services Research Centre, University College Cork, Ireland; and Section of Dental Public Health and Health Psychology, University of Dundee, Scotland*).

3:10 Adults: Now a Major Risk Group for Caries. H. WHELTON (*University Dental School, Wilton, Ireland*).

3:35 Losing Oral Health Gains from Childhood to Adulthood. J. SPENCER (*University of Adelaide, Australia*).

4:00 Preventive Therapies for At-risk Adults. S. TWETMAN (*Halmstad, Sweden*).

4:25 Fostering Caries Prevention in Practice. M. ANDERSON (*Washington Dental Service, Seattle, US*).

4:50 Discussion

**Seq#: 3**      **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Symposium, Makuhari Messe: Int'l Conf Room**

**Periodontal Research - Microbial Genomics and Periodontal Disease**

[Supported by Seikagaku Co.]

**Chairpersons: Y. Akibo and H. Kuramitsu**

**0003** 3:00 Microbial Genomics and Periodontal Disease. Y. ABIKO\* and H.K. KURAMITSU (*Nihon University School of Dentistry at Matsudo, Chiba, Japan; and State University of New York, Buffalo, USA*).

3:10 Impact of the Complete Genome Sequence on Microbiology. N. OGASAWARA (*Nara Institute of Science and Technology, Nara, Japan*).

3:35 Genomics and Biology of *Porphyromonas gingivalis*. M.J. DUNCAN (*Forsyth Dental Center, Boston, MA, US*).

4:00 Gene Identification Using in vivo-induced Antigen Technology. J.D. HILLMAN (*University of Florida, Gainesville, US*).

4:25 Differential Display Analysis for Microbial Genomics. P.E. KOLENBRANDER (*NIDCR/NIH, Bethesda, MD, US*).

4:50 Discussion

**Seq#: 4**      **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Makuhari Messe: Room 201 B**

**Craniofacial Biology - Tooth Development**

**Chairperson: R. D'Souza**

**0004** 3:00 The Role of IGFs on the Control of Genes Associated with Mineralization in Odontoblastic Cells *in vitro*. J. CATÓN\*, I. TENORIO, and M. ZEICHNER-DAVID (*CCMB-USCDS, Los Angeles, CA, USA*).

**0005** 3:15 Osteoprotegerin from Dental Follicle Cells Inhibits Osteoclast Formation *in vitro*. G.E. WISE\*, Q. ZHANG, and S. YAO (*Louisiana State University, Baton Rouge, USA*).

**0006** 3:30 Mutation Analysis of CBFA1 Gene in Familial Tooth Impaction. K. TAKAHASHI\*, S. KOSUGI, Y. TSUBOI, K.-I. MURAKAMI, H. KANEGANE, and T. IIZUKA (*University of Kyoto, and University of Toyama Medical and Pharmaceutical, Japan*).

**0007** 3:45 Expression, Regulation, and Function of CTGF during Tooth Development. T. SHIMO\*, C. WU, P. BILLING, M. PACIFICI, and E. KOYAMA (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0008** 4:00 Krox-26: A Novel Transcription Factor in Bone and Tooth Development. B. GANSS\*, W. TEO, H. CHEN, and T. POON (*University of Toronto, Canada*).

**0009** 4:15 PTHrP Regulates the Correspondent Interaction of Tooth and Surrounding Bone Development. K. MEKAAPIRUK\*, N. SUDA, V.E. HAMMOND, F. BECK, T. KURODA, Y. TAKANO, and T. TERASHIMA (*Tokyo Medical and Dental University, Japan; and University of Melbourne, Australia*).

**0010** 4:30 Identification of Tooth-specific Downstream Target Genes of Cbfa1. K. HSIEH\*, J.S. GAIKWAD, A. CAVENDER, M. HOFFMANN, and R. D'SOUZA (*Department of Orthodontics, University of Texas Health Science Center, Houston, USA*).

**0011** 4:45 Genetic Studies of Human Tooth Agenesis. S.A. FRAZIER-BOWERS, J. MENSAH, M.R. SCOTT, A. CAVENDER, and R. D'SOUZA\* (*Department of Orthodontics, University of Texas Health Science Center, Houston, USA*).

**Seq#: 5**      **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 6**

**Dental Materials - Substrate Variables Affecting Dentin Bonding**

**Chairpersons: J. de la Macorra and M. Toledano**

**0012** 3:00 Comparison of Micro- and Macro-tensile Bond Strength Tests. T. LUCHTERHANDT\*, O. FREY, M. HANSEN, and R. RICHTER (*ESPE Dental AG, Seefeld, Germany*).

**0013** 3:15 Influence of Bonded Area Magnitude on the Tensile Bond Strengths of Various Adhesives in Perfused Teeth. N. ESCRIBANO, M.O. DEL-NERO, and J.C. de la MACORRA\* (*Department of Conservative Dentistry, Complutense University, Madrid, Spain*).

**0014** 3:30 Effect of Dentin Conditioner on Bonding to Bur-prepared Dentin. M. OGATA\*, N. HARADA, S. YAMAGUCHI, M. NAKAJIMA, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**0015** 3:45 Microtensile Bond Strength of Several Adhesive Systems to Different Dentin Depths. M. TOLEDANO\*, C. FERNANDES, L. CEBALLOS, M.V. FUENTES, F.R. TAY, R. OSORIO, and R.M. CARVALHO (*University of Granada, Spain; FOB USP & UF Ceará, Brazil; and University of Hong Kong*).

**0016** 4:00 Shear Bond Strength of Composite Bonded to Differently Treated Dentin Surfaces. L. CEBALLOS\*, M. TOLEDANO, R. OSORIO, F.R. TAY, and G.W. MARSHALL (*University of Granada, Spain; University of Hong Kong, China; and University of California, San Francisco, USA*).

**0017** 4:15 Fractured Surface Characterization: Wet vs. Dry Bonding. M. HASHIMOTO\*, H. OHNO, M. KAGA, H. SANO, K. ENDO, Y. ARAKI, M. KUBOTA, and H. OGUCHI (*School of Dentistry, Hokkaido University, School of Dentistry, Health Sciences University of Hokkaido, and School of Dentistry, Iwate Medical University, Japan*).

**0018** 4:30 Is a Dehydrating Agent Necessary for Bonding to Moist Dentin? K. MIYASAKA\*, Y. IWASAKI, and N. NAKABAYASHI (*Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

4:45 Discussion

**Seq#: 6** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Makuhari Messe: Room 301 A**

#### Diagnostic Systems - Cancer/DNA/Gene

**Chairpersons: P. Dayal and M. Takano**

**0019** 3:00 Prognostic Value of Histopathologic Parameters in Well-differentiated Squamous Cell Carcinoma of Head and Neck. O.J. KIM\*, J.Y. LIM, E.J. LEE, and H.R. CHOI (*Department of Oral Pathology and Anatomy, Chonnam National University, Gwangju, South Korea*).

**0020** 3:15 Detection of Oral Precancerous and Cancerous Lesions by Raman Spectroscopy. P.K. DAYAL\* and M. VENEGAL (*KMC-College of Dental Surgery, Mangalore, India*).

**0021** 3:30 Sex Identification from Different Burnt Dental Pulp Tissue. S. THANAKUN\*, J. DHARMBHIBHIT, B. RERKAMNU-AYCHOKE, and W. CHANTRATITA (*Mahidol University, Bangkok, Thailand*).

**0022** 3:45 Application of Mitochondrial DNA Polymorphism for Personal Identification. S. MARUYAMA\* and K. MINAGUCHI (*Department of Forensic Odontology, Tokyo Dental College, Chiba, Japan*).

**0023** 4:00 Y-chromosome DNA Polymorphisms for Male Identification in Forensic Odontology. I. NONAKA\* and K. MINAGUCHI (*Department of Forensic Odontology, Tokyo Dental College, Chiba, Japan*).

**0024** 4:15 Iodine-Toluidine-blue Staining to Indicate Precancerous Stage. M. TAKANO\*, T. KAKIZAWA, S. NOMURA, T. MURAMATSU, and M. SHIMONO (*Department of OMS, Suidobashi Hospital, and Department of Pathology, Tokyo Dental College, Japan*).

**0025** 4:30 Association of Growth Hormone Receptor Gene Variant with Mandibular Height. T. YAMAGUCHI\*, K. MAKI, and Y. SHIBASAKI (*Department of Orthodontics, School of Dentistry, Showa University, Tokyo, Japan*).

**0026** 4:45 Activating Gs  $\alpha$  Mutation in Fibro-osseous Lesions. M. KAWAI\*, K. TAKAHASHI, S. KOSUGI, K. MURAKAMI, and T. IIZUKA (*University of Kyoto, Japan*).

**Seq#: 7** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 3**

#### Geriatric Oral Research - Oral Health & Systemic Diseases

**Chairpersons: J. Meurman and A. McMillan**

**0027** 3:00 Is Periodontal Disease a Death Risk Indicator among the Elderly? S. AJWANI\*, R. TILVIS, and A. AINAMO (*University of Helsinki, Finland*).

**0028** 3:15 Dental Health and Behavior in Patients Referred for Open-heart Surgery. J.H. MEURMAN\*, M. QVARNSTRÖM, and S.-J.K. JANKET (*Institute of Dentistry, University of Helsinki and Helsinki University Center Hospital, Finland; and Harvard School of Public Health, Harvard University, USA*).

**0029** 3:30 Bronchopneumonia and Oral Health in Hospitalized Older Patients. A Pilot Study. M. IMSAND\*, J.-P. JANSSENS, R. AUCKENTHALER, P. MOJON, and E. BUDTZ-JØRGENSEN (*University of Geneva, Switzerland; and Montreal, Canada*).

**0030** 3:45 Impact of Oral Disease among Nasopharyngeal Carcinoma Survivors. A.S. McMILLAN\*, E.H.N. POW, M.C.M. WONG, W.K. LEUNG, and D.L.W. KWONG (*University of Hong Kong, SAR*).

**0031** 4:00 Oral Health Status of Southern Chinese Nasopharyngeal Carcinoma Survivors. E.H.N. POW\*, A.S. McMILLAN, W.K. LEUNG, M.C.M. WONG, D.L.W. KWONG, and W.K. HO (*University of Hong Kong, SAR*).

**0032** 4:15 Mucositis Amelioration during BMT with Calcium Phosphate Rinses/F Trays. A.S. PAPAS\*, K.T. O'LAUGHLIN, G. MARTUSCELLI, E. CLARK, and K.B. MILLER (*School of Dental Medicine, Tufts University, and New England Medical Center, Boston, MA, USA*).

**0033** 4:30 IL-1 $\alpha$  Accelerates Oral and Esophageal Carcinogenesis in Mice. S. DAYAN\*, G. GALLAGHER, and T.S. KUPPER (*Brigham and Women's Hospital, Harvard Medical School, and Boston University School of Medicine, MA, USA*).

4:45 Discussion

**Seq#: 8** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 9**

#### Implantology Research - Tissue Engineering

**Chairpersons: J. Jansen and D. Brunette**

**0034** 3:00 Epithelial Cell Behavior on Micro-patterned Titanium, Vanadium, Niobium, and Aluminum Substrata. M. SHIMONISHI\*, M. KOMATSU, M. WINKELMANN, M. TEXTOR, N.D. SPENCER, and D.M. BRUNETTE (*Tohoku University, Sendai, Japan; ETH, Zürich, Switzerland; and University of British Columbia, Vancouver, Canada*).

**0035** 3:15 Effects of Surface Topographies of Titanium Implants on Mineralization in a Rat Model. H. MURAKAMI\*, M. WIELAND, M. TEXTOR, N.D. SPENCER, B. CHEHROUDI, and D.M. BRUNETTE (*Aichi-Gakuin University, Japan; University of British Columbia, Vancouver, Canada; and ETHZ, Zürich, Switzerland*).

**0036** 3:30 Osteoblast Activity on Titanium Coated with TiO<sub>2</sub> by the MOCVD Technique. L. RIMONDINI\*, N. QUIRICI, G. BATTISTON, and C. PRATI (*University of Milan, and University of Bologna, Italy*).

**0037** 3:45 Macrophage BMP-2 Expression is Modulated by Cell Adhesion Phenomenon at cpTitanium Substrates. J. TAKEBE\*, C. CHAMPAGNE, S. OFFENBACHER, and L.F. COOPER (*School of Dentistry, University of North Carolina, Chapel Hill, USA*).

**0038** 4:00 Transforming Growth Factor- $\beta$ 1 Incorporation into a Calcium Phosphate Bone Cement: Material Properties and Release Characteristics. E.J. BLOM\*, J. KLEIN-NULEND, J.G.C. WOLKE, M.A.J. VAN WAAS, F.C.M. DRIESSENS, and E.H. BURGER (*Department of Oral Cell Biology, and Department of Oral Function, ACTA, Amsterdam, and Nijmegen University, The Netherlands*).

**0039** 4:15 Bone Formation in TGF- $\beta$ 1-loaded Ti-fiber Mesh Implants in Cranial Defects. J.W.M. VEHOFF, M.T.U. HAUS, P.H.M. SPAUWEN, and J.A. JANSEN\* (*Department of Biomaterials, College of Dental Science, University of Nijmegen, The Netherlands*).

**0040** 4:30 Space-providing ePTFE Devices Define rhBMP-2-induced Alveolar Augmentation at Dental Implants. U.M.E. WIKESJÖ, M. QAHASH\*, R.C. THOMSON, A. COOK, M.D. ROHRER, J.M. WOZNEY, and W.R. HARDWICK (*Temple University, Genetics Institute, Inc., University of Minnesota, and W.L. Gore & Assoc., Inc., USA*).

4:45 Discussion

**Seq#: 9** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 8**

#### **Microbiology/Immunology & Infection Control - Cellular Responses to Pathogens**

**Chairpersons: R. Craig and Y. Hourri-Haddad**

**0041** 3:00 Periodontal Infections and Acute Phase Proteins in Hemodialysis Patients. R. CRAIG\*, R. BOYLAN, M. SPITTLE, and N. LEVIN (*New York University College of Dentistry, and the Renal Research Institute, Beth Israel Medical Center, New York, USA*).

**0042** 3:15 Lethal Outcome Caused by *Porphyromonas gingivalis* A7436 in a Mouse Chamber Model was Associated with Elevated Titers of Serum Interferon  $\gamma$ . Y. LIN\*, H.T. HUNG, Y.I. LAI, S.W. HU, H.H. WEI, and R.R. ARNOLD (*Institute of Stomatology, Chung Shan Medical and Dental College, Taichung, Taiwan; and Dental Research Center, University of North Carolina, Chapel Hill, USA*).

**0043** 3:30 Cytokine Responses of HEp-2 and KB Epithelial Cells to *Porphyromonas gingivalis*: Studies of a PgPepO Gene-deficient Mutant. T. ANSAI\*, W.-X. YU, V. BITKO, S. BARIK, and T. TAKEHARA (*Kyushu Dental College, Kitakyushu, Japan; and University of South Alabama, Mobile, USA*).

**0044** 3:45 Protection against *P. gingivalis* Infection Correlates with Local Antibodies and IL-10 Levels. Y. HOURRI-HADDAD\*, A. SOSKOLNE, M.A. CURTIS, and L. SHAPIRA (*Hebrew University-Hadassah Faculty of Dentistry, Jerusalem, Israel; and St. Bartholomew's-Royal London School of Medicine, UK*).

**0045** 4:00 Cellular and Molecular Mediators of *Actinobacillus actinomycetemcomitans*-induced T-cell Apoptosis. A. NALBANT and H.H. ZADEH\* (*Department of Periodontology, University of Southern California, Los Angeles, USA*).

**0046** 4:15 *Actinobacillus actinomycetemcomitans* Leukotoxin-induced Caspase-8 Activation through Calcium Signaling. N. YAMAGUCHI\*, I.R. KIEBA, J. KOROSTOFF, and E.T. LALLY (*Faculty of Dental Science, Kyushu University, Fukuoka, Japan; and University of Pennsylvania, Philadelphia, USA*).

**0047** 4:30 Cytokine Profiles in Oro-pharyngeal Candidiasis. C.S. FARAH\*, T. GOTJAMANOS, G.J. SEYMOUR, and R.B. ASHMAN (*University of Queensland, and University of Western Australia*).

4:45 Discussion

**Seq#: 10** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 4**

#### **Mineralized Tissue - Bone Matrix Proteins: Structure & Function**

**Chairpersons: J. Chen and H. Goldberg**

**0048** 3:00 Structure-Function Relationship of Bone Sialoprotein. C.E. TYE, K.R. RATTRAY, J.A.R. GORDON, T.M. UNDERHILL, G.K. HUNTER, and H.A. GOLDBERG\* (*School of Dentistry, University of Western Ontario, London, Canada*).

**0049** 3:15 Bone Sialoprotein (BSP) Promotes Intra- and Extravasation of Tumor Cells. J. CHEN\*, J.A. RODRIGUEZ, J. TANG, and T. YONEDA (*Departments of Pediatric Dentistry and Medicine, University of Texas Health Science Center at San Antonio, USA*).

**0050** 3:30 Regulation of Bone Sialoprotein (BSP) Gene Transcription by TNF $\alpha$ . H. SAMOTO\*, Y. OGATA, E. SHIMIZU-SASAKI, M. YAMAZAKI, J. SODEK, and K. KASAI (*Nihon University School of Dentistry, Matsudo, Chiba, Japan; and CIHR Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, Ontario, Canada*).

**0051** 3:45 Parathyroid Hormone Regulation of Bone Sialoprotein (BSP) Gene Transcription in UMR106 Cells. Y. OGATA\*, E. SHIMIZU-SASAKI, Y. MATSUDA, M. YAMAZAKI, S. FURUYAMA, H. SUGIYA, and J. SODEK (*Nihon University School of Dentistry, Matsudo, Chiba, Japan; and CIHR Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, Ontario, Canada*).

**0052** 4:00 Selective Drug Delivery System to Bone: (Gla) $_3$ -conjugation. T. DAMRONGRUNGRUANG\*, S. KURODA, D. SATO, K. AOKI, H. KONDO, K. MIYAMOTO, K. OHYA, and S. KASUGAI (*Tokyo Medical and Dental University, and Kanazawa University, Japan*).

**0053** 4:15 Neutrophil Collagenase is Involved in Rat Bone and Cartilage Development. Y. SASANO\*, J.-X. ZHU, I. TAKAHASHI, K. ONODERA, I. MIZOGUCHI, and M. KAGAYAMA (*Tohoku University, and Health Science University of Hokkaido, Japan*).

**0054** 4:30 DMP-1 is Regulated by Cbfa1 in Bone but Not in Tooth. J.Q. FENG\*, J. ZHANG, S. CHEN, Y. LU, X. TAN, D. GUO, M. OWEN, and M. MacDOUGALL (*UM-Kansas City, and UTHSC at San Antonio, USA; and Imperial Cancer Research Fund, London, UK*).

**0055** 4:45 Dentin Matrix Protein 1 is Predominantly Expressed in Osteocytes, but not in Osteoblasts. S. TOYOSAWA\*, S. SHINTANI, T. FUJIWARA, T. OOSHIMA, N. IJUHIN, and T. KOMORI (*Graduate School of Dentistry, and Graduate School of Medicine, Osaka University, Japan*).

**Seq#: 11** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 7**

#### **Neuroscience/TMJ - Jaw Biomechanics and Movement**

**Chairpersons: J. Nickel and L. Gallo**

**0056** 3:00 Intra- and Inter-subject Variation in TMJ and Muscle Forces during Static Molar Biting. J.C. NICKEL\*, B. THORNTON, and L.R. IWASAKI (*College of Dentistry, UNMC, Lincoln, NE, USA*).

**0057** 3:15 Tests of Numerically Modeled TMJ Eminence Morphology and Muscle Forces. L.R. IWASAKI\*, B. BAIRD, R. WALKER, P. YAO, and J.C. NICKEL (*College of Dentistry, UNMC, Lincoln, NE, USA*).

**0058** 3:30 Wrench Axis Parameters for Representing Mandibular Muscle Forces. J.A. GAL\*, L.M. GALLO, G.M. MURRAY, C.W.L. JOHNSON, I.J. KLINEBERG, and S. PALLA (*University of Western Sydney, Australia; University of Zürich, Switzerland; and University of Sydney, Australia*).

**0059** 3:45 Articular Surfaces' Incongruity Changes in Clicking TMJs. D.B. GOESSI\*, L.M. GALLO, and S. PALLA (*Center for Dental and Oral Medicine and Maxillofacial Surgery, University of Zürich, Switzerland*).

**0060** 4:00 Characterization of Stress-field Paths in Asymptomatic TMJs. L.M. GALLO\*, D.B. GOESSI, and S. PALLA (*Center for Dental and Oral Medicine and Maxillofacial Surgery, University of Zürich, Switzerland*).

**0061** 4:15 The Relative Effects of Occlusal Splints on Mandibular Movement Velocity between Healthy and TMD Subjects. C.-Z. WU\*, N.-Y. HUANG, and S.-L. CHOU (*School of Dentistry, Taipei Medical University, and TMUH Dental Department, Taipei, Taiwan*).

**0062** 4:30 Photoelastic Analysis of the Influence of Occlusal Surface Formation on Apical Stress Distribution Under Vertical Load. M. ZHANG\*, M.Q. WANG, J.J. WANG, and T. SHIBATA (*Stomatological College, Fourth Military Medical University, Xi'an, China*).

4:45 Discussion

**Seq#: 12** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 11**

**Oral Medicine & Pathology - Clinical Studies of Oral Malignancy and HIV Disease, Cell Physiology**

**Chairpersons: N. Johnson and A. Nolan**

**0063** 3:00 HLA-mismatch Associated with Increased Risk of Lip Malignancy Following Transplantation. A. NOLAN\*, J.M. THOMASON, N.M. GIRDLER, R.A. SEYMOUR, and J.V. SOAMES (*University of Newcastle upon Tyne, UK*).

**0064** 3:15 The Association between Viadent® Use and Oral Leukoplakia. A.K. MASCARENHAS\*, C.M. ALLEN, and J. LOUDON (*Ohio State University, Columbus, USA*).

**0065** 3:30 Extranodal Oral Lymphoma (EOL) Other Than Waldeyer's Ring: A Study of 44 Cases Reclassified According to W.H.O. F. FACCHETTI, G. FAVIA\*, E. MAIORANO, M. PAGANO, S. GANDOLFO, E. BARDELLINI, and A. MAJORANA (*Universities of Brescia, Bari, and Torino, Italy*).

**0066** 3:45 Progression of Salivary Gland Disease in HIV-positive Women. R. MULLIGAN\*, M. NAVAZESH, J. POGODA, J. PHELAN, M.A. REDFORD, M. ALVES, and D. GREENSPAN (*USC, Los Angeles, CA, Statology, Truckee, CA, NYU, NY, NIDCR, Bethesda, MD, UIC, Chicago, IL, and UCSF, CA, USA*).

**0067** 4:00 The Contribution of Candidiasis to AIDS Prognosis. J.F. HILTON\* and A.J. CANCHOLA (*University of California San Francisco, USA*).

**0068** 4:15 Expression of Neurotrophin-4 in Oral Epithelial Cells. T. KAKU\*, Y. ABIKO, M. NISHIMURA, and K. KUSANO (*Oral Pathology, Health Sciences University of Hokkaido, Japan*).

**0069** 4:30 Evidence for Activation of the  $\alpha_2\beta_1$  Integrin Collagen Receptor. Z. WANG\* and L.V. PARISE (*University of North Carolina at Chapel Hill, USA*).

**0070** 4:45 Factors Affecting Caspase Expression in Human Dermal Fibroblasts. D.V. MESSADI\*, A.D. LE, Y.D. WU, H.S. DUONG, P.A. KELLY, and C.N. BERTOLAMI (*School of Dentistry, University of California Los Angeles, School of Dentistry, University of California San Francisco, and Charles Drew University, CA, USA*).

**Seq#: 13** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Makuhari Messe: Room 302**

**Periodontal Research - Neutrophils in Periodontal Disease**

**Chairpersons: M. Ryder and A. Gustafsson**

**0071** 3:00 Metabolism and Kinetics of Diacylglycerol Kinase in LJP Neutrophils. A. KANTARCI\*, K. OYAZU, J. BADWEY, and T.E. VAN DYKE (*Goldman School of Dental Medicine, Boston University, and Brigham & Women's Hospital/Harvard Medical School, Boston, MA, USA*).

**0072** 3:15 Lipopolysaccharide of *P. gingivalis* Induces Calprotectin Secretion from Human Neutrophils. J. KIDO\*, R. KIDO, M. KATAOKA, SURYONO, M.K. FAGERHOL, and T. NAGATA (*Tokushima University School of Dentistry, Japan; and Ullevål Hospital, Oslo, Norway*).

**0073** 3:30 Smoking Effects on Elastase Activity in Human Peripheral Polymorphonuclear Leukocytes. H. ITO\*, M. MIURA, Y. NUMABE, and K. KAMOI (*Department of Periodontology, Nippon Dental University, Tokyo, Japan*).

**0074** 3:45 Alterations of Cytokine Secretion from Monocytes in Cigarette Smoke Exposure. M. SAGHIZADEH, Y. DING, A. SOSKOLNE, N. NGUYEN, and M. RYDER\* (*UCSF, USA; and Hebrew University, Israel*).

**0075** 4:00 Increased IL-1 $\beta$  Release from Monocytes in Patients with Chronic Periodontitis. A. GUSTAFSSON\*, B. ÅSMAN, and K. BERGSTRÖM (*Karolinska Institutet, Stockholm, Sweden*).

**0076** 4:15 Glycosidases, Host Cells, and Periodontopathogens in GCF from Refractory Periodontitis Patients. P.-Ö. SÖDER\*, B. SÖDER, S. AIRILA MÅNSSON, B. KLINGE, and L.J. JIN (*Institute of Odontology, Karolinska Institutet, Stockholm, Sweden*).

**0077** 4:30 Effects of APM on PMN Phagocytosis and ROS-induced Inflammation. M. KIGAWA\*, S. KATAOKA, Y. OCHIAI, and K. KANEKO (*Oral-Care Research Lab., Lion Corporation, Kanagawa, and Graduate School of Dentistry, Kyushu University, Fukuoka, Japan*).

**0078** 4:45 Effect of L-ascorbic Acid 2-phosphate on PMNs Function: An *in vitro* Study. S. MORISHIMA\*, K. KAZUNO, Y. OCHIAI, and K. KANEKO (*Oral-Care Research Laboratories, Lion Corporation, Kanagawa, Japan*).

**Seq#: 14** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Makuhari Messe: Room 304**

**Periodontal Research - Chemokines and Metalloproteinases**

**Chairpersons: J. Bernimoulin and J. Deschner**

**0079** 3:00 Regulation of Interleukin-8 Production by Tyrosine Kinases in Human Gingival Fibroblasts. T. YUCEL-LINDBERG\*, A. GUSTAVSSON, H. DOMEIJ, and T. MODÉER (*Department of Pediatric Dentistry, Institute of Odontology, Karolinska Institutet, Huddinge, Sweden*).

**0080** 3:15 Cytokines and Periodontopathogen Profile in the Inflammatory Processes of Periodontal Diseases. E. LEE\* and C.C. TSAI (*Kaohsiung Medical University, Kaohsiung City, Taiwan*).

**0081** 3:30 Periodontal Pathogens Induce the Expression of IL-8 and Cellular Adhesion Molecules. N. PISCHON\*, M. KRÜLL, N. SUTTORP, and J.-P. BERNIMOULIN (*Department of Periodontology, and Department of Infectious Diseases, Humboldt-University, Berlin, Germany*).

**0082** 3:45 Chemokine Secretion by Alveolar Bone Cells and Gingival Fibroblasts. J. DESCHNER\*, B. ARNOLD, A. KAGE, and J.-P. BERNIMOULIN (*University of Cologne, and Humboldt University Berlin, Germany*).

**0083** 4:00 Chemotaxis Blocking of IL-8 in Gingival Crevicular Fluid. R.K. LIU\*, C.F. CAO, and H.X. MENG (*Stomatology College of Peking University, Beijing, China*).

**0084** 4:15 Antagonistic Regulation of IL-8 mRNA in Gingival Epithelial Cells by *Porphyromonas gingivalis*. G.T.-J. HUANG\*, D. KIM, H.K. KURAMITSU, and S. KINDER HAAKE (*UCLA School of Dentistry, and SUNY Buffalo School of Dental Medicine, USA*).

**0085** 4:30 Analysis of Expression of MMP-8 in Periodontally Diseased Tissue. H. SHIMIZU\*, Y. HOSOKAWA, D. YAMAGUCHI, T. NAKANISHI, and T. MATSUO (*School of Dentistry, Tokushima University, Japan*).

**0086** 4:45 Matrix Metalloproteinase-9 Production in Human Gingival Fibroblasts Co-cultured with Lymphocytes. H. DOMEIJ\*, I. ANDURÉN, T. YUCEL-LINDBERG, and T. MODÉER (*Department of Pediatric Dentistry, Karolinska Institutet, Huddinge, Sweden*).

**Seq#: 15** **Wednesday, June 27, 3:00 pm - 5:00 pm**  
**Oral Session, Prince Hotel: Hall 5**

**Prosthodontics Research - Arthur R. Frechette Research Award Competition**

**Chairpersons: N. Garrett and R. Ettinger**

**0087** 3:00 Expression of Proteoglycans of Osteoblastic Cells Grown on Titanium. M. NISHIMURA\*, R.J. WADDINGTON, P. ROONEY, M.S. LANGLEY, G. EMBERY, H. NIKAWA, H. NISHIMURA, and T. HAMADA (*Hiroshima University, Japan; and UWCM, Cardiff, UK*).

**0088** 3:15 Effect of Connector Design on Fracture Resistance of All-ceramic Fixed Partial Dentures. W. OH\*, N. GOETZEN, D. HOSKINS, and K.J. ANUSAVICE (*College of Dentistry, University of Florida, Gainesville, USA*).

**0089** 3:30 Effects of TiN Coating on Adhesiveness of Bone-forming Cells. D. SHIN\*, J.L. ONG, J.G. DUH, and K.H. CHUNG (*University of Texas HSC, San Antonio, USA; National Tsing Hwa University, and National Yang Ming University, Taiwan*).

**0090** 3:45 Effects of Taper and Cement on Tensile Strength of Implant-supported Restorations. G. BERNAL, M. OKAMURA\*, and C.A. MUNOZ (*Loma Linda University, CA, USA; and Kyushu Dental College, Kitakyushu, Japan*).

**0091** 4:00 Affect of Ultrasonic Dowel Removal on the Apical Seal. C. BAHN\*, F. TUNG, and G.R. GOLDSTEIN (*College of Dentistry, New York University, USA*).

**0092** 4:15 Microleakage of Class V Composites Conditioned with Various Irrigation Solutions. E.C. SUNG, S.M. CHAN\*, E. TAI, T. CHEN, J.H. SIM, and A.A. CAPUTO (*UCLA School of Dentistry, USA*).

**0093** 4:30 Corrosion Behavior and Surface Analyses of Ni-Cr-Mo Dental Casting Alloys. H.H. HUANG\*, M.C. LIN, C.H. HSU, C.D. HO, and C.C. HSU (*Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

4:45 Discussion

**Seq#: 16** **Thursday, June 28, 8:00 am - 8:45 am**  
**Plenary, Makuhari Messe: Conv Hall B**

**Plenary - Cytokines in Health and Diseases**

**0094** 8:00 Cytokines in Health and Disease. T. KISHIMOTO (*Osaka University, Japan*).

**Seq#: 17** **Thursday, June 28, 9:00 am - 11:00 am**  
**Symposium, Prince Hotel: Hall 1**

**Dental Materials - Antibacterial Properties of Direct Placement Restorative Materials**

**Chairperson: F. García-Godoy**

**0095** 9:00 Antibacterial Properties of Direct Placement Restorative Materials. F. GARCÍA-GODOY\*, I.A. MJÖR, M.J. TYAS, and S. IMAZATO (*Tufts University, and University of Florida, USA; University of Melbourne, Australia; and Osaka University, Japan*).

9:05 Antibacterial Properties of Dental Amalgam. I. MJÖR (*University of Florida, Gainesville, US*).

9:35 Antibacterial Properties of Glass Ionomer and Compomers. M. TYAS (*University of Melbourne, Australia*).

10:05 Antibacterial Properties of Resin Composites. S. IMAZATO (*Osaka University, Japan*).

10:35 Discussion

**Seq#: 18** **Thursday, June 28, 9:00 am - 11:00 am**  
**Symposium, Prince Hotel: Hall 2**

**Cariology, Nutrition, and Salivary Research - Chewing Gum and Oral Health**

**Chairpersons: P. Lingström and H. Whelton**

**0096** 9:00 Symposium: Chewing Gum and Oral Health. P. LINGSTRÖM\*, T. IMFELD, D.T. ZERO, D. BIRKHED, and C.J. KLEBER (*University of Göteborg, Sweden; University of Zürich, Switzerland; University of Indiana, and Purdue University, USA*).

9:10 The Role of Sugar-containing and Sugar-substituted Chewing Gum in Demineralization for Caries and Erosion. T. IMFELD (*University of Zürich, Switzerland*).

9:35 Chewing Gum, Salivary Stimulation, and Remineralization. D. ZERO (*Indiana University, Indianapolis, US*).

10:00 Active Ingredients against Caries, Plaque, and Malodor. D. BIRKHED (*Göteborg University, Sweden*).

10:25 The Role of Chewing Gum in Dental Cleaning and Tooth Whitening. C. KLEBER (*Indiana University, Ft. Wayne, US*).

10:45 Discussion

**Seq#: 19** **Thursday, June 28, 9:00 am - 11:00 am**  
**Symposium, Makuhari Messe: Int'l Conf Room**

**IADR Craniofacial Biology, Mineralized Tissue, and Periodontal Research Groups and the JADR - New Frontiers in Bone and Tooth Development**

**Chairpersons: T. Suda and T. Yoneda**

**0097** 9:00 New Frontiers of Bone and Tooth Development. T. SUDA\* and T. YONEDA (*Nippon Dental University, Japan; and UTHSC, San Antonio, TX, USA*).

9:05 The Evolutionary Origin of Species-specific Facial Morphology. J. HELMS (*University of California, San Francisco, US*).

9:30 BMP Signaling by Smad Proteins. K. MIYUZONO (*University of Tokyo, Japan*).

9:55 Molecular and Cellular Events Controlled by 1,25(OH)<sub>2</sub> Vitamin D3 in Odontogenic Cells. A. BERDAL (*Laboratoire de Biologie-Odontologie, Paris, France*).

10:20 Action of Inflammatory Cytokines on Osteoclast Differentiation. N. TAKAHASHI (*Showa University, Tokyo, Japan*).

10:45 Discussion

**Seq#: 20** **Thursday, June 28, 9:00 am - 11:00 am**  
**Hands-on Workshop, Makuhari Messe: Room 301 A**

**Educational Research - Transcultural Dental Research—A Comparison of Japanese and United Kingdom Post-graduate Systems**

[Supported by Matsumoto Dental University]

**Chairperson: R. Bedi**

**0098** 9:00 Transcultural Dental Research—A Comparison of Japanese and United Kingdom Post-graduate Systems. T. DEGUCHI, T. TAKAMATA\*, K. KAMIJO, N. ISHII, and R. BEDI (*Matsumoto Dental University Clinic, Japan; and Eastman Dental Institute, University College London, UK*).

9:05 Educational Research—United Kingdom and Japanese Systems. T. DEGUCHI (*Eastman Dental Institute, London, UK*).

9:30 Healthcare Systems with Insurance—United Kingdom and Japanese Systems. T. TAKAMATA (*Eastman Dental Institute, London, UK*).

9:55 Post-graduate Experiences—Differences Between the United Kingdom and Japan. K. KAMIJYO (*Eastman Dental Institute, London, UK*).

10:20 Orthodontic Research—Migration Studies. N. ISHII (*Eastman Dental Institute, London, UK*).

10:45 Discussion

**Seq#: 21 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 9**

**Behavioral Sciences/Health Services Research - Caries, Fluoride, Fluorosis**

**Chairpersons: H. Kwon and K. Carino**

**0099** 9:00 Dental Caries Prevalence of Elementary Schoolchildren in Mongolia. H.K. KWON\*, J.J. SUH, J.Y. HUH, S.J. LIM, B. OYUNBAT, and K.H. JUNG (*College of Dentistry, Yonsei University, Seoul, Korea*).

**0100** 9:15 Risk Factors for Early Childhood Caries among Filipino Pre-school Children. K.M.G. CARINO\*, K. SHINADA, and Y. KAWAGUCHI (*Tokyo Medical and Dental University, Japan*).

**0101** 9:30 Long-term Outcome of Risk-based Management of Dental Caries in Young Children. J. JOKELA\* and K. PIENIHÄKKINEN (*Korpilahti-Muurame Health Center, and University of Turku, Finland*).

9:45 Discussion

**0103** 10:00 Caries and Fluorosis among Children in Fluoridated Toronto. J.L. LEAKE\*, F. GOETTLER, B. STAHL-QUINLAN, and H. STEWART (*University of Toronto, and Toronto Public Health, Canada*).

**0104** 10:15 Age-commenced Toothbrushing and Dental Fluorosis. E.F.M. CROWLEY\*, H.P. WHELTON, and D. O'MULLANE (*Oral Health Services Research Centre, University Dental School and Hospital, Wilton, Cork, Ireland*).

**0105** 10:30 Dental Caries and Erosion among GB 4-18-year-olds. D.A. WHITE\*, G. BRADNOCK, and A.J. MORRIS (*School of Dentistry, University of Birmingham, UK*).

**0106** 10:45 The First Study on Dental Fluorosis in Myanmar, 2000. K.K. MAW\* and W. SOE (*Department of Health, Yangon, and Civil Hospital, Daik-U, Myanmar*).

**Seq#: 22 Thursday, June 28, 9:00 am - 11:00 am**  
**Poster Discussion Session, Makuhari Messe: Room 303**

**Behavioral Sciences/Health Services Research - Health Services Research: Utilization**

**Chairpersons: L. Kaste and G. Aslanyan**

9:00 Poster Viewing

**0107** 9:30 Continuity of Medical Care and its Association with Dental Advice. W.D. BRADFORD, L.M. KASTE\*, and P.J. NIETERT (*Medical University of South Carolina, Charleston, USA*).

**0108** 9:40 Effects of Fee-paying Systems on Consumption of Dental Services. C.Y.Y.J. YEUNG\*, E.C.M. LO, and C.H. CHU (*Faculty of Dentistry, University of Hong Kong*).

**0109** 9:50 Community Caries-preventive System for 1.5-year-old Children in Nagasaki. K. KAWASAKI\*, N. HARAGUCHI, T. TAGUCHI, Y. IJIMA, T. NISHIYAMA, H. HAYASHIDA, K. TANAKA, and M. YANO (*Nagasaki University, Japan*).

**0110** 10:00 Patient Follow-up in Academic-Dental Insurance Collaborative Research. D. GREMBOWSKI\* and M.A. DEL AGUILA (*School of Dentistry, University of Washington, and Delta Dental/Washington Dental Service, Seattle, USA*).

**0111** 10:10 Oral Health Utilization and Expenditure of Adults in Thailand. T. VACHIRAROJPISAN\*, S. KRAISURAPONG, S. JANGTHANORM, S. PANNARUNOTHAI, and Y. KAWAGUCHI (*Tokyo Medical and Dental University, Japan; Mahidol University, and Naresuan University, Thailand*).

**0112** 10:20 Reforming Dental Health Policy: Effects on Health Services in Armenia. G. ASLANYAN\*, J.L. LEAKE, A.A. KULIDJIAN, and D. ZAKUS (*University of Toronto, Canada*).

10:30 Discussion

**Seq#: 23 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 B**

**Craniofacial Biology - Orthodontic Treatment Outcome**

**Chairpersons: E. Richardson and P. Lestrel**

**0113** 9:00 Maxillary Remodeling Following Retraction of the Central Incisors. E.R. RICHARDSON\* and S.K. MALHOTRA (*Meharry Medical College, Nashville, TN, USA*).

**0114** 9:15 A Randomized Prospective Trial Comparing Two Retraction Techniques: Initial Findings. T.-M. XU\*, J. ZHANG, X.-Y. ZHANG, S. BAUMRIND, and R.L. BOYD (*School of Stomatology, Peking University, Beijing, China; and University of the Pacific, San Francisco, USA*).

**0115** 9:30 Treatment Effects of RPE Comparing Hass and Hyrax Palatal Expanders. M. RITTER\*, T. AZIN, R. GHANDAHARI, L. LUKE, H.-B. MOON, C. SADOWSKY, and L. WILL (*Department of Orthodontics, University of California at Los Angeles (UCLA), University of Illinois at Chicago (UIC), and Harvard School of Dental Medicine, USA*).

**0116** 9:45 Maxillary Displacement Induced by Surgically Assisted Rapid Palatal Expansion. C.-H. CHUNG\*, A. WOO, J. ZAGARINSKY, R.L. VANARSDALL, and R.J. FONSECA (*University of Pennsylvania, Philadelphia, USA*).

**0117** 10:00 Maxillary Protraction Therapy with or without Rapid Palatal Expansion. G. VAUGHN\*, B. MASON, H.-B. MOON, and P. TURLEY (*Section of Orthodontics, UCLA School of Dentistry, USA*).

**0118** 10:15 Measurement of Functional Appliance Therapy Relapse: A Fourier Analytic Study. P.E. LESTREL\* and J.P. DEVINCENZO (*Section of Oral Biology, UCLA School of Dentistry, and Private Practice, San Luis Obispo, CA, USA*).

**0119** 10:30 Incisor Trauma and Early Class II Orthodontic Treatment. L.D. KOROLUK\*, J.F.C. TULLOCH, C.L. PHILLIPS, and W.R. PROFFIT (*University of North Carolina, Chapel Hill, USA*).

**0120** 10:45 Effects of a Titratable Oral Appliance on Supine Airway Size. S. HIYAMA\*, S. TSUIKI, T. ONO, N. IMAMURA, Y. ISHIWATA, T. KURODA, and A.A. LOWE (*Tokyo Medical and Dental University, Japan; and University of British Columbia, Vancouver, Canada*).

**Seq#: 24 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 301 B**

**Dental Anesthesiology Research - Pain, Local Anesthesia, and Sedation**

**Chairpersons: R. Dionne and K. Fukushima**

**0121** 9:00 Mechanosensitivity and Chemosensitivity in Patients with Abnormal Oral Sensation. T. SHIBAJI\*, M. KAWASHIMA, S. MASHU, K. TODA, and N. SUZUKI (*Orofacial Pain Management and Cognitive Neurobiology, Graduate School, Tokyo Medical and Dental University, Japan*).

**0122** 9:15 Evaluation of Effects of 3-D Video Glasses on Perceived Pain and Unpleasantness Induced by Restorative Dental Treatment. B. BENTSEN\*, P. SVENSSON, and A. WENZEL (*University of Aarhus, and University of Aalborg, Denmark*).

**0123** 9:30 Felypressin Decreases Cardiac Output in Patients under General Anesthesia. K. SUNADA\*, S. ABE, M. YAMASHIRO, and H. FURUYA (*Nippon Dental University, Tokyo, Japan*).

**0124** 9:45 Effects of Epinephrine in Local Anesthetics on Heart Rate Variability. Y. ISHIDA\*, I. KAWADA, Y. HIURA, F. MURAYAMA, S. KAWANAMI, and S. ONO (*Hinode Dental Hospital Makomanai, Sapporo, Japan*).

**0125** 10:00 Effects on Infiltration Anesthesia of Lidocaine Containing Polysaccharides. M. HARAGUCHI\*, M. SASAO, I. NOGUCHI, and Y. AMEMIYA (*Department of Dental Anesthesiology, Tsurumi University, Yokohama, and Showa Yakuhin Kako Co., Ltd, Kawasaki, Japan*).

**0126** 10:15 Hemodynamics in Subjects Not Informed About a Change of Dentists. Y. OKAMOTO\*, A. AGARIGUCHI, Y. UNEZAKI, and H. INOUE (*Department of Removable Prosthodontics and Occlusion, Osaka Dental University, Japan*).

**0127** 10:30 Usefulness of Non-invasive Pulse Oximetry in Homebound Dental Care Patients. M. OOHASHI\*, Z. MORSE, K. SANO, and T. KANRI (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**0128** 10:45 Clonidine as a Drug for Intravenous Conscious Sedation. M. YAMASHIRO\* and H. FURUYA (*Nippon Dental University, Tokyo, Japan*).

**Seq#: 25 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 8**

**Dental Materials - Adhesion to Enamel and Orthodontic Bonding**

**Chairpersons: N. Nakabayashi and J. Powers**

**0129** 9:00 Effects of Regional Enamel and Prism Orientation on Bond Strengths. Y. SHIMADA\*, J.M. ANTONUCCI, W.G. McDONOUGH, G.E. SCHUMACHER, and J. TAGAMI (*Tokyo Medical and Dental University, Japan; and NIST and ADAHF/PRC, Gaithersburg, MD, USA*).

**0130** 9:15 Influence of BisGMA and Phosphoric Acid Concentration upon Enamel Bonding. N. NAKABAYASHI\*, A. WATANABE, Y. IWASAKI, S. KURODA, T. MAGARA, and K. SOMA (*Graduate School of Tokyo Medical and Dental University, Japan*).

**0131** 9:30 Effect of Acid-etching on Enamel Bond of a Self-etching Primer. P.A. MIGUEZ\*, P.N.R. PEREIRA, P.S. CASTRO, M.F. NUNES, and E.J. SWIFT, Jr. (*University of North Carolina at Chapel Hill, USA*).

**0132** 9:45 Micro-tensile Bond Strength of Eleven Modern Adhesive Systems to Enamel. S. INOUE\*, B. VAN MEERBEEK, Y. ABE, Y. YOSHIDA, P. LAMBRECHTS, G. VANHERLE, and H. SANO (*Catholic University of Leuven, Belgium; and Hokkaido University and Hiroshima University, Japan*).

**0133** 10:00 Influence of Adhesive Solvents and Storage Solutions on  $\mu$ -tensile Bond Strength of Bleached Enamel. C. FRANCCI\*, R.J. DE PAULA, J.A.P. MOURA, L.A.D. LOGUÉRCIO, and A.P.G. DUARTE (*University of São Paulo, Brazil*).

**0134** 10:15 Bond Strength of Self-etching Primer/Orthodontic Resin to Enamel. J.M. POWERS\*, R. STRATMANN, S. ASGARI, and M. MESSERSMITH (*University of Texas-Houston Dental Branch, USA*).

**0135** 10:30 Reducing Curing Time in Orthodontics with a Regular Light Unit. L. HUCK\*, A. KLOCKE, H. KORBMACHER, and B. KAHL-NIEKE (*University of Hamburg, Germany*).

**0136** 10:45 Evaluation of Plasma Arc Curing Lights for Bonding Orthodontic Brackets. A. KLOCKE\*, L. HUCK, H. KORBMACHER, and B. KAHL-NIEKE (*University of Hamburg, Germany*).

**Seq#: 26 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 302**

**Dental Materials - Ceramic Properties**

**Chairpersons: K. Anusavice and R. Giordano**

**0137** 9:00 Effect of Fluorine Content on Microstructure of Fluorcanasite Glass-ceramics. N.-Z. ZHANG\* and K.J. ANUSAVICE (*Department of Dental Biomaterials, College of Dentistry, University of Florida, Gainesville, USA*).

**0138** 9:15 Influence of pH on the Fracture Strength of Dental Porcelains. Y.S. JEON\* and M.V. SWAIN (*College of Dentistry, Yonsei University, Seoul, Korea; and Faculty of Dentistry, University of Sydney, Australia*).

**0139** 9:30 Fracture Behavior of Leucite- and Lithia-disilicate-based Hot-pressed Ceramics. K.J. ANUSAVICE\*, A. DELLA BONA, and J.J. MECHOLSKY, Jr. (*Departments of Dental Biomaterials & Materials Science & Engineering, University of Florida, Gainesville, USA*).

**0140** 9:45 The Impact of Water Immersion on a "Hydrothermal" Dental Glass. W.M. PALIN, G.J.P. FLEMING\*, and P.M. MARQUIS (*School of Dentistry, University of Birmingham, UK*).

**0141** 10:00 Effect of Polishing Ceramic Brackets on Their Fracture Strength. C. BRIDI\*, R. GIORDANO, II, and R. POBER (*Boston University, MA, USA*).

**0142** 10:15 Effects of Repeated Firing on Composition of Veneering Ceramics. Y. ALKHIARY, B. WU, and R. GIORDANO\* (*Goldman School of Dentistry, Boston University, MA, USA*).

**0143** 10:30 Profile Changes of Glass Ionomers Immersed in Lactic Acid and Water. C. HENGTRAKOOL\*, G.J. PEARSON, and N.T.N. FRANKEL (*P.S.U., Songkhla, Thailand; QMW, and EDI, London, UK*).

**0144** 10:45 Influence of Resin Coating on Shear Punch Strength of Fuji IX. J. LEIRSKAR\*, H. NORDBØ, G. MOUNT, and H.C. NGO (*University of Oslo, Norway; and University of Adelaide, South Australia*).

**Seq#: 27 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Conv Hall B**

**Dental Materials - Composite Resins**

**Chairpersons: S. Bayne and N. Opdam**

**0145** 9:00 Six-month Clinical Evaluation of the Effectiveness of Bonded Composite Restorations in the Treatment of Cracked Teeth. N.J.M. OPDAM\* and F.J.M. ROETERS (*College of Dental Sciences, University of Nijmegen, The Netherlands*).

**0146** 9:15 Characterization and Resealing of Resin Margin Defects. J.B. DENNISON\*, P. YAMAN, and D.J. FASBINDER (*University of Michigan, Ann Arbor, USA*).

**0147** 9:30 A 7-year Clinical Evaluation of Zirconium-Silica-containing Composite Resin Placed on the Posterior Dentition. M. SUZUKI\* and D. DAVIDSON (*Faculty of Dentistry, University of Manitoba, Canada*).

**0148** 9:45 Two-center Clinical Evaluation of a Resin Composite: Two-year Findings. P. BRUNTON\*, V.V. GORDAN, M. WILSON, R. CRISP, I.A. MJÖR, and N. WILSON (*University of Manchester, UK; and University of Florida, Gainesville, USA*).

**0149** 10:00 Twelve-month Clinical Evaluation of a Condensable Composite. D.C. SARRETT\*, J. ROSE, C.N. BROOKS, and E. SHELLARD (*School of Dentistry, Virginia Commonwealth University, Richmond, USA*).

**0150** 10:15 2-year Wear and Clinical Performance of Packable Posterior Composite. A.D. WILDER, J. PERDIGÃO, S.C. BAYNE\*, H.O. HEYMANN, and E.J. SWIFT, Jr. (*UNC, Chapel Hill, and UMN, Minneapolis, USA*).

**0151** 10:30 Clinical Performance of Solitaire 2 in Posterior Teeth: One-year Results. C.-P. ERNST\*, C. RISSING, and B. WILLERS-HAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**0152** 10:45 Clinical Evaluation of a New Direct Composite Resin System: 6-month Results. M.F.L. NAVARRO\*, M. BALKENHOL, R.F.L. MONDELLI, A. ISHIKIRIAMA, M.F.F. JORGE, E. BRES-CIANI, and J.R.P. LAURIS (*FOB-USP, Brazil*).

**Seq#: 28 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 3**

#### Dental Materials - Corrosion, Amalgam

**Chairpersons: M. Marek and F. Özer**

**0153** 9:00 Effect of Fluoride from Glass Ionomer on Discoloration and Corrosion of Titanium. N. HORASAWA\* and M. MAREK (*Matsumoto Dental University, Shiojiri, Japan; and Georgia Institute of Technology, Atlanta, USA*).

**0154** 9:15 Staining and Bacterial Growth on Telescopic Crowns. G. NOWAK\*, P. PFEIFFER, H. SCHÜTT-GEROWITT, K. FUNKE, and W. NIEDERMEIER (*University of Cologne, Germany*).

**0155** 9:30 Electrochemical Characterization of Experimental Binary Titanium Alloys. Z. CAI\*, L. CARRASCO, Y. TAKADA, O. OKUNO, and T. OKABE (*Baylor College of Dentistry, Texas A&M University System HSC, Dallas, USA; and Tohoku University, Sendai, Japan*).

**0156** 9:45 Electrochemical Behavior of Coupled Dental Implant Alloys. Y. ODA\*, T. KITAMURA, M. HATTORI, K. HASEGAWA, M. YOSHINARI, and E. KAWADA (*Tokyo Dental College, Chiba, Japan*).

**0157** 10:00 Amalgam Repair: Evaluation of Bond Strength and Microleakage. F. ÖZER\*, N. ÜNLÜ, B. ÖZTÜRK, and A. ŞENGÜN (*University of Selçuk, Konya, Turkey*).

**0158** 10:15 Kinetics of Tin Oxide Growth on  $\gamma_1$  Phase of Dental Amalgam. M. MAREK\* (*Georgia Institute of Technology, Atlanta, USA*).

**0159** 10:30 Gastrointestinal Absorption and Bioavailability of Mercury in Man. G. SANDBORGH-ENGLUND\*, C. EINARSSON, and J. EKSTRAND (*Karolinska Institutet, Huddinge, Sweden*).

**0160** 10:45 Analysis of Mercury Vapor for Tytin Amalgam at Different pH Levels. B. PENUGONDA\* and B.I. COHEN (*New York University, and Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**Seq#: 29 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 4**

#### Mineralized Tissue - Mineralization/Physical - Chemical Aspects

**Chairpersons: C. Robinson and J. Kirkham**

**0161** 9:00 Amelogenin Aggregation and the Control of Enamel Crystal Growth. J. KIRKHAM\*, S. MASCA, H. CHEN, D.A. SMITH, S.R. WOOD, R.C. SHORE, S.J. BROOKES, and C. ROBINSON (*Leeds Dental Institute, and Department of Physics and Astronomy, University of Leeds, UK*).

**0162** 9:15 Subunit Structure and Growth in Enamel Hydroxyapatite Crystals. C. ROBINSON\*, R.C. SHORE, S.R. WOOD, S.J. BROOKES, and J. KIRKHAM (*Leeds Dental Institute, University of Leeds, UK*).

**0163** 9:30 Thermodynamic Stability of Dicalcium Phosphate Dihydrate in Solution under Constant  $N_2/CO_2$  at 25°C. T. TAKAHASHI\*, K. SATO, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**0164** 9:45 Hydrolysis of Octacalcium Phosphates and Thermodynamic Stability of Their Hydrolyzates. S. OOKUBO\*, K. SATO, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**0165** 10:00 Effects of Phosphatidylinositol-specific Phospholipase C on Mineralization of MC3T3-E1 Cells. Y. SUGAWARA\*, K. SUZUKI, M. KOSHIKAWA, M. ANDO, A. MATSUMOTO, and J. IIDA (*Hokkaido University, Sapporo, Japan*).

**0166** 10:15 The Effects of Bisphosphonates on Mineralization of Osteoblastic Cell, MC3T3-E1. M. KOSHIKAWA\*, K. SUZUKI, Y. SUGAWARA, A. MATSUMOTO, and J. IIDA (*Hokkaido University, Sapporo, Japan*).

**0167** 10:30 Stoichiometry and Thermodynamic Solubility of Human Dentin and Bone Crystals. H. KOMATSU\*, K. SATO, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**0168** 10:45 Comparing Human Bone Quality in Fluoride-free Montreal and Fluoridated Toronto. D. CHACHRA, H. LIMEBACK\*, A.E. GROSS, C. HUTCHISON, D. ZUKOR, M. SCHWARTZ, and M.D. GRYNPAS (*University of Toronto, and McGill University, Montreal, Canada*).

**Seq#: 30 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 A**

#### Oral Health Research - Powered Toothbrushes, Toothbrushing Models

**Chairpersons: A. Chohayeb and E. Motegi**

**0169** 9:00 A Robot Comparison of Efficacy of Battery Toothbrushes. G.M. DRIESEN\*, U. BIELFELDT, G. HELBIG, P.R. WARREN, and C.-P. ERNST (*Braun GmbH, Kronberg, and University of Mainz, Germany*).

**0170** 9:15 A Novel Data-logger to Record Subject Compliance in the Use of Powered Toothbrushes. G.I. MCCracken\*, M. de JAGER, J. JANSSEN, and P.A. HEASMAN (*University of Newcastle upon Tyne, UK; and PCI Eindhoven, The Netherlands*).

**0171** 9:30 The Effects of Two Power Toothbrushes on Calculus and Stain. N.C. SHARMA, J.G. QAQISH, M.A. CUGINI\*, and P.R. WARREN (*BioSci Research Canada, Ltd., Mississauga, Ontario; and Oral-B Laboratories, Boston, MA, USA*).

**0172** 9:45 Testing Prototype Brush Heads for Powered Toothbrushes-Refining the Model. P.A. HEASMAN, M. de JAGER\*, F. STACEY, L. HEASMAN, N. STEEN, and G.I. MCCracken (*University of Newcastle upon Tyne, UK; and PCI Eindhoven, The Netherlands*).

**0173** 10:00 A Multi-center Study of 2 Powered Toothbrushes for Plaque Removal Efficacy. G.I. MCCracken, M. de Jager, P. van KEMENADE\*, M. MILWARD, F. STACEY, L. HEASMAN, N. STEEN, I.L.C. CHAPPLE, and P.A. HEASMAN (*University of Newcastle upon Tyne, and University of Birmingham, UK; and PCI Eindhoven, The Netherlands*).

**0174** 10:15 A Methodology to Examine Dentin Wear Associated with Powered Toothbrushes. G.H. JOHNSON, D. BALLARD\*, J. MCGOLDRICK, and S. THIELKE (*University of Washington, Seattle, and Philips Oral Healthcare, Inc., Snoqualmie, WA, USA*).

**0175** 10:30 Powered Toothbrushing Compared with a Professional Polish. G.A. van der WEIJDEN\*, M.F. TIMMERMAN, M. PISCAER, Y. IJZERMAN, and U. van der VELDEN (*Department of Periodontology, ACTA, Amsterdam, The Netherlands*).

**0176** 10:45 Toothbrush Functionality Measurements: Access and Cleaning. E. ERSEN, L. COFFMAN, M.L. BERG, N. LI, and J.J. HEFFEREN\* (*University of Kansas, Lawrence, USA; and Peking University, China*).

**Seq#: 31** **Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 10**

**Oral & Maxillofacial Surgery - Orofacial Cancer: Genesis, Aetiology, and Treatment**

**Chairpersons: Y. Hu and B. Al-Nawas**

**0177** 9:00 The Expression of CD69 Driven by Con A and PHA on PBMC of Patients with Tumors. Y. HU\*, M. LI, M.B. XU, X.S. ZENG, and S.N. ZHANG (*Stomatological Hospital of Guang Dong Province, Guang Zhou, PR China*).

**0178** 9:15 Expression of P-glycoprotein in Head and Neck Cancer Cells. T. UEMATSU\*, A.-S. YAMADA, R. DOTO, H. HOTOMI, T. MATSUURA, D. KAYAMOTO, K. FURUSAWA, and M. YAMAOKA (*Matsumoto Dental University, Shiojiri, Nagano, Japan*).

**0179** 9:30 Potential Biomarkers for Head and Neck Squamous Cell Carcinoma. J.J. BROWN\*, H. XU, M. QIN, F. LIU, H. CHEN, J. NISHITANI, and X. LIU (*Charles R. Drew University, Los Angeles, CA, USA*).

**0180** 9:45 Altered Gene Expression Associated with the Immortalization of Oral Keratinocytes. J. NISHITANI\*, M. QIN, F. LIU, H. CHEN, G. KANAMORI, J.J. BROWN, J.L. McQUIRTER, and X. LIU (*Charles R. Drew University, Los Angeles, CA, USA*).

**0181** 10:00 The Prevalence of Alcohol, Cigarette, and Illicit Drug Use by English Adolescents. I. SUTHERLAND\* and J.P. SHEPHERD (*Violence Research Group, Department of Oral and Maxillofacial Surgery, University of Wales College of Medicine, Cardiff, UK*).

**0182** 10:15 Oral Cancer Awareness: A Survey of Medical and Dental Personnel. L.M. CARTER and G.R. OGDEN\* (*Unit of Oral Surgery & Medicine, University of Dundee, Scotland, UK*).

**0183** 10:30 Long-term Effect of Radiation Therapy of the Head and Neck. B. AL-NAWAS\*, K.A. GRÖTZ, Ü. BASKAYA, S. GENITSARIOTIS, D. VEHLING, H.-D. KUFFNER, and W. WAGNER (*Maxillofacial Surgery, Medical Microbiology, and Radiology, University Mainz, Germany*).

**0184** 10:45 Odontoblast Decay Following Therapeutic Irradiation, a Confocal Laser Scanning Microscopy Study. R. BRAHM\*, K.A. GRÖTZ, B. AL-NAWAS, H. GÖTZ, H. DUSCHNER, and W. WAGNER (*Maxillofacial Surgery, Applied Structure, and Microanalytics, University Mainz, Germany*).

**Seq#: 32** **Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 304**

**Periodontal Research - Mechanical Therapy**

**Chairpersons: D. Kinane and J. Kamma**

**0185** 9:00 Clinical Findings Following Quadrant Root Planing vs. Full-mouth Root Planing. D.A. APATZIDOU\* and D.F. KINANE (*Glasgow Dental Hospital & School, UK*).

**0186** 9:15 Antibody Dynamics Following Quadrant Root Planing vs. Full-mouth Root Planing. D.A. APATZIDOU and D.F. KINANE\* (*Glasgow Dental Hospital & School, UK*).

**0187** 9:30 The Effects of Scaling and Root Planing in Early-onset Periodontitis. J.J. KAMMA\*, A. CARREL, R. GMÜR, and P.C. BAEHNI (*Private Practice, Athens, Greece; University of Zürich, and University of Geneva, Switzerland*).

**0188** 9:45 Supportive Periodontal Therapy in Specialist Institutions and General Dental Practice. P.M. PRESHAW\* and P.A. HEASMAN (*University of Newcastle, UK*).

**0189** 10:00 Success Rate of Root-resected Molars and Bridges. A Retrospective Clinical Study. A. KRAUSSE\*, S.M. BESCHNIDT, T. GERDS, and J.R. STRUB (*Department of Prosthodontics, and Institute of Medical Biometry and Medical Informatics, Albert-Ludwigs-University, Freiburg, Germany*).

**0190** 10:15 Subgingival Plaque Removal by a Novel Low-abrasive Airpolishing Powder. G.J. PETERSILKA\*, D. STEINMANN, I. HÄBERLEIN, and T.F. FLEMMIG (*Clinic for Periodontology Münster, and ESPE Dental AG, Seefeld, Germany*).

**0191** 10:30 Tooth Movement after Guided Tissue Regeneration in Dogs. P.M. TREJO, R.J. KOHAL, R.S. GUIHA\*, and R.G. CAFFESSE (*University of Texas, Houston, USA*).

10:45 Discussion

**Seq#: 33** **Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 5**

**Prosthodontics Research - Crown Preparation Design, Crown Retention, Dowel and Core Retention**

**Chairpersons: K. Boening and P. Millstein**

**0192** 9:00 Effectiveness of Preparation Guidelines for Full-ceramic Restorations. C. BEGAZO\*, M. BEKIUS, J.M. van der ZEL, and M.A.J. VAN WAAS (*ACTA, Amsterdam, The Netherlands*).

**0193** 9:15 All-Ceramic Crowns and Preparation Characteristics—A Mathematical Approach. G. ØILO\*, A. TÖRNQUIST, D. DURLING, and M. ANDERSSON (*IKO, University of Oslo, Norway; LT-Elektroniklaboratorium, and Nobel Biocare, Gothenburg, Sweden*).

**0194** 9:30 Fit of Alumina Cores Depending on Preparation Plane Variation. K.W. BOENING\*, M. OSTERTAG, and M.H. WALTER (*Department of Prosthetic Dentistry, Technical University, Dresden, Germany*).

**0195** 9:45 Fit of Cast Titanium Crowns Depending on Kind of Preparation. S. REICH, H. BRAUNER, and W. KRETSCHMAR\* (*Department of Prosthodontics, University of Erlangen-Nuremberg, Germany*).

**0196** 10:00 Crown Retention with Use of Different Sealing Systems on Prepared Dentin. S. WOLFART\*, J. LINNEMANN, and M. KERN (*Christian-Albrechts University at Kiel, Germany*).

**0197** 10:15 Electroformed Telescope Crowns—A Hydraulic System. F.-J. FABER\* and C. HUBER (*School of Dental Medicine, University of Cologne, Germany*).

**0198** 10:30 Assessment of Retention for Extracoronary Restorations: Influence of Die Spacer. M.F. AYAD\* (*College of Dentistry, University of Tanta, Egypt*).

**0199** 10:45 Determining Resin Cement Post Retention with Eugenol/Non-eugenol Sealer. P.L. MILLSTEIN\*, A. AL-KHALIDI, and J. MEYEROWITZ (*Tufts School of Dental Medicine, Boston, MA, USA*).

**Seq#: 34 Thursday, June 28, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 11**

#### **Pulp Biology - Vasoactive Response**

**Chairpersons: B. Matthews and Y. Ogawa**

**0200** 9:00 Sensory Thresholds and Blood Flow in Teeth with Inflamed Pulp. O. VEERAYUTHWILAI\*, W. ASWAWORARIT, N. VONGSAVAN, and B. MATTHEWS (*Mahidol University, and Thammasat University, Thailand; and Department of Physiology, University of Bristol, UK*).

**0201** 9:15 Responses of Intradental Nerves to Hydrostatic Pressure and Mechanical Stimulation. B. MATTHEWS\* and S. WANACHAN-TARARAK (*Department of Physiology, University of Bristol, UK*).

**0202** 9:30 Vasodilatory Function of Substance P and L-arginine/Nitric Oxide Pathway. S.K. KIM\*, B. KARABUCAK, H. WELSCH, S. SIMCHON, and S. KIM (*Kyungpook National University, Korea; and University of Pennsylvania, USA*).

**0203** 9:45 Effect of Vasoconstrictor on Oxalate Treatment to Exposed Human Dentin. M. SOO-AMPON\*, W. HONGPAK-MANOON, and N. VONGSAVAN (*Department of Hospital Dentistry, and Physiology and Biochemistry, Faculty of Dentistry, Mahidol University, Thailand*).

**0204** 10:00 Agonist-induced Vasoactive Responses in Isolated Perfused Pulpal Arterioles. C.Y. YU\*, N.M. BOYD, S.J. CRINGLE, E.N. SU, V.A. ALDER, and D.Y. YU (*University of Western Australia, and Murdoch University, Western Australia*).

**0205** 10:15 Effects of Vasoconstrictors on Fluid Flow through Dentin in vivo. V. KERDVONGBUNDIT, N. VONGSAVAN\*, and B. MATTHEWS (*Faculty of Dentistry, Mahidol University, Thailand; and Department of Physiology, University of Bristol, UK*).

**0206** 10:30 Localization of Vasoactive Intestinal Polypeptide Immunoreactivity in Rat Dentin-Pulp Complex. C. DOBÓ-NAGY\*, G. BECSKY, G. SZABÓ, Z. LOHINAI, and E. FEHÉR (*Semmelweis University, Budapest, and University of Debrecen, Hungary*).

**0207** 10:45 Temporal and Spatial Expression of VEGF during Mouse Tooth Development. Y. OGAWA\*, C. KITAMURA, T. MOROTOMI, and M. TERASHITA (*Kyushu Dental College, Kitakyushu, Japan*).

**Seq#: 35 Thursday, June 28, 9:00 am - 12:45 pm**  
**GC-sponsored Symposium, Makuhari Messe: Conv Hall A**

#### **GC International - Clinical Application Glass-ionomers and Its Applications**

**[Supported by the IADR and GC International]**

**Chairperson: H. Sano**

**0208** 9:00 Opening Comments.

9:05 TEM Study of Adhesive Systems with Human Dentin. B. VAN MEERBEEK (*Catholic University of Leuven, Belgium*).

9:55 Clinical Experience of Glass Ionomers. S. SAITO (*Saito Dental Clinic, Tokyo, Japan*).

10:45 Root Surface Caries and Its Treatment. H. ONOSE (*Nihon University, Tokyo, Japan*).

11:35 Minimal Intervention Dentistry and the Role of Glass-ionomer Cement. M. TYAS (*University of Melbourne, Australia*).

12:27 Discussion

**Seq#: 36 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Prosthodontics Research - General**

**0209** Influence of a New Implant Design on Clinical Survival to 30 Months. H.F. MORRIS\*, S. OCHI, and N.D. GLASS-COCK (*Dental Implant Clinical Research Group, Veterans Affairs Medical Center, Ann Arbor, MI, USA*).

**0210** Fracture Strength of Metal-composite Restoration for Posterior Dental Implant. Y. TAKAHASHI\*, K. HISAMA, H. SHIMIZU, S. KOYANAGI, H. KIDO, S. UKON, H. SATO, and T. HABU (*Fukuoka Dental College, Japan*).

**0211** Effects of Splinting and Interproximal Contact Tightness on Load Transfer by Implant Restorations. D.L. GUICHET, D. YOSHINOBU\*, and A.A. CAPUTO (*UCLA School of Dentistry, and VA Medical Center, West Los Angeles, USA*).

**0212** The Effects of Cements and Overlays on Implant Rigidity. M. PURWO, G.M. CARTER, and J.A. HOOD\* (*University of Otago, Dunedin, New Zealand*).

**0213** Temperature Increases in Bleaching Gels by Four Dental Lights. E. PONRAJ, W. ZHANG\*, and Y. LI (*Loma Linda University, CA, USA*).

**0214** The Effects of Hemostatic Solutions on Dentin Permeability. C.H. KIM, J.S. SHIM\*, and K.W. LEE (*Yonsei University, Seoul, Korea*).

**0215** The Effects of Desensitizing Agents and Toothbrushing on Dentin Permeability, *in vitro*. J.W. LEE, J.S. SHIM, and K.W. LEE\* (*Yonsei University, Seoul, Korea*).

**0216** Profilometric Measurements of Refinished Ceramics after Orthodontic Debonding. J.C. CLEMETSON\*, B.H. MILLER, E.S. BROOKS, P.W. WOODS, and J.T. KEESLER (*Baylor College of Dentistry, TAMUHSC, Dallas, and Private Practice, Neenah, WI, USA*).

**0217** Mutagenicity of Ethanol Extracts of Dentures of Oral Carcinoma Patients. S. CATAPANO\*, D. ROSSI, G. PAGANETTO, and P. BALDISSARA (*University of Ferrara, Italy*).

**0218** Staining and Protein Sorption on Artificial Teeth. S. MISAWA\*, K. SAKURAI, and T. SUGIYAMA (*Tokyo Dental College, Chiba City, Japan*).

**0219** Importance of Medical Conditions in the Delivery of Prosthodontic Care. A. SAMANT\*, J. MARTIN, and M. JANAL (*New Jersey Dental School, UMDNJ, Newark, USA*).

**0220** Changes of Oral Mucosal Blood Flow Following Dry Ice Stimulation. S.M. HECKMANN\*, M. POPP, M.G. WICHMANN, J.G. HECKMANN, H. MARTHOL, M.J. HILZ, and T. HUMMEL (*Department of Prosthodontics and Department of Neurology, University of Erlangen-Nuremberg, and University of Dresden Medical School, Germany*).

**0221** The Antibacterial Effect of a Photocatalyst TiO<sub>2</sub> on *Candida albicans*. N. SAWADA\*, Y. KUBO, S. HIKAGE, K. KAWAMURA, and K. SAKAGUCHI (*School of Dentistry, Health Sciences University of Hokkaido, Japan*).

**0222** Impact of Components of Denture Acrylic Resin on *Candida* Adhesion. S. MAKIHIRA\*, H. NIKAWA, M. NISHIMURA, H. EGUSA, C. JIN, and T. HAMADA (*Hiroshima University, Japan*).

**0223** Effects of Acidulated Phosphate Fluoride and Polishing on Composite Materials. K. SOENO\*, H. MATSUMURA, M. ATSUTA, and K. KAWASAKI (*School of Dentistry, Nagasaki University, Japan*).

**Seq#: 37 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Dental Materials - Adhesion to Caries-affected Dentin**

**0224** *In vitro* Bond Strengths of Adhesive Systems to Caries-affected Dentin vs. Sound Dentin. Y. NARA\*, S. SUDA, S. SASAO, T. KIMISHIMA, T. MASEKI, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Japan; and Forsyth Institute, Harvard School of Dental Medicine, USA*).

**0225** Bonding of 4-META/MMA-TBB Resin to Caries-affected and Wet-demineralized Dentin. K. HIRANUMA\*, Y. IWASAKI, A. WATANABE, and N. NAKABAYASHI (*Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

**0226** Relationship among Bond Strengths of Antibacterial Adhesive Systems to Carious Dentin, DIAGNodent™-value and Dyeing-degree with Caries Detector®. S. OSHITA\*, Y. NARA, S. SUDA, S. SASAO, K. KUBOTA, T. KIMISHIMA, T. MASEKI, and H. TANAKA (*School of Dentistry, Nippon Dental University, Tokyo, Japan*).

**0227** The Adhesive Interfacial Microstructure between Resin and Caries-affected Dentin. M. OHBA\*, K. ITOH, H. HISAMITSU, and S. WAKUMOTO (*Department of Operative Dentistry, School of Dentistry, Showa University, Japan*).

**0228** Effects of Various Types of Dentin Treated with/without Carisolv™ on Bonding of an Adhesive System. S. SUDA\*, T. MASEKI, T. KIMISHIMA, Y. NARA, and H. TANAKA (*Department of Operative Dentistry, Nippon Dental University, Japan*).

**0229** Effect of Chemo-Mechanical Caries Removal on Dentin Bonding. E.M.A. RUSSO\*, R.C.R. CARVALHO, A.P. ANDRADE, A.F. PAGLIARI, and K.B. CAMPOS (*School of Dentistry, University of São Paulo, SP, Brazil*).

**Seq#: 38 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Dental Materials - Adhesion: Leakage and Marginal Adaptation**

**0230** Fractographic Analysis of the Weakest Zone within Resin-Dentin Bonds. M. KAGA\*, M. HASHIMOTO, H. OHNO, H. SANO, K. ENDO, Y. ARAKI, M. KUBOTA, and H. OGUCHI (*School of Dentistry, Hokkaido University, School of Dentistry, Health Sciences University of Hokkaido, and School of Dentistry, Iwate Medical University, Japan*).

**0231** Effect of Adhesive Technique on the Marginal Seal of Compomers. M. IRIE\*, K. SUZUKI, and R. RICHTER (*Okayama University Dental School, Japan; and ESPE, Seefeld, Germany*).

**0232** Microleakage of Class V Restorations Using Self-etching Adhesives. M.A. SARAVIA\*, M. TOLEDANO, M.V. FUENTES, L. CEBALLOS, M. HANNING, and R. OSORIO (*UPCH, Lima, Peru; University of Granada, Spain; and University of Freiburg, Germany*).

**0233** Marginal Adaptation of Self-etching Adhesives in Class II Cavities. C.-P. ERNST, S. STREICHER\*, A. VICTOR, and B. WILLERSHAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**0234** Effect of Flowable Resin on Microleakage of Packable Composite Restorations. G.C. SALES, E. PISANESCHI\*, A.C. BOMBANA, and M.F.L. NAVARRO (*Catholic University of Campinas, and University of São Paulo, Bauru, Brazil*).

**0235** The Effect of Flowable Resin Lining on the Marginal Microleakage of Condensable Composite Resin Restoration. J.H. MOON\* and Y.G. CHO (*Department of Conservative Dentistry, College of Dentistry, Chosun University, Kwangju, Korea*).

**Seq#: 39 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Dental Materials - Adhesion: Microleakage, Cavity Design, Bond Test**

**0236** Microleakage of One-step and Two-step Adhesive Systems under Thermocycling and Simultaneous Repeated Load. I. KIZUKI\*, M. MIYAMOTO, T. MASEKI, T. KIMISHIMA, Y. NARA, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Japan; and Forsyth Institute, Harvard School of Dental Medicine, Boston, MA, USA*).

**0237** Does Soft-start Polymerization Improve Marginal Adaptation of Class V Restorations- C.-P. ERNST, S. KLOSE\*, A. VICTOR, and B. WILLERSHAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**0238** Effect of Remaining Demineralized Dentin on Microleakage. M. TUNTIPRAWON\*, A. WATANABE, Y. IWASAKI, and N. NAKABAYASHI (*Faculty of Dentistry, Chulalongkorn University, Thailand; and Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

**0239** Flowable Composites in Class V Cavities: An *in vitro* Study. B.D. PINTO\* and A.F. MONNERAT (*Universidade do Estado do Rio de Janeiro, Brazil*).

**0240** Microleakage of Tooth-colored Cervical Restorations under Cyclic Loading. N. AL TUWAIJRI\*, E.S. AKPATA, and V.B. DHURU (*King Saud University, Riyadh, Saudi Arabia; and Marquette University, Milwaukee, WI, USA*).

**0241** Three-dimensional Simulation of a Class V Restoration. Y. FUKASE\*, M.C. PETERS, and M. NISHIYAMA (*University of Michigan, Ann Arbor, USA; and Nihon University, Tokyo, Japan*).

**0242** The Effect of Cavity Form on Stress Produced by Loading. H. YOKOTA\*, M. KAWAGUCHI, H. YOKOTA, S. KUBO, and Y. HAYASHI (*School of Dentistry, Nagasaki University, Japan*).

**0243** Resin-on-Dentin Direct Repair Pull Resistance. A New Measuring Proposal. G. SAEZ\*, F. BARCELO, C. ALVAREZ, J. GUERRERO, and C. MORALES (*Dental Materials Research Laboratory, F.O., UNAM, México*).

**0244** The Micro-tensile Bonding Test of Glass-ionomer Cement. S. KATO\*, S. AKAHANE, and K. HIROTA (*R&D Department, GC Corporation, Tokyo, Japan*).

**0245** The Influence of Cavity Design on Microleakage of MTA Fillings. K.S. AYE\*, A. HTANG, H. MINN, and P. HPOO (*Institute of Dental Medicine, Yangon, Myanmar*).

**Seq#: 40 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Dental Materials - Ceramic Mechanical Properties**

**0246** Reliability of a Leucite-based Porcelain Re-pressed with Sprue Button. H.-H. LEE\*, J.-K. DONG, S.-C. OH, and T.-H. JIN (*Wonkwang University, Iksan, Korea*).

**0247** Effect of Thermal Cycling Test on the Flexure Strength of Dental Porcelain. Y. NAKAMURA\*, H. SATO, Y. AKAO, N. SHIRAKI, N. KAWASHIMA, and S. AMMI (*Tsurumi University, Musashi Institute of Technology, and Toin University of Yokohama, Japan*).

**0248** *In vitro* Wear Simulation of Dental Ceramics by an Artificial Mouth. U. LOHBAUER\*, M. PELKA, and A. PETSCHT (*Policlinic of Operative Dentistry, University of Erlangen, Germany*).

**0249** Quantitative Analysis of Marginal Disintegration of Ceramic Inlays. Y. KAWAMURA\*, M. HAYASHI, F. TAKESHIGE, and S. EBISU (*Graduate School of Dentistry, Osaka University, Japan*).

**0250** The Physical Properties of Submicronic  $\text{Al}_2\text{O}_3\text{-ZrO}_2$  Ceramics. Q.B. WAN, S. KOMATSU\*, H. AOYAGI, H. OGURA, and Y. HATA (*West China University of Medical Sciences, PR China; and Nippon Dental University, Niigata, Japan*).

**0251** Effects of Roughness and Cross-head Speed on the NTP Method. T. YONAHARA\*, S. KOMATSU, Y. TAWADA, S. HATA, and Y. HATA (*Nippon Dental University, Niigata, Japan*).

**0252** Edge Chipping during Machining Operations to Shape Dental Ceramics. E.D. REKOW\*, Y. CAO, and G. ZHANG (*University of Medicine and Dentistry of New Jersey, and University of Maryland, College Park, USA*).

**0253** Dynamic Stress Analysis of Diopside-based Glass-ceramic Bridge. K. MURASE\*, S. TSUTSUMI, and M. FUKUMA (*Kinki University, Hiroshima, Kyoto University, and ODIC Osaka, Japan*).

**0254** Development of Aluminum-free Frits Containing Zirconium for Glassy Porcelain. M. KON\*, K. ASAOA, and M. KOBAYASHI (*School of Dentistry, University of Tokushima, and Chiba Institute of Technology, Japan*).

**0255** Influence of Surface Treatment on Flexural Strength of a Glass-ceramic. T. YAMAMOTO\*, T. SAMPEI, M. TAKAMIZU, and A. KOHNO (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**0256** Resin-modified Glass-ionomer Cement Luted Ceramic Inlays. J.W.V. van DIJKEN\* (*Dental School Umeå, Sweden*).

**0257** Fatigue Crack Growth Exponent of CAD/CAM and Castable Ceramics. M. KAKU\*, T. NAKAZATO, H. TAKAHASHI, H. KITAZAKI, F. NISHIMURA, and H. MIURA (*Tokyo Medical and Dental University, Japan*).

**0258** Effect of Load Ratio on Fatigue Crack Propagation of Dental Ceramics. Y. KAWAKAMI\*, F. TAKESHIGE, N. UEGAKI, and S. EBISU (*Graduate School of Dentistry, Osaka University, Japan*).

**0259** Clinical Evaluation of Two Dental Ceramics at 6 Months. M.J.M.C. SANTOS\*, J.C. ROMANINI, R. SAQUETO, C.E. FRANCISCHONE, L.G. LOPES, G.C. SANTOS, Jr., and M.F.L. NAVARRO (*Bauru School of Dentistry, University of São Paulo, Brazil*).

**0260** An Investigation of Toothbrush Abrasion at Margin on All-ceramic Restorations. H. KOIZUMI\*, K. OTANI, F. KOMINE, T. IGARASHI, M. SAITOH, and M. NISHIYAMA (*School of Dentistry, Nihon University, Tokyo, Japan*).

**Seq#: 41 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Wear, Degradation, Color**

**0261** Sorption and Solubility of Selected Restorative Materials. L. CEBALLOS, M.J. VACA\*, M.V. FUENTES, M. TOLEDANO, R. OSORIO, and F. GARCÍA-GODOY (*University of Granada, Spain; and Tufts University, Boston, USA*).

**0262** Color Stability of Self-curing Resins after Immersion in Denture Cleansers. A. ARCIDIACONO\*, M. TIZZANI, and R. SCOTTI (*Department of Prosthodontics, University of Bologna, Italy*).

**0263** Color Stability of Microwave-curing and Light-curing Resins after Immersion in Denture Cleansers. R. SCOTTI\*, A. ARCIDIACONO, and S. CATAPANO (*Department of Prosthodontics, University of Bologna, Italy*).

**0264** Color Stability of Heat-curing Resins after Immersion in Denture Cleaners. F. MARTONE\*, A. ARCIDIACONO, and S. BORTOLINI (*Department of Prosthodontics, University of Bologna, Italy*).

**0265** Effect of Acidulated Phosphate Fluoride on Color of Light-cured Restorative Materials. Y. UMEZU\*, Y. UCHIKAWA, and K. OGIHARA (*Nippon Dental University, Tokyo, Japan*).

**0266** Effects of a Filled-resin Desensitizing Agent on Dentin Abrasion. C. SANGPANICH, S. POOLTHONG, and S. PRAPAKAMOL\* (*Chulalongkorn University, Bangkok, Thailand*).

**0267** An Evaluation of Wear Characteristics of Restorative Composites against Enamel and Gold Alloy. T.S. BAE\*, D.H. WON, I.S. PARK, and C.W. PARK (*School of Dentistry, Chonbuk University, Korea*).

**0268** Wear of Composite Resins Filled with Different-sized Fillers. A. ISHIKAWA\*, H. TANAKA, and Y. TANI (*Nippon Dental University at Tokyo, and University of East Asia, Shimonoseki Shi, Japan*).

**0269** Polymeric Restorative Materials' Degradation in Case of High Caries Challenge. M. PARAIZO, I.C. MATOS, K. DIAS\*, A. GOMES, and M.S. MIRANDA (*UFRJ School of Dentistry, and UERJ School of Dentistry, Rio de Janeiro, Brazil*).

**0270** Surface Roughness and Glossiness of Anterior and Anterior-Posterior Resin Composites. S. YAMAGUCHI\*, T. YOSHIKAWA, Y. NAKAOKI, M. OTSUKI, and J. TAGAMI (*Cariology and Operative Dentistry, Tokyo Medical and Dental University, Japan*).

**Seq#: 42 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Cast, Orthodontic, Instruments, General**

**0271** Accuracy of One-piece Cast FPD vs. That of a Single Crown. Y. AL-MOHAIMEED\* and H. MOHAMMED-TAHAWI (*King Saud University, and National Guard Hospital, Riyadh, Saudi Arabia*).

**0272** Mold Filling of Titanium Using a High Mold Temperature. H. SHIMIZU\*, M. KIKUCHI, O. OKUNO, and T. OKABE (*Fukuoka Dental College, and Tohoku University, Japan; and Baylor College of Dentistry, Texas A&M University System HSC, Dallas, USA*).

**0273** Partition Technique for Titanium Pressure Casting Unit. K. WATANABE\*, S. OKAWA, M. KANATANI, I. BALTAG, S. NAKANO, M. KOBAYASHI, and O. MIYAKAWA (*Niigata University, Japan*).

**0274** Sintering of Slip Cast Titanium Crowns in the Investment Mold. S. OHKAWA\*, K. ISHII, S. KONDO, M. UO, T. SUGAWARA, and F. WATARI (*School of Dentistry, and Faculty of Engineering, Hokkaido University, Sapporo, Japan*).

**0275** Wear Resistance of Ti-6Al-7Nb Alloy Castings. D. IJIMA\*, T. YONEYAMA, H. DOI, H. HAMANAKA, and N. KUROSAKI (*Tokyo Medical and Dental University, Japan*).

**0276** Reaction Layer Thickness of Titanium Casting Using Gypsum-bonded Investment. M. YAN\*, H. TAKAHASHI, F. NISHIMURA, and M.J. LANG (*Chung Shan Medical and Dental College, Taichung, Taiwan; and Tokyo Medical and Dental University, Japan*).

**0277** Effect of Stress-relieving Heat Treatment of Orthodontic Super Stainless Steel (UNS No. S32050) Wire. K.T. OH\* and K.N. KIM (*College of Dentistry, Yonsei University, Seoul, Korea*).

**0278** The Corrosion Assay in TiN-plated and Custom-made Brackets. C.T. KAO\*, Y.C. CHEN, T.H. HUANG, C.C. YEN, and W.K. CHEN (*Chung Shan Medical and Dental College, Taichung, Taiwan*).

**0279** Torsional Resistance of NiTi Files after Sterilization Procedures. G. GAMBARINI, F. Di CARLO, G. PONGIONE, I. VOZZA\*, A. POLIMENI, L. OTTOLENGHI, and L. GALLOTTI-NI (*University of Rome, La Sapienza, Italy*).

**0280** Dynamic Stresses Using Nickel-Titanium Rotary Instruments. R. RAUTH\*, K. TRABERT, and A.A. CAPUTO (*UCLA School of Dentistry, USA*).

**0281** Bending Resistance of Cast and Prefabricated Posts. P. PFEIFFER\*, I. NERGIZ, and U. PLATZER (*School of Oral Medicine, University of Cologne, and School of Oral Medicine, University of Hamburg, Germany*).

**0282** Biomechanical Analysis of Class II MOD Cavity in a Restored Premolar. C.L. LIN\*, H.E. LEE, C.H. WANG, and C.H. CHANG (*Graduate Institute of Dental Sciences, Kaohsiung Medical University, and Institute of Biomedical Engineering, National Cheng Kung University, Taiwan*).

**0283** Experimental Study on Diameter Increase of Orthodontic Wire with Electroplating. H.S. HWANG\*, J.H. CHO, and K.H. LEE (*Department of Orthodontics, Chonnam National University, Kwangju, Korea*).

**0284** Optical Properties of Experimental Au-Pt-based Alloys for Porcelain Bonding. T. SHIRAISHI\*, K. HISATSUNE, Y. TANAKA, E. MIURA, and Y. TAKUMA (*School of Dentistry, Nagasaki University, Japan*).

**0285** Effect of Welding Method on Strength of Laser-welded Gold Alloy. I. WATANABE\*, J. LIU, Y. TANAKA, T. OKABE, and M. ATSUTA (*Nagasaki University, Japan; and Baylor College of Dentistry, Texas A&M University System HSC, Dallas, USA*).

**Seq#: 43 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Diagnostic Systems - Caries

**0286** Ultrasonic Detection of Enamel Surface Demineralization: An *in vitro* Study. A.H. LELY, M.C.D.N.J.M. HUYSMANS\*, and J. LUBBERS (*University of Groningen, The Netherlands*).

**0287** Clinical and Radiographic Caries Diagnosis of 2 Caries Prevalence Areas. V. BHUVAPANICH\*, K. PATTANAPORN, P. PRASERTSOM, and T. WONGSAWAT (*Mahidol University, Chiangmai University, and Ministry of Public Health, Thailand*).

**0288** Effects of Pre- and Peri-natal Factors on Enamel Hypoplasia and ECC. J. DIN, A.J. CASTRO, F.J. AGUTO, N. TINANOFF, G.E. MINAH, and M.-R. WATSON\* (*University of Maryland Dental School, Baltimore, USA*).

**0289** Intra-oral Photographic Usage in Diagnosis of Enamel Hypoplasia. Y. TANABE\*, C. BARROS, F. MCGIBBON, P. NIÑO DE GUZMAN, M.-R. WATSON, and N. TINANOFF (*University of Maryland Dental School, Baltimore, USA*).

**0290** Differential Fluorescence as a Method Used in Caries Diagnosis. A. MIELCZAREK\*, M. KWAŚNY, A. WOJTOWICZ, and M. WIERZBICKA (*Department of Conservative Dentistry, Department of Oral Surgery, Medical University of Warsaw, and Institute of Optoelectr., Military University of Technology, Warsaw, Poland*).

**0291** Comparison of Three Methods for the Diagnosis of Initial Caries. M. GONZÁLEZ A.\*, K. LOYO M., R. BALDA Z., and O. GONZÁLEZ (*University Central de Venezuela, Caracas*).

**0292** Evaluation of Dip-slide Test for Mutans Streptococci and Lactobacilli Enumeration. C.D. BENTLEY\*, E. SIMMONS, and R.R. ARNOLD (*UNC, Chapel Hill, USA*).

**Seq#: 44 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Geriatric Oral Research - Oral Diseases & Tooth Loss in Elders: Epidemiology

**0293** Prevalence of Teeth and Dentures in Norwegian Elderly Individuals. B.M. HENRIKSEN\*, T. AXÉLL, and K. LAAKE (*Section of Gerodontology, Faculty of Dentistry, University of Oslo, and Department of Geriatrics, Ullevaal Hospital, Oslo, Norway*).

**0294** Oral Health Status and Oral Health Behavior of the Elderly in an Institutionalized House for the Elderly in Suburban Jakarta, Indonesia. A. BAHAR\* (*Department of Preventive and Public Health Dentistry, Faculty of Dentistry, University of Indonesia*).

**0295** Patterns and Correlates of Tooth Loss in Community-dwelling Thai Elderly. C. HOSANGUAN\*, C. UNGCHUSAK, S. LEELASITHORN, and P. PRASERTSOM (*Chulalongkorn University, and Ministry of Public Health, Thailand*).

**0296** Tooth Loss and Dental Caries in Elderly Swedish Individuals. S. FURE\* (*Department of Cariology, Göteborg University, Sweden*).

**0297** Future Demand for Prosthetic Appliances in the Elderly in Japan. M. KANATANI\*, S. OKAWA, K. WATANABE, and O. MIYAKAWA (*Niigata University, Japan*).

**0298** Dental Care Program for Homebound Elderly Patients in Shinjuku, Japan. M. TAMURA\*, T. SATO, H. MIURA, and Y. KAWAGUCHI (*Tokyo Medical and Dental University, Japan*).

**0299** Wit 3.0, a Novel Gene-derived Edentulous Oral Mucosa Accelerates Wound Contraction. C. SUKOTJO\*, T. OGAWA, K. IIDA, and I. NISHIMURA (*Jane and Jerry Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, USA*).

**0300** Variations in VA Dental Treatment: Dental Eligibility and Geographic Region Affect Care. J.A. JONES\*, U. BOEHMER, D. BERLOWITZ, A. PITMAN, C.L. CHRISTIANSEN, and N.R. KRESSIN (*US Department of Veterans Affairs, Bedford, and Boston University, MA, USA*).

**0301** Ethnic Differences in Preventive Health and Oral Health Status. H.A. KIYAK\*, P.P. HUJOEL, R.E. PERSSON, G.R. PERSSON, L.V. POWELL, M.I. MacENTEE, and C. WYATT (*University of Washington, Seattle, USA; and University of British Columbia, Vancouver, Canada*).

**0302** Ethnic Differences in Oral-health-related Behaviors in Old Age. M.I. MacENTEE\*, C. WYATT, H.A. KIYAK, P.P. HUJOEL, R.E. PERSSON, G.R. PERSSON, and L.V. POWELL (*University of British Columbia, Canada; and University of Washington, Seattle, USA*).

**0303** Oral Microbial Flora and Denture Wearing of Elderly People. E. HONDA\*, T. MUTOH, N. MAEDA, M. MORITO, M. ISHIKAWA, and K. SHIBUYA (*Tsurumi University School of Dental Medicine, Yokohama, and Lion Corporation, Odawara, Japan*).

**Seq#: 45 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Behavioral Sciences/Health Services Research - Providers: Knowledge, Attitudes & Behaviors

**0304** Professional Training and Dental Health Attitudes of Israeli Dental Students. D. PORAT\*, M. KAWAMURA, and I. ELI (*School of Dental Medicine, Tel-Aviv University, Israel; and School of Dentistry, Hiroshima University, Japan*).

**0305** Dentists' Perception and Opinion in the Provision of Dental Care for the Malaysian Disabled. R. ABDUL-KADIR\*, T.N. MD-DOM, and J. ABD-HAMID (*University of Malaya, and National University of Malaysia, Kuala Lumpur*).

**0306** Appropriateness of Orthodontic Referrals. M.T. CHEW\* and A.K.L. AW (*National Dental Centre, Singapore*).

**0307** Postural Evaluation of Dentists during Common Dental Procedures. G. NAHIRNEY, J. JESS, E. HARRISON, and K. KOMIYAMA\* (*Colleges of Dentistry and Medicine, School of Physical Therapy, University of Saskatchewan, Saskatoon, Canada*).

**0308** Removable Dentures Provided by Dentists, Denturists, and Laboratory Technicians. R. TUOMINEN\* (*Department of Public Health, University of Helsinki, Finland*).

**0309** Knowledge, Attitudes, and Barriers in Tobacco Counseling among Dentists in Bangalore, India. S.S. HIREMATH, S. AJWANI, R. ARORA, and A. AINAMO\* (*Government Dental College, Bangalore, India; and University of Helsinki, Finland*).

**0310** Investigation into Training Opportunities within the Personal Dental Services (PDS). K.B. HILL\* and G. BRADNOCK (*School of Dentistry, University of Birmingham, UK*).

**0311** Referral Patterns to the Pediatric Dental Unit, Kuala Lumpur Hospital. N.N.N. YUNUS\* and R.Z.R. SHAHARDIN (*Institute of Pediatrics, Kuala Lumpur Hospital, Malaysia*).

**0312** Promoters and Barriers of Smoking Cessation Practices of Japanese Dentists. T. HANIOKA\*, Y. MATSUMORI, M. OJIMA, and S. SHIZUKUISHI (*Osaka University, Japan*).

**0313** Dietary Advice within General Dental Practice in the UK. C.M. PINE\*, A. ANDERSON, M. PATERSON, and K. BARTON (*Dental School, and Centre for Public Health Nutrition, University of Dundee, Scotland, UK*).

**0314** Objective Intra-oral Findings from Adverse Reaction Reports. G.B. LYGRE\*, N.R. GJERDET, and L. BJÖRKMAN (*UNIFOB/University of Bergen, Norway*).

**Seq#: 46 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Cariology Research - Microbiology, Caries Prediction, Carogenicity, S. mutans, Prevention**

**0315** Identification of *Streptococcus mutans* and *Streptococcus sobrinus* Recovered from Saliva Samples of Schoolchildren by PCR Method. A. SKOCZYŃSKA, I. STRUŻYCKA\*, K. SZCZYPA, and W. HRYNIEWICZ (*Department of Conservative Dentistry, Medical University of Warsaw, Sera and Vaccines Central Research Laboratory, Warsaw, Poland*).

**0316** Caries Risk Assessment of Singaporean Kindergarten Children: A Pilot Study. C.S. HSU, T. LOH, and C.S. TEO\* (*Department of Preventive Dentistry, Faculty of Dentistry, National University of Singapore*).

**0317** Comparison of Predictive Value of Caries Activity Tests in Children. J. TSUBOUCHI\*, S. YAMAMOTO, and T. SHIMONO (*Department of Pediatric Dentistry, Okayama University Dental School, Japan*).

**0318** Mutans Streptococci in Plaque and Saliva and Caries Development. M. SEKI\*, F. KARAKAMA, T. TERAJIMA, Y. ICHIKAWA, T. OZAKI, and Y. YAMASHITA (*Nihon University School of Dentistry, Tokyo, Japan*).

**0319** Evaluation of Cariogenic Potential of Xylosylfructoside by an Artificial Mouth System. T. KAMODA\*, T. SATO, M. NIWA, T. NISIZAWA, N. HANADA, and S. IMAI (*Nippon Dental University at Tokyo, and National Institute of Infectious Diseases, Tokyo, Japan*).

**0320** Acid Tolerance of Fluoride-resistant Strains of *Streptococcus sobrinus* in vitro. J.Y. SHENG\* and Z. LIU (*School of Stomatology, Shanghai Second Medical University, China*).

**0321** Morphological Study of *Streptococcus mutans* in Early Colonization on Enamel. L.N. HASHIZUME\*, K. SHINADA, Y. YAMASHITA, and Y. KAWAGUCHI (*Tokyo Medical and Dental University, Japan*).

**0322** New Dental Drug Delivery System for Removing Mutans Streptococci. N. HANADA, Y. NOMURA\*, H. TAKEUCHI, H. SENPUKU, H. IDA, E. YOSHIKAWA, and T. KUMAGAI (*National Institute of Infectious Diseases, BML Co. Ltd., and Hiyoshi Dental Clinic, Japan*).

**Seq#: 47 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Implantology Research - Animal Studies-Bioceramics and Surface Modifications**

**0323** Implanted Octacalcium Phosphate is More Resorbable than Other Calcium-Phosphate Implants. S. KAMAKURA\*, Y. SASANO, T. SHIMIZU, K. HATORI, O. SUZUKI, M. KAGAYAMA, and K. MOTEGI (*Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**0324** Soft Tissue Reactions of Sol-gel-derived Titania-coated Implants. T.O. NÄRHI\*, H. PALDAN, T. PELTOLA, I.O. KANGASNIEMI, T.C. LINDHOLM, A. YLI-URPO, and R.-P. HAPPONEN (*University of Turku, Finland*).

**0325** Biocompatibility of Titanium/Hydroxyapatite Functionally Graded Implant Fabricated by SPS. R. MIYAO\*, A. YOKOYAMA, H. MATSUNO, F. WATARI, M. UO, T. KAWASAKI, M. OMORI, and T. HIRAI (*Graduate School of Dental Medicine, Hokkaido University, and Institute for Materials Research, Tohoku University, Japan*).

**0326** Histological Analysis of Cementum-like Tissue on Dental Implant. K. TOMIZUKA\*, Y. YAMASHITA, T. SUSAMI, and T. TAKATO (*University of Tokyo, and Tokyo Medical and Dental University, Japan*).

**0327** Bone Response to Zirconia Ceramic Implants: An Experimental Study in Rabbits. D. PATIANNA\*, G. PETRONE, G. ORSINI, M. PIATTELLI, F. RIPARI, and M. QUARANTA (*Dental School, Universities of Chieti and Rome, Italy*).

**0328** A Histomorphometric Analysis of Effect of Surface Treatment on Osseointegration. Y. KIM\* and S.J. HEO (*Seoul National University, Korea*).

**0329** Bone Healing around Screw-shaped Titanium Implants with Three Different Surface Topographies. Y.H. KOH\*, Y.J. KIM, and H.J. CHUNG (*Chonnam National University, Gwangju, South Korea*).

**0330** Sandblasted and Acid-etched vs. Machined Implants: A Histological Study in Rats. B. ASSENZA\*, V. MARINHO, A. SCARANO, R. CELLETTI, C. MINKIN, G. PETRONE, and G. IEZZI (*Department of Skeletal Biology, School of Dentistry, University of Southern California, Los Angeles, USA; and Dental School, University of Chieti, Italy*).

**0331** Bone Response to Implants Sandblasted with Different Techniques: An Experimental Study in Rabbits. G. IEZZI\*, A. PIATTELLI, M. PAOLANTONIO, A. SCARANO, and M. PIATTELLI (*Dental School, University of Chieti, Italy*).

**0332** Cortical Bone Healing around Titanium- and Nitride-coated Implants: An Experimental Study in Rabbits. D. ARGENTIERO\*, V. MARINHO, A. SCARANO, G. PETRONE, G. IEZZI, R. CELLETTI, and C. MINKIN (*Department of Skeletal Biology, School of Dentistry, University of Southern California, Los Angeles, USA; and Dental School, University of Chieti, Italy*).

**0333** Bone Healing around Titanium-nitride-coated Implants: An Experimental Study in Rats. G. AZZONE\*, V. MARINHO, A. SCARANO, G. PETRONE, G. IEZZI, R. CELLETTI, and C. MINKIN (*Department of Skeletal Biology, School of Dentistry, University of Southern California, Los Angeles, USA; and Dental School, University of Chieti, Italy*).

**0334** The Hard- and Soft-tissue Reactions to Nonsubmerged Titanium Implants in Beagle Dogs. G. PETRONE\*, G. IEZZI, G. ORSINI, B. ASSENZA, U. THAMS, A. SCARANO, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**Seq#: 48 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Implantology Research - Surface Modifications/Analyses**

**0335** Chemical Interaction of Acids for Titanium Implant Decontamination. M. TAKEUCHI\*, Y. YOSHIDA, Y. ABE, Y. NAKAYAMA, M. OKAZAKI, and Y. AKAGAWA (*Hiroshima University, and Toray Research Center, Japan*).

**0336** Contamination Analysis of Commercially Available Roughened Screw Implants. K. WATANABE\*, T. TAKAYAMA, and N. KOJIMA (*R&D Department, GC Corporation, Tokyo, Japan*).

**0337** Effects of Ti and TiN Coating on Stability and Corrosion Characteristics of Abutment Screws. H.S. KWEON\*, K.S. KAY, and H.C. CHOE (*University of Chosun, Kwang-ju, Republic of Korea*).

**0338** EIS and XPS Study on Titanium Surfaces Blasted with TiO<sub>2</sub> Particles. K. MUSTAFA\*, J. PAN, J. WROBLEWSKI, and K. ARVIDSON (*Karolinska Institutet, Huddinge, Royal Institute of Technology, Stockholm, and Postgraduate Dental Education Center, Örebro, Sweden*).

**0339** Application of Oxygen Ion Implantation to Titanium Surfaces. T. SAWASE\*, A. WENNERBERG, K. BABA, and M. ATSUTA (*Department of Fixed Prosthodontics, Nagasaki University, Japan*).

**0340** Calcium Titanate Coating on Ti for Improvement of Calcium Phosphate Formation by Poling. Y.J. PARK\*, J.E. SONG, K.S. HWANG, D.H. JU, C.H. LIM, and H.R. RAWLS (*Chonnam National University, Korea; and University of Texas Health Science Center, San Antonio, USA*).

**0341** Improvement of Calcium Phosphate Formation by Poling of Ferroelectric Barium Titanate. Y.J. PARK, Y.R. LEE\*, J.E. SONG, K.S. HWANG, J.L. ONG, and H.R. RAWLS (*Chonnam National University, Korea; and University of Texas Health Science Center, San Antonio, USA*).

**0342** The Physico-chemical Qualities of  $\beta$ -tricalcium Phosphates. A.J. PATYK\*, K. PEHRSSON, A. HUELS, and H.-G. JACOBS (*Georg-August University of Goettingen, Germany*).

**Seq#: 49 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral Health Research - Caries Experiences, Fluoride, Tooth Longevity, Hearing-impaired, Betel Quid, HIV, Lichen Planus, Obstructive Sleep Apnea**

**0343** Dental Caries Experience of Hearing-impaired Children in Caracas, Venezuela. N. LEON\* (*University Central de Venezuela, Caracas*).

**0344** Caries Progression in the Deciduous Molars. L.A. NIELSEN\* (*School of Dentistry, Faculty of Health Sciences, University of Copenhagen, Denmark*).

**0345** Betel-quid Chewing Behavior Related to Precancerous Oral Lesions in Manchou County, Taiwan. Y.A. CHENG\*, Y.S. YANG, C.C. TSAI, and T.Y. HSIEH (*Mei-Ho Institute of Technology, Pingtung, and Kaohsiung Medical University, Taiwan*).

**0346** Rice as a Vehicle for Dietary Fluoride Uptake. J. MCINTYRE, P. WILLIAMS, J. NAJEE, H.D. HA\*, G. IVANOW, and H.C. NGO (*Adelaide University, South Australia, and Rice Growers Co-operative Ltd, Leeton, NSW, Australia*).

**0347** The Study of Japanese Average Life Span of a Tooth. K. KAWASAKI\*, Y. SHIGEMATSU, M. UENE, M. UEMURA, T. MIYAKE, and M. KAMBARA (*Osaka Dental University, Japan*).

**0348** Frequency of Buccal Pathologies in HIV-infected Patients. V. TOVAR\* and J. ROJAS (*Service of Attention to Patients with Infectocontagious Diseases (SAPID), School of Dentistry, Central University of Venezuela*).

**0349** Pulse Oxymetry and Apnea Hypo Index in Obstructive Sleep Apnea. M. KONISHI\*, T. NAGOH, M. OOHASHI, M. KOHNO, and A. HASEGAWA (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**0350** Oral Lichen Planus: An Epidemiological Study in a Venezuelan Population. M. VILLARROEL\* and M. MATA DE HENNING (*Instituto de Investigaciones Odontologicas-Universidad Central de Venezuela*).

**Seq#: 50 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Mineralized Tissue - Bone Formation/Osteoblasts**

**0351** Extracellular Calcium and S100A4 Protein in Osteoblastic Cells. T. SHIBATA\*, W.R. DUARTE, K. TAKENAGA, M. YAMAUCHI, K. OHYA, I. ISHIKAWA, and S. KASUGAI (*Tokyo Medical and Dental University, Japan; University of North Carolina, USA; and Chiba Cancer Center Research Institute, Japan*).

**0352** NO Induces Osteoblast Apoptosis by a Caspase-3-dependent Mechanism via cGMP-PKG. A. INABA\*, A. TOMOMURA, K. FUJIMOTO, and S. KATOH (*School of Dentistry, Meikai University, Saitama, Japan*).

**0353** Preparation and Characterization of Human Recombinant Bone Sialoprotein. A. TSUNODA\*, M. SAITO, M. YAMAUCHI, K. HANDA, M. TAKEMURA, M. SUZUKI, S. YOSHIDA, M. HORIGUCHI, S. SATO, S. HATTORI, M. TOYODA, and T. TERANAKA (*Kanagawa Dental College, Yokosuka, and Nagoya University School of Medicine, Japan*).

**0354** NO Mediates the PEMF Effects on Osteoblast Proliferation and Differentiation. P. DINIZ\*, K. SHOMURA, K. SOEJIMA, and G. ITO (*Kagoshima University Dental School, Japan*).

**0355** Osteogenesis Stimulated by Calcium Ion *in vitro*. Y. CHEN\*, D. NATHANSON, D. COTTRELL, and L. CHOU (*Goldman School of Dental Medicine, Boston University, MA, USA*).

**0356** *In vivo* Bone Formation Stimulated by Statins. L.R. MISSANA\*, J.N. JUAREZ, A.C. AYBAR, A.P. RODRIGUEZ, S.S. BORKOSKY, M.A. ROSPIDO, and S.N. CARINO (*Dental School, Tucumán University, Argentina*).

**0357** Simvastatin Stimulates Osteoblast Proliferation, not Gingival Fibroblasts and PDL Cells. P. THUNYAKITPISAL\* (*Chulalongkorn University, Bangkok, Thailand*).

**0358** Influence of Ascorbic Acid Deficiency on Endochondral Ossification. Y. SAKAMOTO\* and Y. TAKANO (*Graduate School, Tokyo Medical and Dental University, Japan*).

**0359** Osteoblastic Alkaline Phosphatase Serves as Phosphohydrolase at Physiological pH. Y. NAKANO\*, T. KAWAMOTO, K. ODA, and Y. TAKANO (*Graduate School, Tokyo Medical and Dental University, Tsurumi University, and Niigata University, Japan*).

**0360** Proliferation and Differentiation of Rat Bone-marrow-derived Cells. M. TAIRA\*, J. TAKAHASHI, and Y. ARAKI (*Iwate Medical University, Morioka, and Osaka University, Suita, Japan*).

**0361** Growth-dependent Alteration of Intracellular Ca<sup>2+</sup>-handling in Osteoblastic Cells. T. KOIZUMI\*, H. HIKIJI, T. SUSAMI, K. TOMIZUKA, and T. TAKATO (*University of Tokyo, Japan*).

**0362** Adhesion Activity of Osteoblast onto MgCO<sub>3</sub>Ap-collagen Composites. M. OKAZAKI\*, Y. YAMAZAKI, Y. YOSHIDA, A. SHIMADZU, T. UCHIDA, T. KUBO, and Y. AKAGAWA (*Faculty of Dentistry, Hiroshima University, Japan*).

**0363** Effects of Il-1 $\beta$  on Alkaline Phosphatase Activity of MC3T3-E1 Cells. K. SUZUKI\*, G. OHNISHI, Y. UZAWA, T. KAJII, Y. YOSHIMURA, Y. DEYAMA, M. NISHIKATA, N. OHATA, and A. MATSUMOTO (*Hokkaido University, Sapporo, Japan*).

**0364** Glucose and Ascorbate Supplementation Differentially Modulate Nitric-oxide-mediated Cytotoxicity in Mouse Osteoblasts. P.D. DAMOULIS\* and E. GAGARI (School of Dental Medicine, Tufts University, Boston, MA, USA).

**0365** Bone Mineral Density in Young Japanese with Ultrasonic Bone Analyzer. U. SOEJIMA\*, M. SASAKI, E. MOTE-GI, M. NOMURA, T. TORIKAI, T. EBHARA, D. YAMAGUCHI, S. SAITOU, and Y. ISSHIKI (Tokyo Dental College, Chiba, Japan).

**Seq#: 51 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Mineralized Tissue - Bone Remodeling/Osteoclasts

**0366** Establishment of a Transgenic Murine Model for Assessment of hsp27 Protection of Bone Mass. L.F. COOPER\* and Z.-Y. GUO (Dental Research Center, School of Dentistry, University of North Carolina, Chapel Hill, USA).

**0367** Regulation of Bone Sialoprotein (BSP) Gene Transcription by PGE<sub>2</sub>. E. SHIMIZU-SASAKI\*, Y. MATSUDA, M. YAMAZAKI, S. FURUYAMA, H. SUGIYA, J. SODEK, and Y. OGATA (Nihon University School of Dentistry, Matsudo, Chiba, Japan; and MRC Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, Ontario, Canada).

**0368** Changes of Rat Bone Marrow Cell Population after Bisphosphonate Injection. D. HORIE\*, K. AOKI, and K. OHYA (Tokyo Medical and Dental University, Japan).

**0369** Serum BGP Levels in Mandibular Prognathism. A. HIRASHITA\*, K. KAIDA, T. FUKUI, and Y. KUWAHARA (Department of Orthodontics, Tsurumi University, Yokohama, Japan).

**0370** Effect of High [Ca<sup>2+</sup>]<sub>e</sub> on the Expression of OPG and OPGL in Mouse Calvarial Osteoblastic Cells. S.N. KIM\*, Y.H. KIM, Y.H. KIM, G.S. KIM, and J.H. BAEK (Seoul National University, Korea).

**0371** Effects of Bisphosphonates on the Expression of OPG and OPGL in Mouse Calvarial Osteoblastic Cells. Y.H. KIM\*, G.S. KIM, and J.H. BAEK (Seoul National University, Korea).

**0372** Role of TGF- $\beta$  Superfamily in the Osteoclastogenesis Induced by RANKL. T. KOSEKI\*, Y. GAO, T. TSUJISAWA, T. MURASE, T. SATO, I. ISHIKAWA, and T. NISHIHARA (National Institute of Infectious Diseases, Tokyo, Kyushu Dental College, Kitakyushu, and Tokyo Medical and Dental University, Japan).

**0373** Interferon- $\gamma$  Down-regulates and IL-1 $\alpha$  Up-regulates Cathepsin K mRNA Levels in Osteoclasts and Osteoclast Formation. S. KAMOLMATYAKUL\*, W. CHEN, and Y.-P. LI (Prince of Songkla University, Thailand; and Forsyth Institute, Boston, MA, USA).

**Seq#: 52 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Microbiology/Immunology & Infection Control - Oral Streptococci/Biofilms

**0374** PAa and its Putative Regulator Genes from *Streptococcus cricetus*. H. TAMURA\* and H. KATO (Iwate Medical University, Morioka, Japan).

**0375** Functional Analyses of the Dextranase Molecule of *Streptococcus mutans*. H. MORISAKI\*, T. IGARASHI, A. YAMAMOTO, and N. GOTO (School of Dentistry, Showa University, Tokyo, Japan).

**0376** Study on Glycosyltransferases from Oral Streptococci by Two-dimensional Gel Electrophoresis. T. ANDO, Y. SATO, H. TSUMORI\*, A. SHIMAMURA, and H. MUKASA (National Defense Medical College, Saitama, Japan).

**0377** Mannosidase Production by Viridans Streptococci. K.A. HOMER\*, G. ROBERTS, H.L. BYERS, E. TARELLI, R.A. WHILEY, and D. BEIGHTON (Department of Oral Microbiology, GKT Institute, King's College London, UK).

**0378** Purification of an Intergeneric Signaling Molecule from *Streptococcus cristatus*. H. XIE\*, G. BRUCE, T.M. ROSE, and R.J. LAMONT (Meharry Medical College, TN, and University of Washington, Seattle, USA).

**0379** Genes for Receptor Polysaccharide Biosynthesis in *Streptococcus gordonii*. J.O. CISAR\* and D.-Q. XU (NIDCR, NIH, Bethesda, MD, USA).

**0380** A Mutation Detected in the *S. mutans* GS-5 *gbpC* Gene. Y. SATO\* and H. KIZAKI (Tokyo Dental College, Chiba, Japan).

**0381** Identification of Genes Related to Bacitracin-resistance of *Streptococcus mutans*. H. TSUDA\*, Y. SHIBATA, Y. NAKANO, T. KOGA, and Y. YAMASHITA (Faculty of Dental Science, Kyushu University, Fukuoka, and Nihon University School of Dentistry, Tokyo, Japan).

**0382** Genes Required for Glucose Side-chain Formation of Rhamnose Glucose Polysaccharide in *Streptococcus mutans*. K. OZAKI\*, Y. SHIBATA, Y. NAKANO, T. KOGA, and Y. YAMASHITA (Faculty of Dental Science, Kyushu University, Fukuoka, and Nihon University School of Dentistry, Tokyo, Japan).

**0383** Purification and Characterization of *Streptococcus oralis* Co-adhesion with *Porphyromonas gingivalis*. K. MAEDA\*, H. NAGATA, and S. SHIZUKUISHI (Graduate School of Dentistry, Osaka University, Japan).

**0384** In vivo Evaluation of Biofilm on Composite Materials' Surface. M. MERCURI\*, M. TOLEDANO, L. BRESCHI, L. MONTEBUGNOLI, and C. PRATI (School of Dentistry, University of Bologna, Italy; School of Dentistry, University of Granada, Spain; and Anatomy Department, University of Bologna, Italy).

**0385** Substrate Utilization in the Development of a Mixed-species Biofilm Community: A Preliminary Study. J. PRATTEN\*, M. WILSON, and D.A. SPRATT (Eastman Dental Institute, University College London, UK).

**0386** Bacterial Aerotolerance Assay with an Artificial Biofilm Model. T. FUKUDA\*, S. TAKENAKA, M. IWAKU, and E. HOSHINO (Niigata University, Japan).

**0387** Biofilm Formation of *Candida albicans* on Deteriorated Soft Liner. C. JIN\*, H. FUKUSHIMA, H. NIKAWA, S. MAKIHIRA, H. EGUSA, and T. HAMADA (Hiroshima University, Japan).

**Seq#: 53 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Microbiology/Immunology & Infection Control - Sensitivity to Pathogens

**0388** DNA from Periodontopathogenic Bacteria Stimulates Production of TNF- $\alpha$  and IL-6 in Macrophages. C. NONNENMACHER\*, A. DALPKE, S. ZIMMERMANN, L. FLORES-DE-JACOBY, R. MUTTERS, and K. HEEG (Institute of Medical Microbiology and Hygiene, Philipps University, Marburg, Germany).

**0389** CD40 Ligand is Essential for LPS-induced IgA Responses. H. YAMAGUCHI\*, J. MEGA, K. FUJIHASHI, C.F. COX, T. ARAI, J.R. MCGHEE, and K. FUJIHASHI (University of Alabama at Birmingham, USA; School of Dental Medicine, Tsurumi University, and Nihon University School of Dentistry at Matsudo, Chiba, Japan).

**0390** Control of *Streptococcus mutans* by Passive Immunization with Immunized Bovine Milk. Y. SHIMAZAKI\*, M. MITOMA, T. OHO, Y. NAKANO, Y. YAMASHITA, K. OKANO, Y. NAKANO, M. FUKUYAMA, N. FUJIHARA, Y. NADA, and T. KOGA (Kyushu University, Fukuoka, and Nihon University, Tokyo, Japan).

**0391** Role of Palatine Tonsil on the Induction of Naturally Occurring Antibody in Saliva of Rabbits. M. KANDA, H. INOUE\*, T. FUKUIZUMI, T. TSUJISAWA, K. TOMINAGA, and J. FUKUDA (Kyushu Dental College, Kitakyushu, Japan).

**0392** Immunomorphological Analysis of Intraepithelial Lymphocytes in Inflamed Human Gingiva. K. UOBE\*, M. MATSUDA, H. SANESHIGE, H. IMAI, and A. TANAKA (Osaka Dental University, Japan).

**0393** A DNA Vaccine Induces Protective Effects against *P. gingivalis* Infection. H. YONEZAWA\*, K. ISHIHARA, T. KATO, and K. OKUDA (Oral Health Science Center, Tokyo Dental College, Chiba, Japan).

**0394** Expression of Recombinant Vaccine Antigens in Tissue Culture-grown Cells. R. ISODA\*, L.B. PATHANGEY, and T.A. BROWN (Department of Oral Biology, University of Florida, Gainesville, USA).

**0395** Relationship between Pustulosis Palmaris et Plantaris and Chronic Oral Disease. M. KOSUGI\*, K. ISHIHARA, and K. OKUDA (Oral Health Science Center, Tokyo Dental College, Chiba, Japan).

**0396** Establishment of *Porphyromonas gingivalis*-specific T-cell Lines from Atherosclerosis Patients. J.-I. CHOI\*, T.-H. KIM, and S.-J. KIM (Department of Periodontology, Pusan National University, Korea).

**0397** Prior Exposure of Mice to *Fusobacterium nucleatum* Modulates Host Response to *Porphyromonas gingivalis*. H.-Y. SON\*, S.-J. KIM, and J.-I. CHOI (Department of Periodontology, Pusan National University, Korea).

**0398** Cellular and Humoral Immune Responses to Sequential Periodontopathic Bacterial Immunization in Animal Model. S.-K. JEON\*, S.-J. KIM, and J.-I. CHOI (Department of Periodontology, Pusan National University, Korea).

**0399** Regulation of NF-kappa B and Apoptosis by *P. gingivalis*. V. BITKO, S. MISHRA, S. HICKS, N. KHAN, T. ANSAI, T. TAKEHARA, and S. BARIK\* (University of South Alabama, Mobile, USA; and Kyushu Dental College, Kitakyushu, Japan).

**Seq#: 54 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Microbiology/Immunology & Infection Control - Pathogen: Cellular Responses**

**0400** Butyric-acid-induced Apoptosis in p53-deficient Mice. T. KURITA-OCHIAI\*, K. OCHIAI, and K. FUKUSHIMA (Nihon University School of Dentistry at Matsudo, Chiba, and Meikai University School of Dentistry, Saitama, Japan).

**0401** Effect of *Treponema denticola* on Osteoblast and Osteoclast Cell. Y.J. YOO\*, J.H. KANG, H.J. LEE, S.H. OHK, S.W. JIN, and B.K. CHOI (Yonsei University, Seoul, Korea).

**0402** *P. gingivalis* Inhibits Apoptosis in Gingival Epithelial Cells. S. FAGHII\*, O. YILMAZ, W.O. CHUNG, K. WATANABE, Y. PARK, and R.J. LAMONT (University of Washington, Seattle, USA).

**0403** *P. gingivalis* Fimbriae and Cognate Receptors in Gingival Epithelial Cells. O. YILMAZ\* and R.J. LAMONT (University of Washington, Seattle, USA).

**0404** MAP Kinase Pathways in Internalization of *P. gingivalis* by GEC. K. WATANABE\*, C.M. BELTON, and R.J. LAMONT (Department of Oral Biology, University of Washington, Seattle, USA).

**0405** Cytotoxicity of Oral Bacteria on Human Pulpal Fibroblast Culture. B. THAWEBON\*, S. THAWEBON, P. CHUNHABUNDIT, and P. SUPPUKPATANA (Mahidol University, Bangkok, Thailand).

**0406** Unresponsiveness of TLR4-deficient Mice to Chemically Synthesized Bacterial Lipid A. T. OGAWA\*, Y. ASAI, and H. YAMAMOTO (School of Dentistry, Asahi University, Gifu, Japan).

**0407** Immunobiological Activities of *Porphyromonas gingivalis*-type Synthetic Lipid A. Y. ASAI\*, H. YAMAMOTO, H. SHIMAUCHI, and T. OGAWA (School of Dentistry, Asahi University, Gifu, and Faculty of Dentistry, Tohoku University, Sendai, Japan).

**0408** Responsiveness of Human Gingival Epithelial Cells against Bacterial Lipopolysaccharides. Y. OHYAMA\*, Y. ASAI, and T. OGAWA (School of Dentistry, Asahi University, Gifu, Japan).

**0409** IL-6 Inhibits *P. gingivalis*-fimbria-induced Production of Fibronectin by Human Gingival Fibroblasts. Y. MURAKAMI\*, S. TANAKA, K. OCHIAI, S. HANAZAWA, and S. FUJISAWA (Departments of Oral Diagnosis and Oral Microbiology, Meikai University, Saitama, and Division of Infectious Diseases and Immunology, Kyushu University, Fukuoka, Japan).

**0410** A *Streptococcus anginosus* Antigen Induces NO Synthesis by Murine Peritoneal Cells. M. SASAKI\*, C. YAMAURA, Y. OHARA-NEMOTO, S. TAJIKA, M. KOBAYASHI, and S. KIMURA (School of Dentistry, Iwate Medical University, Morioka, Japan).

**0411** Gingival Epithelial Cell Responses to Lipopolysaccharide through Membrane CD14. Y. OHARA-NEMOTO\*, S. HATAKEYAMA, A. OIKAWA, A. KON, and S. KIMURA (School of Dentistry, Iwate Medical University, Morioka, Japan).

**0412** Host Regulatory Interactions between *P. gingivalis* Fimbriae and LPS. G. HAJISHENGALLIS\*, H.T. SOJAR, A. SHARMA, M. MARTIN, R.E. SCHIFFERLE, E. DeNARDIN, and R.J. GENCO (SUNY at Buffalo, NY, USA).

**0413** *Granulicatella elegans* Culture Supernatant Inhibits Mitogen-stimulated Mononuclear Cell Proliferation. T. KANAMOTO\*, S. SATO, M. INOUE, and H. NAKASHIMA (Kagoshima University Dental School, Japan).

**0414** *Streptococcus mutans* Induces Potent Tissue Factor Activity. C.-L. HAHN\*, A.M. BEST, and J.G. TEW (School of Dentistry, Virginia Commonwealth University, Richmond, USA).

**Seq#: 55 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Periodontal Research - Systemic Conditions, Behaviors, and Periodontal Diseases**

**0415** Oral Health and Cardiovascular Disease in Sweden—A Questionnaire Study. K. BUHLIN\*, A. GUSTAFSSON, J. HÅKANSSON, and B. KLINGE (Karolinska Institutet, and National Social Insurance Board, Stockholm, Sweden).

**0416** Periodontal Probing Refusal, Oral and Systemic Health Variables in an Elderly Population. R.J. WEYANT, W.A. BRETZ\*, P.M.A. CORBY, N. MARKOVIC, S. KRITCHEVSKY, and A. NEWMAN (University of Pittsburgh, USA).

**0417** Periodontal Health Disparities in Pregnant Women in a Rural Population. N.C. GEURS\*, M.S. REDDY, S. CLIVER, R. GOLDENBERG, J. HAUTH, and M.K. JEFFCOAT (University of Alabama at Birmingham, USA).

**0418** Periodontal Infections and Pre-term Low Birth Weight. A.P.B. SILVA\*, W.A. BRETZ, M. MENDES, A. SOARES, and W.J. LOESCHE (University of Toronto, Canada; University of Pittsburgh, and University of Michigan, Ann Arbor, USA).

**0419** Periodontal Disease and Preterm Birth in a Brazilian Pregnant Population. A.B.L. MONNERAT\*, U.V. MEDEIROS, S. KAHN, M. VASCONCELOS, M. VIANNA, V. MICELLI, and J. BORREGO (*Fluminense Federal University, and Federal University of Rio de Janeiro, Brazil*).

**0420** Tooth Loss in Post-menopausal Women: An Epidemiological Study. K.L. YODA\*, M.K. JEFFCOAT, J.M. ROSEMAN, C.Y. WANG, C.E. LEWIS, M.A. REDFORD, and M.S. REDDY (*Schools of Dentistry and Public Health, University of Alabama, Birmingham, and National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).

**0421** Comparison of Different Periodontal Variables between Non-insulin-dependent Diabetic Patients and Non-diabetic Individuals. H.-K. LU\*, P.-C. YANG, and K.-Y. WANG (*School of Dentistry, Taipei Medical University, Third Section of the Health Bureau of Shin-Chu County Government, and Dental Department, Jen-ai Municipal Hospital, Taiwan*).

**0422** In-dental-office Screening for Diabetes Mellitus Using Gingival Crevicular Blood. A. KUCZEK\*, T. BEIKLER, G.J. PETERSILKA, and T.F. FLEMMIG (*Clinic of Periodontology, Westfalian-Wilhelms University, Muenster, Germany*).

**0423** A Causal Model of Metabolic Control and Periodontal Status in Type II Diabetics. M. KAWAMURA\* and H. SASAHARA (*Hiroshima University School of Dentistry, Japan*).

**0424** Aggressive Periodontitis Associated with Palmoplantar Pustulosis. K. TAKAHASHI\*, H. TAKEDA, K. MOTOHIRA, K. SHIN, and T. MIYATA (*Department of Periodontology, Meikai University, Sakado City, Saitama, Japan*).

**0425** Association between Stress and Periodontal Disease. A. HEINRICH\*, C. SCHWAHN, O. BERNHARDT, D. GESCH, E. HENSEL, W. JANKE, and T. KOCHER (*University of Greifswald, and University of Würzburg, Germany*).

**0426** Relationship between Obesity and Alveolar Bone Loss in Male Adults. M. MURAKAMI\*, T. SAITO, Y. SHIMAZAKI, and T. KOGA (*Kyushu University, and Officer Candidate School, GSDF, Fukuoka, Japan*).

**0427** Risk Factors for Periodontal Disease Progression among Elderly People. H. OGAWA\*, A. YOSHIHARA, T. HIROTOMI, and H. MIYAZAKI (*Department of Preventive Dentistry, Niigata University, Japan*).

**0428** Smoking, Betel Chewing, and Gingivitis in Rural Sri Lankans. D.N. AMARASENA\*, A. EKANAYAKA, L. HERATH, and H. MIYAZAKI (*Niigata University, Japan; and University of Peradeniya, Sri Lanka*).

**0429** Suppression of Hemorrhagic Responsiveness in Smokers. J. BERGSTRÖM\* and L. BOSTRÖM (*Karolinska Institutet, Stockholm, Sweden*).

**Seq#: 56 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Periodontal Research - Virulence Factors of Periodontopathogens**

**0430** Localization of *Porphyromonas gingivalis* Fimbriae in Human Periodontal Pockets. L. LI\*, Y. NOIRI, S. KANAMORI, S. EBISU, and F. YOSHIMURA (*Graduate School of Dentistry, Osaka University, and School of Dentistry, Aichi-Gakuin University, Japan*).

**0431** *Porphyromonas gingivalis* Fimbriae Bind to Cytokeratin of Epithelial Cells. H.T. SOJAR\*, A. SHARMA, and R.J. GENCO (*Oral Biology Department, SUNY at Buffalo, NY, USA*).

**0432** *Prevotella intermedia* and *Prevotella nigrescens* in Periodontal Disease. C.W. HSIEH\* and C.-H. LAI (*University of Pennsylvania, Philadelphia, USA*).

**0433** Volatile Short-chain Fatty Acids and Aldehydes during Oral Inflammation. A.I. VOLOZHIN, Y.A. PETROVITCH, E.S. FILATOVA, and O.L. FOMINA\* (*Moscow State University of Medicine and Dentistry, Russia*).

**0434** Breath Odor and Micro-organisms in Human Tongue Coat. M. KISHI\*, Y. OHARA-NEMOTO, S. KIMURA, K. KISHI, F. AIZAWA, T. MORIYA, and M. YONEMITSU (*School of Dentistry, Iwate Medical University, Morioka, Japan*).

**0435** Usefulness of Monoclonal Antibodies for Detecting *B. forsythus* in Periodontal Lesions. H. IHARA\*, T. MIURA, T. KATO, K. ISHIHARA, T. NAKAGAWA, S. YAMADA, and K. OKUDA (*Tokyo Dental College, Chiba, Japan*).

**0436** Characterization of a Native Plasmid from *Prevotella intermedia*. K.-P. LEUNG\*, A.S. LEWIS, S.P. CON-CANNON, H. YOSHIMOTO, and H. FUKUSHIMA (*US Army Dental Research Detachment, Great Lakes, IL, USA; and Osaka Dental University, Japan*).

**0437** Cloning and Sequencing Analysis of the Sialidase Gene from *Bacteroides forsythus*. H. ISHIKURA\*, S. ARAKAWA, T. NAKAJIMA, N. TSUCHIDA, and I. ISHIKAWA (*Tokyo Medical and Dental University, Japan*).

**0438** Monoclonal Antibody against *Porphyromonas gingivalis* Hemagglutinin Inhibits Hemolytic Activity. Y. HOSOGI\*, M. HAYAKAWA, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**0439** Detection of Periodontal Pathogens from Granulation Tissue by PCR. M. ISHIZUKA\*, M. UMEDA, Y. TAKEUCHI, Y. HUANG, and I. ISHIKAWA (*Periodontology, Department of Hard Tissue Engineering, Graduate School, Tokyo Medical and Dental University, Japan*).

**Seq#: 57 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Periodontal Research - Antimicrobial and Anti-inflammatory Agents**

**0440** Use of PerioChip® Local Delivery in Patients Who Smoke. S. SUTDHIBHISAL, L. WOLFF\*, M. HARSCH, J.S. HODGES, P.A. LENTON, J. HINRICHS, and K. SELF (*School of Dentistry, University of Minnesota, and HealthPartners, Inc., Minneapolis, USA*).

**0441** Effectiveness of Metronidazole on Cyclosporine-induced Gingival Overgrowth in Heart Transplant Patients. L. MONTEBUGNOLI, D. SERVIDIO\*, R.A. MIATON, and C. PRATI (*University of Bologna, Italy*).

**0442** Comparison of Two Gels as Adjunctive Treatment of EOP. M. SIRIRAT\*, P. BOONCHAI PANICHWATANA, C. AMORNCHAT, S. YUDHASARAPRASIT, and P. ROJANAPAN (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand*).

**0443** Periodontal Treatment Associated with Doxycycline in Type I Diabetes Mellitus Patients. C.C. CURY, D.B. PALIOTO, A.M. DURO, Jr., and A.F.M. LIMA\* (*University of Campinas, and University of Itajai, Brazil*).

**0444** Attachment Loss and *Bacteroides forsythus* Infection in Adolescents. S.M. HAMLET\*, M.P. CULLINAN, R.P. ELLWOOD, H.V. WORTHINGTON, R.M. DAVIES, J.E. PALMER, and G.J. SEYMOUR (*University of Queensland, Australia; and University of Manchester, UK*).

**0445** Increased CF-cell Phagocytosis after a Two-step Treatment Procedure. P. BUDZISCH\*, A. PFITZNER, W. PFISTER, G. KLINGER, and B.W. SIGUSCH (*University of Jena, Germany*).

**0446** Inhibition of Alveolar Bone Loss by Nonpeptidic Hydroxamic Acid Matrix Metalloproteinase Inhibitors in Experimental Periodontal Disease. N.S. RAMAMURTHY\*, J. XU, M.S. WOLFF, J. BIRD, A. BAXTER, R. BHOGAL, R. WILLIS, B. WATSON, D. OWEN, and R.A. GREENWALD (*SUNY at Stony Brook, and Long Island Jewish Medical Center, New Hyde Park, NY, USA; and Celltech Chiroscience Ltd, Cambridge, UK*).

**0447** Comparison of Pre-surgical and Immediate Post-surgical Nimesulide on Post-operative Periodontal Pain. E. SALAZAR\*, M. PERRONE, and L. ESCALONA (*Faculty of Dentistry, Central University of Venezuela, Caracas*).

**0448** Association of Interleukin-1 Gene Polymorphisms with Adult Periodontitis in Japanese. H. SHIMPUKU\*, Y. TACHI, and K. OHURA (*Osaka Dental University, Hirakata, Japan*).

**Seq#: 58 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Neuroscience/TMJ - Motor Control, Dentofacial Morphology, and Biomechanics**

**0449** Cortical Activation Patterns during Tongue Movements: An fMRI Study. H. SHINAGAWA\*, T. ONO, Y. ISHIWATA, E. HONDA, M. TAIRA, A. IRIKI, and T. KURODA (*Tokyo Medical and Dental University, and Nihon University, Tokyo, Japan*).

**0450** Muscle Fatigue on Motor-evoked Potentials Using Transcranial Magnetic Stimulation. A. KAWANO\*, T. KATSUMA, and H. INOUE (*Department of Removable Prosthodontics and Occlusion, Osaka Dental University, Japan*).

**0451** Distribution of Jaw-movement-related Cortical Magnetic Fields in Humans. T. SUZUKI\*, Y. SHIBUKAWA, T. KUMAI, and Y. NAKAMURA (*Tokyo Dental College, Chiba, Matsumoto Dental University, Nagano, and Teikyo Heisei University, Chiba, Japan*).

**0452** Mandibular Advancement for Treatment of Obstructive Sleep Apnea. S. CATAPANO, M. SQUARZONI\*, L. BALLARIN, and A. POTENA (*University of Ferrara, Italy*).

**0453** The Mandibular Opening Pattern in Relation to Maxillofacial Skeletal Structure. J.-H. KIM\* and B.-G. KIM (*Department of Oral Medicine, School of Dentistry, Chonnam National University, and CNUDSRI, Korea*).

**0454** Biomechanical Analysis of Shortened Dental Arch in Finite-element Model. Y. WATANABE\*, Y. HATTORI, C. SATOH, S. SEKI, M. WATANABE, K. ABE, and T. YOKOBORI (*Kansei Fukushi Research Center, Tohoku Fukushi University, Graduate School of Dentistry, and Fracture Research Institute, Tohoku University, Sendai, Japan*).

**0455** Relationship between Temporomandibular Joint Disc Displacement and Dentofacial Morphology in Anterior Open Bite Patients. E.S. BYUN, Y.J. CHANG\*, and T.W. KIM (*Department of Orthodontics, College of Dentistry, Seoul National University, Korea*).

**0456** Occlusal Contact Area of Mandibular Molars during Lateral Excursions. H. HAYASAKI\*, A. OKAMOTO, Y. YAMASAKI, and M. NAKATA (*Faculty of Dental Science, Kyushu University, Fukuoka, Japan*).

**0457** Alteration of Vertical Dimension in the Experimentally Bite-raised Guinea Pig. T. YAGI\*, Y. MASUDA, and T. MORIMOTO (*NTT West Osaka Hospital, and Osaka University, Japan*).

**0458** Association between Maximal Mouth Opening and Width of Fingers. A. LADPLI\*, W. PIRIYAWARASAKUL, and V. TRICHAITYAPON (*Chulalongkorn University, Bangkok, Thailand*).

**Seq#: 59 Thursday, June 28, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Craniofacial Biology - Periodontium, Fibroblasts, Tooth Development**

**0459** Neutrophil Collagenase (MMP8) is Involved in Remodeling the Rat Periodontium. M. TSUBOTA\*, Y. SASANO, I. TAKAHASHI, M. KAGAYAMA, and H. SHIMAUCHI (*Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**0460** GDF-7 mRNA Expression in Periodontal Ligament during Experimental Tooth Movement. Y. MIYOSHI\*, K. TERAII, K. HIURA, M. YOKOZEKI, and K. MORIYAMA (*University of Tokushima, Japan*).

**0461** Effect of Inorganic Polyphosphate in a Combination of Growth Factors on Periodontal Ligament Cells. H.-T. OH, D.-J. LEE, H.-S. LEE, S.-Y. CHO, S.-S. JUE, J.-Y. LEE, and J.-W. SHIN\* (*Kyung Hee University, Seoul, Korea*).

**0462** The Biological Effects of Sodium Fluoride and Fluorosilicic Acid on Human Periodontal Tissue Cells. H.-S. LEE\*, S.-Y. CHO, S.-S. JUE, and J.-W. SHIN (*Kyung Hee University, Seoul, Korea*).

**0463** The Effects of IGF-treated Gingival and Periodontal Ligament Fibroblasts on Osteoblasts. M.J. KIM\* and W.S. YANG (*Department of Orthodontics, College of Dentistry, Seoul National University, Korea*).

**0464** Mitogenic Effects of Neurotrophins on the Periodontal Ligament Cell Line. Y. TSUBOI\*, T. NAKANISHI, T. TAKANO-YAMAMOTO, M. MIYAMOTO, T. YAMASHIRO, and M. TAKIGAWA (*Okayama University Dental School, Japan*).

**0465** Establishment of Immortalized Periodontal Ligament Cell Lines and Gene Expression. M. KUBOTA\*, M. CHIBA, H. KANZAKI, N. YANAI, M. OBINATA, S. UEDA, and H. MITANI (*University of Tohoku, Sendai, and YS New Technology, Tochigi, Japan*).

**0466** Mechanical Stress Induces c-fos mRNA Expression in Human PDL Fibroblasts. N. YAMAGUCHI\*, M. CHIBA, and H. MITANI (*Department of Orthodontics, School of Dentistry, Tohoku University, Sendai, Japan*).

**0467** Cell-Cell Adhesion in Human Fibroblasts Requires Calcium Signaling. K.S. KO, A. CHEN\*, P.D. ARORA, V. BHIDE, and C.A.G. McCULLOCH (*CIHR, University of Toronto, Ontario, Canada*).

**0468** Targeted Overexpression of Smad2 Affects Skin and Enamel Formation. Y. ITO\* and Y. CHAI (*Center for Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, USA*).

**0469** Stratum Intermedium is a *Sonic Hedgehog*-signaling Structure during Odontogenesis. C. WU, T. SHIMO, M. IWAMOTO, T. OHOMORI, K. KURISU, M. PACIFICI, and E. KOYAMA\* (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA; and School of Dental Medicine, Faculty of Dentistry, Osaka, Japan*).

**0470** p63 Expression in Mouse Enamel Knot. N. KAWANABE\*, N. NAKAMUTA, R. MURAKAMI, S. KOBAYASHI, M. MORIKAWA, and K. YAMAGUCHI (*Kyushu Dental College, Kitakyushu, Japan*).

**0471** Exclusion of Lef1 in Congenital Absence of the Third Molars in EL Mice. R. NOMURA\*, Y. ASADA, T. MAEDA, M. RAMAHI, K. LEE, and G.V. KULKARNI (*Nihon University, Japan; and University of Toronto, Canada*).

- 0472** Defective Cusp Formation in Mice Lacking the Laminin  $\alpha 5$  Chain. H. IDA-YONEMOCHI\*, S. FUKUMOTO, J.H. MINER, M.P. HOFFMAN, and Y. YAMADA (*Craniofacial Developmental Biology and Regeneration Branch, NIDCR, NIH, Bethesda, MD, USA; Faculty of Dentistry, Niigata University, Japan; and Washington University School of Medicine, St. Louis, MO, USA*).
- 0473** Variety of Mutation of *MSX1* in Human Tooth Agenesis. E. NAGATA\*, Y. SASAKI, T. HAMACHI, M. NAKATA, and M. INOUE (*Kagoshima University Dental School, and Graduate School of Dental Science, Kyushu University, Fukuoka, Japan*).
- 0474** WITHDRAWN

**Seq#: 60 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Symposium, Makuhari Messe: Room 201 A**

**Oral Medicine and Pathology and Microbiology/Immunology - Host-Microbial Interactions in Health and Disease**  
**[Supported by Unilever Dental Research and GlaxoSmithKline]**

**Chairpersons: P.M. Speight and R. Burne**

- 0475** 1:45 Host-Microbial Interactions in Health and Disease. P. SPEIGHT\*, B. HENDERSON, S. KRISANAPRAKORNKIT, T. NISHIHARA, and L.P. SAMARANAYAKE (*University College London, UK; University of Washington, Seattle, USA; University of Hong Kong; and Kyushu Dental College, Japan*).
- 1:50 Mechanisms of Cell-Microbial Interactions. B. HENDERSON (*Eastman Dental Institute, London, UK*).
- 2:15 Antimicrobial Peptides and Epithelial Defense. S. KRISANAPRAKORNKIT (*University of Washington, Seattle, US*).
- 2:40 Mechanisms of Cell-cycle Arrest and Apoptosis Induced by Bacterial Toxins. T. NISHIHARA (*Kyushu Dental College, Fukuoka, Japan*).
- 3:05 The Fungus-Host Interface. L. SAMARANAYAKE (*University of Hong Kong, China*).
- 3:30 Discussion

**Seq#: 61 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Symposium, Prince Hotel: Hall 1**

**Mineralized Tissue - Inherited Diseases of the Mineralized Tissues: Relating Phenotype to Genetic Lesion**  
**[Supported by Procter & Gamble]**

**Chairpersons: J. Kirkham and R. Shore**

- 0476** 1:45 Inherited Diseases of the Mineralized Tissues: Relating Phenotype to Genetic Lesion. J. KIRKHAM\* (*Leeds Dental Institute, University of Leeds, UK*).
- 1:50 The Phenotype and Genotype of Amelogenesis Imperfecta. J.T. WRIGHT (*University of North Carolina, Chapel Hill, US*).
- 2:15 Developmental Defects of the Dentinal Organic Matrix. J. WALTIMO (*University of Helsinki, Finland*).
- 2:40 Divergent Homeogenes *MSX* and *DLX*, Morphogenesis and Modeling of the Craniofacial Skeleton. A. BERDAL (*Laboratoire de Biologie-Odontologie, Paris, France*).
- 3:05 The Molecular Pathology of Cleidocranial Dysplasia. R. D'SOUZA (*University of Texas, Houston, US*).
- 3:30 Discussion

**Seq#: 62 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Makuhari Messe: Room 303**

**Behavioral Sciences/Health Services Research - Methods: Risk Assessment, Clinical Decision-making**

**Chairpersons: S. Gansky and M. Walter**

- 1:45 Poster Viewing
- 0477** 2:15 Meta-analysis of Periodontal Disease and Risk of Cardiovascular Disease. S.-J.K. JANKET\*, A. BAIRD, S.K. CHUANG, and J.A. JONES (*VAMC Bedford, Harvard Schools of Public Health and Dental Medicine, NINDS/NIH, and Boston University, USA*).
- 0478** 2:25 Dental Health Locus of Control Reliability in a Caries Trial. S.A. GANSKY\*, J.A. WEINTRAUB, K.A. ATCHISON, C.I. HOOVER, J.M. WHITE, and J.D.B. FEATHERSTONE (*University of California, San Francisco, and University of California, Los Angeles, USA*).
- 0479** 2:35 Validating Partial Site Measurements of Attachment Loss. V.W. SPOLSKY\*, M. MARCUS, and N. GUZMÁN-BECERRA (*School of Dentistry, University of California, Los Angeles, and UCLA/Clinical Research Center, USA*).
- 0480** 2:45 Comparison of the Impact of Treatment on Quality of Life among Patients with Dental Implants, Conventional Dentures, and Bridgework in Yorkshire, UK. S.Y.L. KWAN\*, P.H.R. DOLAN, C.J. WATSON, and M.E.J. CURZON (*Leeds Dental Institute, and University of Sheffield, UK*).
- 0481** 2:55 Multivariate Analysis of Risk Indicators for Tooth Loss. J. ROEDIGER, M.H. WALTER\*, and R. KOCH (*Dresden University of Technology, Germany*).
- 0482** 3:05 Multilevel Survival Analysis of Amalgam Restorations among Air Force Personnel. M.S. GILTHORPE\*, M.T. MAYHEW, and J.S. BULMAN (*Eastman Dental Institute, University College London, UK*).
- 0483** 3:15 Measuring Patient Utility of Alternative Treatment for Mandibular Fracture. K.A. ATCHISON\*, T. BELIN, E. BLACK, V. SHETTY, S. SCHWEITZER, and C. DER-MARTIROSIAN (*University of California, Los Angeles, USA*).
- 0484** 3:25 Risk and Service Provision among South Australian Schoolchildren. A. NARAYANAN\* and A.J. SPENCER (*Social and Preventive Dentistry, Adelaide University, Australia*).
- 3:35 Discussion

**Seq#: 63 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 3**

**Cariology Research - Anticaries Agents, Remineralization Agents, Caries Prevention**

**Chairpersons: X. Zhou and L. Petersson**

- 0485** 1:45 Aggregative Effect of Tea Polyphenol on Oral Bacteria. L. ZHAN\* and R.J. HODGSON (*West China University of Medical Sciences, Chengdu, PRC; and Unilever Dental Research, Bebington, UK*).
- 0486** 2:00 Molecular Mechanism of Sugar Substitutes and Carbamide in Preventive Dentistry. V.A. ZUBCOV, Y.A. PETROVICH, N.F. TRUSOVA, I.N. MAROKKO, D.D. SUMAROKOV, T.P. VAVILOVA, T.L. MALISHKINA, G.I. TKACHENKO, V.P. MASENKO, and J. SHIDIAC\* (*Moscow State University of Medicine and Dentistry, Russia*).
- 0487** 2:15 Trace Element on Remineralization Layer Formation of Enamel Caries Lesions. X. ZHOU\*, H. WU, and H. TAN (*College of Stomatology, West China University of Medical Sciences, Chengdu, Sichuan, PRC*).

**0488** 2:30 Effect of Cheese Composition on Enamel Remineralization *in situ*. K.J. TOUMBA\*, K. ABU-SHAQRA, M.S. DUGGAL, B.T. AMAECHI, and S. HIGHAM (*Leeds Dental Institute, and University of Liverpool, UK*).

**0489** 2:45 Enamel Remineralization by Chewing Gum Containing Casein Phosphopeptide-Amorphous Calcium Phosphate. E.C. REYNOLDS\*, P. SHEN, F. CAI, A. NOWICKI, and J. VINCENT (*Dental School, University of Melbourne, Australia; and Warner Lambert, USA*).

**0490** 3:00 Structural Studies of the  $\beta$ -casein Phosphopeptide Bound to Amorphous Calcium Phosphate. K.J. CROSS, N.L. HUQ\*, D. EAKINS, and E.C. REYNOLDS (*School of Dental Science, University of Melbourne, Victoria, Australia*).

**0491** 3:15 Ultrastructural Studies of the Casein Phosphopeptide-Amorphous Calcium Phosphate Nanoclusters. K.J. CROSS\*, N.L. HUQ, D. EAKINS, and E.C. REYNOLDS (*School of Dental Science, University of Melbourne, Victoria, Australia*).

**0492** 3:30 Effects of Apigenin and *tt*-farnesol on Caries Development in Rats. H. KOO\*, S.K. PEARSON, and W.H. BOWEN (*Center for Oral Biology, University of Rochester, NY, USA*).

**Seq#: 64 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 2**

#### **Dental Materials - Dentin Bonding: Light Curing and Durability**

**Chairpersons: T. Nikaido and A. Rumphorst**

**0493** 1:45 Initial Bond Strength of Adhesive Systems Using Four Curing Units. M. YAMAUTI\*, P. SENAWONGSE, M. OTSUKI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**0494** 2:00 Micro-tensile Strengths of Adhesives before and after Irradiation through Composite. T. IKEDA\*, A. TAKAHASHI, Y. SATO, C. KAWAMOTO, and H. SANO (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**0495** 2:15 Light-curing Performance of Two Dentin Adhesive Formulations. A. RUMPHORST\*, U. SALZ, and V. RHEINBERGER (*Ivoclar-Vivadent AG, Schaan, Liechtenstein*).

**0496** 2:30 Microtensile Bond Strength of Two Different Adhesive Systems to Dentin (an *in vivo* and *in vitro* Study). S. BELLI\*, N. ÜNLÜ, F. ÖZER, P.N.R. PEREIRA, F.R. TAY, and D.H. PASHLEY (*University of Selçuk, Konya, Turkey; and Medical College of Georgia, Augusta, USA*).

**0497** 2:45 Dentin Bonding Behavior after Long-term Water Storage. R. FRANKENBERGER\*, N. KRÄMER, and A. PETSCHT (*Policlinic for Operative Dentistry, University of Erlangen, Germany*).

**0498** 3:00 Dentin Bond Durability of Resin-Dentin Interface in Class I Cavity. T. NIKAIKO\*, K.H. KUNZELMANN, M. OGATA, N. HARADA, S. YAMAGUCHI, R. HICKEL, and J. TAGAMI (*Tokyo Medical and Dental University, Japan; and University of Munich, Germany*).

**0499** 3:15 Tensile Bond Test of Two Adhesive Dental Systems to Dentin. D. PRISCO\*, L. MANTO, R. DE SANTIS, L. AMBROSIO, and S. RENGO (*School of Dentistry, University of Naples, and Institute of Composite Materials Tech., National Research Council and Interdisciplinary Research Centre in Biomaterials CRIB, Naples, Italy*).

3:30 Discussion

**Seq#: 65 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Conv Hall B**

#### **Dental Materials - Adhesion: Microleakage, Marginal Adaptation**

**Chairpersons: I. Krejci and I. Andersson-Wenckert**

**0500** 1:45 Microleakage of Class II Restorations Using Condensable and Hybrid Composite. M. TALEGHANI\*, H. SHIMIZU, N. TAMURA, and T. KUNO (*Baylor College of Dentistry, Texas A&M University System HSC, Dallas, USA; and Fukuoka Dental College, Japan*).

**0501** 2:00 Microleakage of Composite Class II Restorations *in vitro*. S.D. HEINTZE\*, A. CAVALLERI, K. VOGEL, and J. SELE (*Ivoclar-Vivadent AG, Schaan, Liechtenstein; and General Practitioner, Sargans, Switzerland*).

**0502** 2:15 Marginal Leakage of Class 2 Composite/Flowable Restorations with Various Cure Techniques. T.J. HILTON\* and R. QUINN (*School of Dentistry, Oregon Health Sciences University, Portland, USA*).

**0503** 2:30 Effect of Ramped Curing Light on Sealing/Adaptation and Composite Hardness. T. YOSHIKAWA\*, A. UMINO, S. YAMAGUCHI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**0504** 2:45 Evaluation of Microleakage Using a New Semi-quantitative Method. R. DITTMANN, Ch. GÄRTNER, C. SPLIETH, and M. ROSIN\* (*Dental School, University of Greifswald, Germany*).

**0505** 3:00 Marginal Adaptation of Class IV Composites before and after Loading. I. KREJCI\* and M. STAVRIDAKIS (*Division of Cariology, Endodontology, and Pediatric Dentistry, University of Geneva, Switzerland*).

**0506** 3:15 Interfacial Adaptation of a Modified Open-sandwich Restoration. I. ANDERSSON-WENCKERT\*, J.W.V. van DIJKEN, and P. HÖRSTEDT (*Department of Odontology, Umeå University, Sweden*).

**0507** 3:30 Effect of Water Storage on Dentin Marginal Gap Formation. A.U.J. YAP, K.C. SHAH, and C.L. CHEW\* (*National University of Singapore*).

**Seq#: 66 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 10**

#### **Dental Materials - Bioceramics**

**Chairpersons: J. McCabe and J. Barralet**

**0508** 1:45 Effects of Investment Material and Ceramming on the Surface Roughness of Glass-ceramic Materials. A. JOHNSON\*, R. VAN NOORT, P.V. HATTON, and J.M. WALSH (*Department of Restorative Dentistry, University of Sheffield, UK*).

**0509** 2:00 *In vitro* and *in vivo* Reactions of Compositional Gradient Bioceramics. L.M. HIRAKATA\*, M. KON, K. ASAOKA, Y. MIYAMOTO, and M. TAKECHI (*School of Dentistry, University of Tokushima, Japan*).

**0510** 2:15 Some Aspects of Biocompatibility and Chemical Stability of a Calcium-Aluminate-Hydrate-based Dental Restorative Material. Y. LIU\*, J. LI, L. SAHLBERG, and J. EKSTRAND (*Karolinska Institutet, Huddinge, and KristallenKliniken, Uppsala, Sweden*).

**0511** 2:30 Macroporous Hydroxyapatite Cement Bone Grafts. J.E. BARRALET\* and T. GAUNT (*University of Birmingham, UK*).

**0512** 2:45 Apatite Cements Promote the Differentiation of Human Osteoblasts *in vitro*. K. ISHIKAWA\*, Y. MIYAMOTO, T. YUASA, K. SUZUKI, and M. NAGAYAMA (*Okayama University, and Tokushima University, Japan*).

**0513** 3:00 Polymer-filled Calcium Phosphate Cement: Mechanical Properties and Protein Release. F.W. WANG\*, C.A. KHATRI, J.F. HSII, S. HIRAYAMA, and S. TAKAGI (*NIST, Gaithersburg, MD, USA; Nihon University, Chiba, Japan; and ADAHF, Gaithersburg, MD, USA*).

**0514** 3:15 Fluoride Uptake and Re-release from GIOMERS, Compomers, and Composites. J.F. McCABE\* and T.E. CARRICK (*Dental School, University of Newcastle, UK*).

3:30 Discussion

**Seq#: 67 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 11**

#### Dental Materials - Curing Methods

**Chairpersons: R. Sakaguchi and S. Uno**

**0515** 1:45 LED and Halogen Polymerization-Composite Cure Depths and Power Outputs. R.W. MILLS\* and K.D. JANDT (*University of Bristol, UK*).

**0516** 2:00 Adaptation of Class V Composite Restorations Using Four Curing Units. M. OTSUKI\*, P. SENAWONGSE, and J. TAGAMI (*Cariology and Operative Dentistry, Department of Restorative Sciences, Tokyo Medical and Dental University, Japan*).

**0517** 2:15 Release of Leachable Components from Resin Composites after Plasma Arc vs. Standard or Soft-start Halogen Curing. N. HOFMANN\*, J. RENNER, B. HUGO, and B. KLAIBER (*Department of Operative Dentistry and Periodontology, University of Würzburg, Germany*).

**0518** 2:30 Efficacy of a Newly-developed Light Source for Slow-cure. S. UNO\*, T. TANAKA, T. ABO, and H. SANO (*Hokkaido University Graduate School, Sapporo, Japan*).

**0519** 2:45 Layering Hardness of Hybrid Composites after Being Cured with Various Units. P. SENAWONGSE\*, M. OTSUKI, and J. TAGAMI (*Cariology and Operative Dentistry, Department of Restorative Sciences, Tokyo Medical and Dental University, Japan*).

**0520** 3:00 Storage Modulus and Tan  $\delta$  Onset during Cure of an Oxirane/Polyol Composite. R.L. SAKAGUCHI\*, J.L. FERRACANE, and S.M. ROZZI (*Oregon Health Sciences University, Portland, and 3M Dental Products, St. Paul, MN, USA*).

**0521** 3:15 Effect of Composite Thickness and Curing Techniques on Polymerization Contraction Stress. B.S. LIM\*, J.L. FERRACANE, R.L. SAKAGUCHI, and J.R. CONDON (*College of Dentistry, Seoul National University, Korea; and School of Dentistry, Oregon Health Sciences University, Portland, USA*).

**0522** 3:30 Properties of Light-cured Composites Cured through Filter that Stimulates Enamel. H. ARIKAWA\*, T. KANIE, K. FUJII, G. TSUKADA, A. KADOKAWA, K. FUKUI, and H. TAKAHASHI (*Kagoshima University Dental School, and Shibaura Institute of Technology, Tokyo, Japan*).

**Seq#: 68 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Int'l Conf Room**

#### Dental Materials - Mechanical Properties of Alloys, Orthodontic

**Chairpersons: H. Moon and G. Schmalz**

**0523** 1:45 Differential Scanning Calorimetry Analyses of Nickel-Titanium Orthodontic Wires in Bending. Y.H. LEE\*, Y.K. LEE, B.S. LIM, and C.W. KIM (*College of Dentistry, Seoul National University, Korea*).

**0524** 2:00 Bending Property and Phase Transformation of Ti-Ni Alloy Castings. T. YONEYAMA\*, H. DOI, E. KOBAYASHI, and H. HAMANAKA (*Tokyo Medical and Dental University, Japan*).

**0525** 2:15 Cutting Efficiency and Shaping Ability of Five Endodontic Hand Instruments. Y.Q. ZHU\*, W.W. XIA, and X.Y. WANG (*School of Stomatology, SSMU, Shanghai, China*).

**0526** 2:30 Fatigue Fracture of RPD Occlusal Rest Using Two Cast Alloys. C.G. GAPIDO\*, H. KOBAYASHI, O. MIYAKAWA, S. NAKANO, S. OKAWA, and S. KOHNO (*Faculty of Dentistry, Niigata University, Niigata City, Japan*).

**0527** 2:45 Mechanical Properties of the Recycled Cobalt-Chromium Alloys. P. HARIRAKSAPITAK\* and P. WONGTHAI (*Prince of Songkla University, and Chulalongkorn University, Bangkok, Thailand*).

**0528** 3:00 Follow-up of Patients with Oral Symptoms Attributed to Dental Alloys. G. SCHMALZ\*, P. GARHAMMER, and K.-A. HILLER (*Department of Operative Dentistry and Periodontology, University of Regensburg, Germany*).

**0529** 3:15 Evaluation of Frictional Resistance between Esthetic Brackets and Coated Archwires. H.-B. MOON\*, H. DOAN, M. SAIAR, and A.A. CAPUTO (*Section of Orthodontics and Biomaterials, UCLA School of Dentistry, USA*).

**0530** 3:30 X-ray Diffraction Investigation of Ni-Cr Dental Alloys. Z. CAI and J.D. BUMGARDNER\* (*Baylor College of Dentistry, Texas A&M University System Health Science Center, Dallas, and Mississippi State University, USA*).

**Seq#: 69 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 201 B**

#### Dental Materials - Titanium Implant

**Chairpersons: N. Ruse and M. Liu**

**0531** 1:45 A Non-contaminating Melting Process of Biocompatible and High-melting-point Ti-Ta-Nb Ternary Alloys. H. FUKUI\*, W. YANG, A. MORITA, M. NIINOMI, and J. HASEGAWA (*Aichi-Gakuin University, Nagoya, Japan*).

**0532** 2:00 Bending Property of Ti-6Al-7Nb Alloy for Cast Retainers. L. SARINNAPHAKORN\*, T. YONEYAMA, H. DOI, E. KOBAYASHI, and H. HAMANAKA (*School of Dentistry, Indiana University, Indianapolis, USA; and Tokyo Medical and Dental University, Japan*).

**0533** 2:15 Fatigue Crack Initiation and Propagation in Cast and Soldered Titanium Specimens. N.D. RUSE\*, I. WATANABE, and T. OKABE (*Biomaterials, UBC, Vancouver, Canada; Nagasaki University, Japan; and Baylor College of Dentistry, Dallas, Texas, USA*).

**0534** 2:30 A Comparison of Bond Strengths of Porcelain Fixed to Treated Titanium Substrates. M.J.D. REYES\*, Y. OSHIDA, C.J. ANDRES, T. BARCO, D. BROWN, and S. HOVIJITRA (*University of the East, Manila, Philippines; and Indiana University, Indianapolis, USA*).

**0535** 2:45 EQCM Study of Glycine and Cysteine Adsorption by Gold and Titanium. J.A. LORI\* and T. HANAWA (*National Research Institute for Metals, Tsukuba, Japan*).

**0536** 3:00 Impedance Spectroscopy Study of Oxides on Single-crystal Titanium. F.K. MANTE\*, E. LA FLEUR, M. MANTE, and G.R. BARAN (*School of Medicine, University of Pennsylvania, Rohm and Haas Company, and Temple University, Philadelphia, PA, USA*).

**0537** 3:15 Novel Titanium-sintered Compacts with Biological Function. K. ASAOA\*, M. KON, and D.-U. PARK (*University of Tokushima, Japan*).

**0538** 3:30 Protein Release from Biomimetic Calcium Phosphate Coating on Titanium Implant. M.Y. LIU\*, P. LAYROLLE, J.D. DE BRUIJN, C. VAN BLITTERSWIJK, and K. DE GROOT (*University of Leiden, The Netherlands*).

**Seq#: 70 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 301 A**

**Educational Research - Educational Research-General**

**Chairpersons: D. Booth and D. Walmsley**

**0539** 1:45 Continuing Professional Development of UK Dentists: Participation and Impact. A.D. BULLOCK\*, V.R. FIRMSTONE, and J.W. FRAME (*University of Birmingham, UK*).

**0540** 2:00 General Professional Training in Dentistry: A UK Study. V.R. FIRMSTONE\*, A.D. BULLOCK, and J.W. FRAME (*University of Birmingham, UK*).

**0541** 2:15 Evaluation: Student Perceptions of a Dental Course. C.R. MILLS, D.R. BOOTH\*, and S.E. CARR (*University of Western Australia, Perth*).

**0542** 2:30 The Use of the Internet within a Dental School. L. SOMERFIELD, D.A. WHITE, and A.D. WALMSLEY\* (*School of Dentistry, University of Birmingham, UK*).

**0543** 2:45 Occupational Exposures Occurring in Students in a UK Dental School. D.A. STEWARDSON\*, C.J. PALENIK, E.S. MCHUGH, and F.J.T. BURKE (*University of Birmingham, UK; University of Indiana, Indianapolis, USA; and University of Glasgow, UK*).

**0544** 3:00 Dental and Medical Students and the Social Context of Patient Care. R.L. HARRISON\*, C. LOOCK, B. MCGILLIVRAY, and G. PACHEV (*Faculty of Dentistry and Faculty of Medicine, University of British Columbia, Vancouver, Canada*).

3:15 Discussion

**Seq#: 71 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 4**

**Geriatric Oral Research - Oral Health Services & Prevention for Frail Elders**

**Chairpersons: P. Mojon and Y. Maki**

**0545** 1:45 Assessing Change in Oral-health-related Quality of Life Using OHIP. M.C.M. WONG\*, E.C.M. LO, and A.S. McMILLAN (*Faculty of Dentistry, University of Hong Kong*).

**0546** 2:00 Oral Health Status and Eating Functional Disorder in Japanese Elderly with Dementia. Y. MAKI\*, M. KOSEKI, N. SUGIHARA, Y. TAKAESU, Y. MUKAI, Y. OHTSUKA, K. WATANABE, and M. KITAHARA (*Tokyo Dental College, Showa University, and Kanagawa Prefecture, Chiba, Japan*).

**0547** 2:15 Possibilities for Optimization of the Oral Health of Nursing Home Residents Who Require Constant Care. A. LEHMANN\*, B.K. REITEMEIER, and G. MÜLLER (*Technische Universität, Dresden, Germany*).

**0548** 2:30 Outreach Dental Service for Institutionalized Elderly in Hong Kong. E.C.M. LO\*, J.E. DYSON, and C.Y.Y.J. YEUNG (*Faculty of Dentistry, University of Hong Kong*).

**0549** 2:45 The Effectiveness of Caries Prevention in Institutions for the Elderly. P. MOJON\*, E. BUDTZ-JØRGENSEN, and A. RENTSCH (*McGill University, Canada; and University of Geneva, Switzerland*).

**0550** 3:00 Bacteriological Evaluation of a New Oral Brush for Dependent Elderly. M. FUKUSHIMA\*, T. FUKUDA, K. NAKAJO, M. IWAKU, N. TAKEI, and K. SHIBUYA (*Niigata University, and LION Foundation for Dental Health, Japan*).

**0551** 3:15 Efficacy of a New Oral Mucosa Brush for Dependent Elderly. N. TAKEI\*, K. SHIBUYA, M. FUKUSHIMA, T. FUKUDA, S. TAKENAKA, and M. IWAKU (*LION Foundation for Dental Health, and Niigata University, Japan*).

**0552** 3:30 Evaluation of a Nystatin Mouthrinse for Antifungal Oral Palliative Care in the Elderly. G. BUTTICAZ, G. ZULIAN, and E. BUDTZ-JØRGENSEN\* (*University of Geneva, and Centre de Soins Continus (CESCO), Geneva, Switzerland*).

**Seq#: 72 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 9**

**Implantology Research - Calcium Phosphates**

**Chairpersons: R. LeGeros and W. Laceyfield**

**0553** 1:45 Electromechanical Deposition of Octacalcium Phosphate on Different Types of Titanium Surfaces. S. LIN, J.P. LeGEROS\*, R.Z. LeGEROS, F. DIMAANO, and P. SEREKIAN (*New York University College of Dentistry and Stryker-Howmedica-Osteonics Co., NJ*).

**0554** 2:00 Magnesium-substituted Tricalcium Phosphate,  $\beta$ -TCP: Preparation and Properties. R.Z. LeGEROS\*, S. LIN, R. ROHANIZADEH, D. MIJARES, and J.P. LeGEROS (*New York University College of Dentistry, USA*).

**0555** 2:15 Abrasion of Ceramic and Metallic Implant Coatings Inserted into Bone. W. LACEFIELD\*, K. COMPTON, and C. MACHADO (*University of Alabama, Birmingham, USA; and University of Alberta, Edmonton, Canada*).

**0556** 2:30 Integrin Expression of U2OS on CaP-coated and Titanium Substrates. P.J. TER BRUGGE\* and J.A. JANSEN (*Department of Biomaterials, College of Dental Science, University of Nijmegen, The Netherlands*).

**0557** 2:45 Bone Response to Surface-modified Titanium Implants with Thin Calcium Phosphate and Bisphosphonate. M. YOSHINARI\*, Y. ODA, T. INOUE, K. MATSUZAKA, and M. SHIMONO (*Tokyo Dental College, Chiba, Japan*).

**0558** 3:00 Pull-out Strengths of RF Sputter-coated and Plasma-sprayed HA Implants. J.L. ONG\*, K. BESSHO, D.L. CARNES, and R. CAVIN (*University of Texas Health Science Center, San Antonio, USA*).

3:15 Discussion

**Seq#: 73 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 301 B**

**Neuroscience/TMJ - Reflexes, Myalgia, Arthralgia, and Chemical Mediators**

**Chairpersons: P. Svensson and M. Ernberg**

**0559** 1:45 Effect of Local Anesthetic in TMJ on Jaw-stretch Reflexes in TMD Patients. K. WANG\*, T. JENSEN, and P. SVENSSON (*Center for Sensory-Motor Interaction, Aalborg University, and Department of Maxillofacial Surgery, Aalborg Hospital, Denmark*).

**0560** 2:00 Effect of Gender on Acute Masseter Pain and Jaw-reflex Sensitivity in Humans. P. SVENSSON\*, K. WANG, B.E. CAIRNS, J.W. HU, and B.J. SESSLE (*Aalborg University, Denmark; Harvard Medical School, MA, USA; and University of Toronto, Canada*).

**0561** 2:15 Effect of Glucocorticoid on Prostaglandin E<sub>2</sub> and Leukotriene B<sub>4</sub> Levels in Myalgia. B. HEDENBERG-MAGNUSON\*, P. ALSTERGREN, M. ERNBERG, and S. KOPP (*Institute of Odontology, Karolinska Institutet, Huddinge, Sweden*).

**0562** 2:30 Effect of Granisetron on Muscle Pain and Hyperalgesia in Fibromyalgia. M. ERNBERG\*, T. LUNDEBERG, and S. KOPP (*Karolinska Institutet, Huddinge and Stockholm, Sweden*).

**0563** 2:45 Masticatory Muscle Pain after Experimental Chewing. H. KARIBE\*, P. RUDD, C. McNEILL, G. GODDARD, and R.W. GEAR (*University of California, San Francisco, USA*).

**0564** 3:00 Interleukin-1 Antagonism in Arthritic Temporomandibular Joint Synovial Fluid. P. ALSTERGREN\*, C. BENAVENTE, and S. KOPP (*Institute of Odontology, Karolinska Institutet, Stockholm, Sweden*).

**0565** 3:15 Capsaicin Receptor VR1 and ATP Purinoceptor P2X<sub>3</sub> in Human Tooth Pulp. T. RENTON\*, Y. YIANGOU, P.A. BECKER, A.P. FORD, and P. ANAND (*Peripheral Neuropathy Unit, Imperial College School of Medicine, Hammersmith Hospital, and Department of Oral and Maxillofacial Surgery, King's College London, UK; and Neurobiology Unit, Palo Alto, CA, USA*).

**0566** 3:30 Neurotensin in Experimentally Induced Masseter Myositis. J. CARLSON\*, B. APPELGREN, A. APPELGREN, A. FINN, M. JANSSON, and T. LUNDEBERG (*Department of Physiology and Pharmacology, and Department of Surgical Sciences, Karolinska Institutet, Stockholm, Sweden*).

**Seq#: 74 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 302**

### **Oral Health Research - Mouthrinses, Dentifrices, Malodor, Chewing Gum**

**Chairpersons: B. Schemehorn and C. Drisko**

**0567** 1:45 A Clinical Trial of the Anti-caries Efficacy of Casein Phosphopeptides. W.M. THOMSON\* and K.D. HAY (*University of Otago, and Auckland Hospital, New Zealand*).

**0568** 2:00 Inhibition of Plaque Adhesion by Dextranase-containing Mouthrinse. M. MATSUMOTO\*, T. FUKAI, T. YASUI, K. MUKASA, T. YOKOO, and K. KANEKO (*Meikai University, Sakado, Saitama, and Lion Corp., Sumida-ku, Tokyo, Japan*).

**0569** 2:15 Anti-bacterial and Anti-plaque Efficacy of a Polihexanide Mouthrinse. A. WELK\*, M. ROSIN, A. MAJIC-TODT, C. SCHWAHN, F.A. PITTEN, T. KOCHER, and A. KRAMER (*Department of Operative Dentistry, and Institute of Hygiene and Environmental Medicine, University of Greifswald, Germany*).

**0570** 2:30 Subgingival Chlorhexidine Gluconate Deposition with a Fluid-dispensing Sonic Toothbrush. C.H. DRISKO\*, M. HILL, J.A. SINGLETON, K.M. PICKMAN, K.T. UNDERWOOD, and M.R. JOHNSON (*University of Louisville, KY, and Philips Oral Healthcare, Inc., Snoqualmie, WA, USA*).

**0571** 2:45 The Additional Benefit of Chlorhexidine Rinsing in Treating Oral Malodor. P.A. LENTON\*, G.J. MAJERUS, J.S. HODGES, M.D. LEVITT, and B.L. PIHLSTROM (*Minneapolis VA Hospital, and University of Minnesota School of Dentistry, USA*).

**0572** 3:00 Antimicrobial Property and Staining Potential of a Cetylpyridinium Chloride Toothpaste. A. NAKAO\*, Y. TABUCHI, T. SAITO, and Y. NOMURA (*Sunstar Inc., and Sunstar Foundation for Oral Health Promotion, Osaka, Japan*).

**0573** 3:15 Zinc Uptake from Dentifrices Using a Modified FDA Procedure #40. B.R. SCHEMEHORN\*, G.D. WOOD, D. YU, T. BILBAULT, and L. KUMAR (*Indiana University, Indianapolis, and Pfizer Inc., Morris Plains, NJ, USA*).

**0574** 3:30 Clinical Investigation of Chewing Gum Containing Zinc on Plaque Formation. C.J. KLEBER\*, K.R. DAVIDSON, J. MILLEMAN, and M.S. PUTT (*University Park Research Center, Fort Wayne, IN, USA*).

**Seq#: 75 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 304**

### **Periodontal Research - Antimicrobial and Anti-inflammatory Agents**

**Chairpersons: M. Sanz and P. Heasman**

**0575** 1:45 Non-surgical Treatment of Periodontal Disease: Results after 5 Years. W.J. LOESCHE\*, J.R. GIORDANO, S. SOEHREN, and N. KACIROTI (*University of Michigan, Ann Arbor, USA*).

**0576** 2:00 PerioChip<sup>®</sup> for Patients on Periodontal Supportive Therapy. P.A. HEASMAN\*, F. STACEY, L. HEASMAN, and G.I. MCCracken (*University of Newcastle, UK*).

**0577** 2:15 Non-surgical Periodontal Therapy with Adjunctive Topical Doxycycline. 6 Months' Results. P. EICKHOLZ\*, T.-S. KIM, P. RATKA-KRÜGER, B. SCHACHER, T. BÜRKLIN, A. KÜBLER, R. HOLLE, M.T. SCHAECKEN, and H.H. RENGGLI (*University of Heidelberg, University of Frankfurt, University of Cologne, and Medis Institute, Neuherberg, Germany; and University of Nijmegen, The Netherlands*).

**0578** 2:30 Differences in Antimicrobial Activity of Four Chlorhexidine Mouthwash Formulations. D. HERRERA\*, S. ROLDÁN, I. SANTACRUZ, A. CONNOR, and M. SANZ (*University Complutense of Madrid, Spain*).

**0579** 2:45 The Effect of a Specific Halitosis Therapeutic Approach on the Oral Microbial Environment. S. ROLDÁN\*, D. HERRERA, I. GONZÁLEZ, and M. SANZ (*University Complutense of Madrid, Spain*).

**0580** 3:00 Antimicrobial Efficacy of an Antiseptic Mouthrinse in the Treatment of Oral Halitosis. M. SANZ\*, S. ROLDÁN, E.G. WINKEL, A.J. VAN WINKELHOFF, D. HERRERA, and R. SIMÓN (*University Complutense of Madrid, Spain; and ACTA, The Netherlands*).

**0581** 3:15 Effect of Vitamin-C-containing Chewing Gum on Calculus Formation. P. LINGSTRÖM\*, S. FURE, and D. BIRKHED (*Department of Cariology, Göteborg University, Sweden*).

**0582** 3:30 The Distribution of <sup>14</sup>C-triclosan in Human Gingival Fibroblasts. M. MUSTAFA\*, B. WONDIMU, H. KJELL, and T. MODÉER (*Institute of Odontology, Karolinska Institutet, Huddinge, Sweden*).

**Seq#: 76 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 5**

### **Prosthodontics Research - Color Science, Shade Selection**

**Chairpersons: D. Nathanson and S. Paul**

**0583** 1:45 Determination of Color Coordinates of a New Shade Tab Distribution for Japanese Population. M. MATSUKAWA\*, K. KINOSHITA, A. HASEGAWA, and M. ANALOUI (*GC Dental Products, Kasugai, Japan; and Indiana University, Indianapolis, USA*).

**0584** 2:00 Tooth Color Statistics of a North American Population. S. NAGAI\*, K. SAKASHITA, H. YAMAMOTO, K. ISHIBASHI, and D. NATHANSON (*School of Dental Medicine, Boston University, USA; and School of Dentistry, Iwate Medical University, Japan*).

**0585** 2:15 Matching Effectiveness of Dental Shade Guides. H. YAMAMOTO\*, S. NAGAI, K. ISHIBASHI, and D. NATHANSON (*School of Dental Medicine, Boston University, USA; and School of Dentistry, Iwate Medical University, Japan*).

**0586** 2:30 Comparison of a New Spectrophotometric Shade Matching System with Conventional Visual Shade Matching. S. PAUL\*, N. PIETROBON, A. PETER, and P. SCHÄRER (*School of Dentistry, University of Zürich, Switzerland*).

**0587** 2:45 Color Space Comparison: Dental Shade Guides vs. Natural Teeth. D. NATHANSON\*, S. NAGAI, H. YAMAMOTO, C. ODAIRA, and K. ISHIBASHI (*School of Dental Medicine, Boston University, USA; and School of Dentistry, Iwate Medical University, Japan*).

**0588** 3:00 Light Transmission through All-ceramic Framework Materials and Bovine Dentin. D. EDELHOFF\* and J.A. SORENSEN (*Department of Prosthodontics, University of Aachen, Germany; and Oregon Health Sciences University, Portland, USA*).

**0589** 3:15 Evaluation of the Influence of Five Different Restorative Materials on the Color of Dense-sintered Alumina. S.O. KOUTAYAS\*, A. KAKABOURA, and J.R. STRUB (*Private Practice, Corfu, and Department of Restorative Dentistry, University of Athens, Greece; and Department of Prosthodontics, University of Freiburg, Germany*).

3:30 Discussion

**Seq#: 77 Thursday, June 28, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 8**

#### Salivary Research - Salivary Proteins/Signal Transduction

**Chairpersons: T. Kato and M. Mednieks**

**0590** 1:45 Phosphorylation/Dephosphorylation of Gi Regulates Desensitization/Supersensitivity in Response to  $\beta$ 2-adrenergic Agonist. H. ISHIDA\* and Y. ISHIKAWA (*School of Dentistry, Tokushima University, Japan*).

**0591** 2:00 Distribution of Secretory Proteins and the Response to Mechanical Stimulation. M.I. MEDNIEKS\*, T.R. CROSBY, J.C. BURKE, C.A. EVANS, and A.R. HAND (*Departments of Oral Biology and Orthodontics, University of Illinois, Chicago, and Department of Pediatric Dentistry, University of Connecticut, Farmington, USA*).

**0592** 2:15 Functional Characterization of a Sodium Bicarbonate Cotransporter in Human Parotid Glands. K. PARK\*, P.T. HURLEY, E. ROUSSA, G.J. COOPER, F. THEVENOD, M.C. STEWARD, and R.M. CASE (*Seoul National University, Korea; University of Manchester, UK; and Universität des Saarlandes, Germany*).

**0593** 2:30 Analysis of Antigenic Characteristics of Cystatins Using Murine Monoclonal Antibodies. T. KATO\*, T. MIURA, K. MINAGUCHI, E. SAITOH, and K. OKUDA (*Tokyo Dental College, Chiba, and Nippon Dental University School of Dentistry at Niigata, Japan*).

**0594** 2:45 Expression and Localization of Syntaxin 1A (HPC-1) in Salivary Glands. H. SUGIYA\*, S. HASHIMOTO, J. FUJITA-YOSHIGAKI, T. FUJIWARA, K. AKAGAWA, and S. FURUYAMA (*Nihon University School of Dentistry at Matsudo, Tokyo Dental College, Chiba, and Kyorin University School of Medicine, Tokyo, Japan*).

**0595** 3:00 Bactericidal and Fungicidal Activity of Salivary Mucin (MUC7) Peptide Fragments. C.J. SMITH\* and L.A. BOBEK (*SUNY at Buffalo, NY, USA*).

**0596** 3:15 Gene Transfer Mediated by DNA and Retroviral Vectors to Salivary Glands. E. SHAI, A. PANET, H. FALK, and A. PALMON\* (*Hebrew University, Jerusalem, Israel*).

**0597** 3:30 Toll-like Receptor Expression in Mouse Salivary Glands. T. KOGA, J. MEGA, K. FUJIHASHI, S. KIMURA, J.R. MCGHEE, and K. FUJIHASHI\* (*University of Alabama at Birmingham, USA; Nihon University School of Dentistry at Matsudo, Chiba, and School of Dentistry, Iwate Medical University, Morioka, Japan*).

**Seq#: 78 Thursday, June 28, 1:30 pm - 5:15 pm**  
**GC-sponsored Symposium, Makuhari Messe: Conv Hall A**

#### GC International - Minimum Intervention and Prevention [Supported by the IADR and GC International]

**Chairperson: W.R. Hume**

**0598** 1:30 Opening Comments.

1:35 Evolution of Caries Management. W.R. HUME (*University of California, Los Angeles, US*).

2:20 Identification of Caries Risk. E. REICH (*University of Saarland, Hamburg, Germany*).

3:05 Clinical Cariology. T. KUMAGAI (*Sakata-shi, Japan*).

3:50 Minimal Invasive Caries Therapy. M. NOACK (*University of Cologne, Germany*).

4:35 Discussion

**Seq#: 79 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Pulp Biology - Blood Flow, Cytokines

**0599** Fluid Flow through Cat Dentin Recorded with the Replica Technique. S. WANACHANTARARAK\*, V. KERD-VONGBUNDIT, N. VONGSAVAN, and B. MATTHEWS (*Chiangmai University, and Mahidol University, Thailand; and Department of Physiology, University of Bristol, UK*).

**0600** Pulpal Bloodflow after Local Infiltration Technique of Lower Mandibular Teeth. S. SOO-AMPON\*, S. LERTTHIRAPHAN, M. SOO-AMPON, and N. VONGSAVAN (*Faculty of Dentistry, Mahidol University, Thailand*).

**0601** Dependence of Pulpal Blood Flow Responses on Baseline Blood Flow. T. SASANO\*, N. SHOJI, S. KURIWADA-SATOH, and M. IIKUBO (*Department of Oral Diagnosis and Radiology, School of Dentistry, Tohoku University, Sendai, Japan*).

**0602** Somatosensory Afferents Mediating the Bilateral Reflex Vasodilatation in Cat Palate Induced by Noxious Tooth-pulp Stimulation. N. SHOJI\*, T. SASANO, S. SATO, M. IIKUBO, M. TANIGUCHI, and M. MARUMO (*Department of Oral Diagnosis and Radiology, School of Dentistry, Tohoku University, Sendai, Japan*).

**0603** Effect of Replanting Experimentally Avulsed Teeth on Pulpal Bloodflow Signals. V. TRAKULRUNGSI\*, J. KIATIPRAJAK, P. BANDITSING, S. SOO-AMPON, and N. VONGSAVAN (*Faculty of Dentistry, Mahidol University, Thailand*).

**0604** Vascular Endothelial Growth Factor (VEGF) Expression in Human Healthy and Inflamed Dental Pulp. L. Di LABIO\*, L. ARTESE, C. RUBINI, M. FIORONI, A. SCARANO, G. ORSINI, G. PETRONE, and G. IEZZI (*Dental School, University of Chieti, Italy*).

**0605** Dental Pulp Cell BMP and TNF- $\alpha$  Stimulation. T. SATOH\*, T. YAEGASHI, K. UYENO, S. HATAKEYAMA, and M. SATOH (*Iwate Medical University, Morioka, Japan*).

**0606** Effect of IL-1 $\beta$  on ICAM-1 Expression in Human Pulp Cells. N. SUGIMURA\*, K. NAKATA, K. YAMASHITA, H. NAKAMURA, and T. HAYAKAWA (*Departments of Endodontics and Biochemistry, School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0607** Enhancement of Neuropilin-1 Expression by TNF- $\alpha$  in Human Pulp Cells. M. SUWA\*, K. MATSUSHITA, T. OYAMA, S. TATSUYAMA, S. NAGAOKA, and M. TORIL (*Department of Operative Dentistry and Endodontology, Kagoshima University Dental School, Japan*).

**0608** Combined Effect of Fluoride, bFGF, and PDGF on Fibronectin Synthesis. K. BESPINYOWONG\* and P. PAVASANT (*Chulalongkorn University, Bangkok, Thailand*).

**0609** Effect of T-cell Deficiency on Rat Pulpal and Periapical Inflammation. M. KATO, M. YAMASAKI, Y. FUJIMAKI, A. IWAMA, I. IMAIZUMI, Y. MAEKAWA, and H. NAKAMURA\* (*Department of Endodontics, School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**Seq#: 80 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Prosthodontics Research - Occlusion and Articulation**

**0610** Involuntary Teeth Clenching and Head Posture during Physical Exercise. Y. YOKOYAMA\*, T. ISHIJIMA, T. HIRAI, Y. KIBANA, and H. KOSHINO (*School of Dentistry, Health Sciences University of Hokkaido, Japan*).

**0611** Development of a New Sensor System for Minute Mandibular Movements. K. KUREMOTO\*, T. MAEDA, S. SHIMAMURA, and H. INOUE (*Department of Removable Prosthodontics and Occlusion, Osaka Dental University, Japan*).

**0612** Does S.D.A. Well Support the Mandibular Position? T. KOZAWA\*, Y. IGARASHI, A. KUROIWA, and S. YAMASHITA (*Matsumoto Dental University, Nagano, Japan*).

**0613** Evaluation of Occlusal Height of Cast Crown. B. AMARSAIKHAN\*, T. MASUDA, D. OKADA, Y. SATO, K. KASAHARA, A. MAYANAGI, and H. MIURA (*Graduate School, Tokyo Medical and Dental University, Japan*).

**0614** *In vitro* Wear Assessment of Titanium Alloy Teeth. C. OHKUBO\*, I. SHIMURA, T. AOKI, S. HANATANI, T. HOSOI, Y. ODA, M. HATTORI, and T. OKABE (*Tsurumi University, Yokohama, and Tokyo Dental College, Chiba, Japan; and Baylor College of Dentistry, Texas A&M University HSC, Dallas, USA*).

**0615** Disk and Condyle Displacement with Soft Occlusal Appliance. A.S.L. GHANEM\*, S. MURAKAMI, Y. MAEDA, and M. SOGO (*Osaka University, Japan*).

**0616** Wavelet Analysis of Adaptation Changes in Articulation with Mouthguards. K. NOZAKI\*, Y. MAEDA, H. TAMAGAWA, T. TACHIMURA, Y. YONEHATA, and J. YAMAEIDA (*Faculty of Dentistry, Osaka University, Japan*).

**0617** A Study of Jaw Movement during Bruxism. K. OKAMURA\*, N. OHATA, and M. IKEDA (*Hokkaido University, and Dental Clinic Ikeda, Sapporo, Japan*).

**0618** Observation on Chewing Efficiency of Fixed Prosthodontics. Y.-Y. SHIAU, C.-W. KAO\*, and C.-M. WANG (*Graduate Institution of Clinical Dentistry, College of Medicine, National Taiwan University, Taipei*).

**0619** Three-dimensional Analysis of Tooth Movement during Occlusal Force Loading. T. SATSUMA\*, E. BANDO, S. SHIGEMOTO, M. NAKANO, K. NISHIGAWA, and H. TAKEUCHI (*School of Dentistry, University of Tokushima, Japan*).

**0620** The Reproducibility of Interocclusal Record Materials for Mounting Casts. A. TOKUDA\*, T. SWE, Y. ARAI, D. OKADA, H. ISHIHARA, and H. MIURA (*Tokyo Medical and Dental University, Japan*).

**0621** Bite Registration Materials Change Jaw Position during Intercuspation. T. MAEDA\*, K. KUREMOTO, S. SHIMAMURA, and H. INOUE (*Osaka Dental University, Japan*).

**0622** Finite Element Analysis of Occlusal Stresses on RPD. H. TAKIMOTO\*, T. OHYAMA, Y. SATOH, E. NAGAI, I. AKIYAMA, and S. SUZUKI (*Nihon University, Tokyo, Japan; and University of Alabama, USA*).

**0623** Tooth Contacts and EMG Activities at the Mandibular Retruded Position. S. YAMASHITA\*, M. AI, Y. IGARASHI, and T. KIRIHARA (*Matsumoto Dental University, Nagano, Japan*).

**Seq#: 81 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Effect of Tooth Region on Dentin Bonding**

**0624** Bonding to Human Dentin at Different Locations. S. POOLTHONG, Y. SHIMADA, V. PATANAPIRADEJ\*, W. PATANAPIRADEJ, and J. TAGAMI (*Chulalongkorn University, Bangkok, Thailand; and Tokyo Medical and Dental University, Japan*).

**0625** Microtensile Bond Strengths of Bonding Agents to Pulpal Floor Dentin. K. KUSAMANMITH\*, S. TIMPAWAT, and C. HARNIRATTISAI (*Department of Operative Dentistry, Faculty of Dentistry, Mahidol University, Thailand*).

**0626** Bond Strength of Two Directly and Indirectly Placed Composite Resin Materials. A. ŞENGÜN, N. ÜNLÜ, B. ÖZTÜRK\*, and F. ÖZER (*University of Selçuk, Konya, Turkey*).

**0627** Shear Bond Strength of Prime&Bond NT on Superficial and Deep Dentin. F.S. AGUILERA\*, J. PERDIGÃO, G. GOMES, R. OSORIO, and M. TOLEDANO (*University of Granada, Spain; and University of Minnesota, Minneapolis, USA*).

**0628** Ultimate Tensile Strength of Tooth Structures. M. GIANNINI\*, C.J. SOARES, and R.M. CARVALHO (*FOP-UNICAMP, FO-UFRU, and FOB-USP, Brazil*).

**0629** Analysis of Bond Strengths Using Weibull Statistics. M.F. BURROW, C.D.L. THOMAS\*, M.V. SWAIN, S. PHRUKANON, M. TARNUMIHARJA, L. HOGAN, and M.J. TYAS (*School of Dental Science, University of Melbourne, Australia*).

**0630** Shear Bond Strength of Resin-based Core Materials to Adhesives with Activators. C.A. MUNOZ\*, N. JESSOP, and J.R. DUNN (*Loma Linda University, CA, USA*).

**0631** Dentin Cavity Adaptation and Shear Bond Strength to Sclerotic Dentin. M. KUSUNOKI\*, Y. TAKAHASHI, K. ITOH, H. HISAMITSU, and S. WAKUMOTO (*School of Dentistry, Showa University, Tokyo, Japan*).

**Seq#: 82 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Composite Resins, Composites/Other Restorative Materials, and Amalgam**

**0632** Cavity Depth and Post-operative Sensitivity in Composite Resin Restorations. M. UNEMORI\*, Y. MATSUYA, A. AKASHI, Y. GOTO, and A. AKAMINE (*Kyushu University, Fukuoka, Japan*).

**0633** Influence of Margin Preparation on Wear of Indirect Resin Composites. E. NAGAI\*, S. SUZUKI, Y. SATOH, A. OHTA, H. TAKIMOTO, and K. OHTANI (*Nihon University, Tokyo, Japan; and University of Alabama, USA*).

**0634** Clinical Evaluation of Resin Composite Restorations for Wedge-shaped Defect. T. TAKADA\*, N. INAI, T. NIKAIIDO, N. HARADA, Y. NAKAOKI, T. YOSHIKAWA, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**0635** Clinical Evaluation of Tooth-colored Materials in Non-caries Lesions. S. POOLTHONG, C. MANEENUT, V. PATANAPIRADEJ, W. PATANAPIRADEJ\*, and S. CHUCHATTHAI (*Chulalongkorn University, Bangkok, Thailand*).

**0636** A 10-year Retrospective Clinical Study of Class V Restorations. C. PRATI, C. NUCCI\*, S. CHERSONI, L. MONTEBUGNOLI, and G. MONTANARI (*Department of Emergency, School of Dentistry, University of Bologna, Italy*).

**0637** 24 Months' Clinical Evaluation of an Experimental Universal Composite Resin. V.V. GORDAN\*, I.A. MJÖR, R. WATSON, and O.D. VAZQUEZ (*University of Florida, Gainesville, USA*).

**0638** Clinical Performance of Prodigy Condensable Restorations after Six Months. C.-P. ERNST, K. AKSOGAN\*, and B. WILLERSHAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**0639** Clinical Evaluation of Two Packable Posterior Composites. L.G. LOPES\*, D.F.G. CEFALY, E.B. FRANCO, and M.F.L. NAVARRO (*Bauru Dental School, University of São Paulo, Brazil*).

**0640** A Multi-center Clinical Evaluation of an ORMOCER Restorative-2-year Results. M. ROSIN, C. KONSCHAKE\*, U. GREESE, D. TEICHMANN, A. HARTMANN, and G. MEYER (*Dental School, University of Greifswald, Private Practice, Gützkow, Private Practice, Greifswald, and Private Practice, Trassenheide, Germany*).

**0641** Clinical Results of Class II Definite Restorations in vivo Compared with a BIS-GMA Composite. F. SCHAFERS\* and C. KRANTZ (*Private Dental Practice, Hattorf, Germany*).

**0642** Clinical Examination of Resin Composite Fillings in Class I, II, and V and Lab-made Ceromer Restorations Up to 15 Months. K. MERTE\*, G. BENDER, and I. GEISEL (*University of Leipzig, Germany*).

**0643** 6-month Clinical Evaluation of Direct and Indirect Resin Composite Inlays. J.S. MENDONÇA\*, L. WANG, H. RIQUIERI, J.R.P. LAURIS, R.M. CARVALHO, and M.F.L. NAVARRO (*Bauru School of Dentistry, University of São Paulo, Brazil*).

**0644** Experimental Composite Resin for CAD/CAM-generated Onlays: One-year Clinical Evaluation. M.C. PETERS\*, K. NEMATOLLAHI, J.B. DENNISON, and D.J. FASBINDER (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0645** Provisional Posterior Bridge Restorations-Long-term Study. L. PERINKA\* and S. BARTUSKOVA (*Charles University in Prague, Czech Republic*).

**0646** Bonded Amalgam Restorations: Six Years' Clinical Results. Z. MACH, J.C. SETCOS\*, M. STANINEC, and J. REGENT (*Institute for Dental Research, Prague, Czech Republic; University of Manchester, UK; and University of California, San Francisco, USA*).

**Seq#: 83 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Curing Techniques, Depth of Cure, Hardness, Contraction Stress**

**0647** Depth of Cure and Microhardness of Selected Restorative Materials. M.V. FUENTES, L. CEBALLOS, M.P. MARTÍNEZ\*, M. TOLEDANO, R. OSORIO, and F. GARCÍA-GODOY (*University of Granada, Spain; and Tufts University, Boston, USA*).

**0648** Depth of Cure and Microhardness of Condensable and Flowable Composites. M.V. FUENTES\*, L. CEBALLOS, M. TOLEDANO, R. OSORIO, and F. GARCÍA-GODOY (*University of Granada, Spain; and Tufts University, Boston, USA*).

**0649** The Effect of Curing Technique on the Depth of Cure of Composite Resins. M. MANTE\* and F.K. MANTE (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0650** Effect of Camphoroquinone Contents on the Depth of Cure of Experimental Composites. H.N. LIM\* (*College of Dentistry, Kyung Hee University, Seoul, Korea*).

**0651** Polymerization Contraction Stress of Flowable Restorative Materials. H.Y. CHEN\*, J. MANHART, K.H. KUNZELMANN, and R. HICKEL (*Department of Restorative Dentistry, Dental School of the LMU, Munich, Germany*).

**0652** Contraction Stress of Flowable and Hybrid Resin Composites for Build-ups. K. TACHIBANA\*, T. KUROE, Y. TANINO, N. SATOH, N. OHATA, H. SANO, and A.A. CAPUTO (*Hokkaido University, Sapporo, Japan; and UCLA, USA*).

**0653** Effect of High-intensity Irradiation on Marginal Enamel Cracks. H. ISHIZAKI\*, M. FUKUSHIMA, K. NAKAJO, L. HAN, and M. IWAKU (*Niigata University, Japan*).

**0654** Effects of Fluoride-releasing Materials on Microhardness of Artificial Caries Lesions. A. PANICHUTTRA, S. POOLTHONG\*, E. BENJAVONGKULCHAI, and M.V. SWAIN (*Chulalongkorn University, Thailand; and University of Sydney, Australia*).

**0655** Microhardness of Esthetic Restorative Materials Cured by 3 Types of Narrow-banded Wavelength. D.H. SHIN\*, K.M. CHO, and H.C. KIM (*Dankook University School of Dentistry, Cheonan, Republic of Korea*).

**0656** Composite Resin Condensed Manually and Mechanically-Characterization through Thermal Analysis. A.C. REIS\*, H. PANZERI, and J.A.M. AGNELLI (*University of São Paulo, Ribeirão Preto, Brazil*).

**0657** Radiation Effect on Physical Properties of UDMA Resin. S. HAQUE\*, S. TAKINAMI, and F. WATARI (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**Seq#: 84 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Diagnostic Systems - MRI/Radiography**

**0658** MRI Evaluation in Diagnosis of Mandibular Osteomyelitis. K. UCHIYAMA\*, D. AOYAMA, E. SHIMOMURA, W. MURAOKA, T. OHTSUKA, and T. IMATANI (*Tochigi National Hospital, and Tokyo Dental College, Chiba, Japan*).

**0659** Characterization of Structural Change in Human Tooth by Low-field NMR. Q. NI\*, S. CHEN, and D. SHIN (*Southwest Research Institute, and Dental School, University of Texas Health Science Center, San Antonio, USA*).

**0660** Multislice True Dynamic MRI for Partially Displaced TMJ Discs. Y.J. CHEN\*, L.M. GALLO, and S. PALLA (*Clinic for Masticatory Disorders, University of Zürich, Switzerland*).

**0661** Evaluation of Radiographic Films and Processing Solutions. M.S.G. DEZOTTI\* and O. TAVANO (*Bauru School of Dentistry, University of São Paulo, Brazil*).

**0662** Digital and Conventional Radiographic Assessment for Simulated External Root Resorptions. T. OZAWA\*, M. TSUCHIDA, S. YAMAZAKI, T. ARAI, M. YUASA, K. KOBAYASHI, and A. YAMAMOTO (*Tsurumi University, Yokohama, Japan*).

**0663** Correlation of Radiographic and Histopathologic Findings of Radiopaque Lesions. M. ARAKI\*, K. HASHIMOTO, K. KOMIYAMA, and K. SHINODA (*Nihon University School of Dentistry, Tokyo, Japan*).

**0664** Image Layer for the OP 100 Using Digital and Analog Receptors. Z. KHAN\*, T.T. FARMAN, and A.G. FARMAN (*University of Louisville Health Sciences Center, KY, USA*).

**0665** In vitro Validation of a Digital Subtraction Radiography System Using Scanned Images. K.Y. ZEE\*, M.S. WOO, and E.F. CORBET (*Faculty of Dentistry, University of Hong Kong*).

**Seq#: 85 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Geriatric Oral Research - Oral Function and Quality of Life in Diverse Elders**

**0666** Chewing Ability and Fruit and Vegetable Intake in Adults Edentate in One Jaw. A.W.G. WALLS\*, J.G. STEELE, A. SHEIHAM, W. MARCENES, and P.J. MOYNIHAN (*University of Newcastle, and University College London, UK*).

**0667** Factors Associated with Perceived Masticatory Function among Elderly Residents. L.P. LIM\*, R.K.K. OW, J. NEO, T. LOH, and J. KHOO (*Faculty of Dentistry, National University of Singapore*).

**0668** Number of Teeth and Nutritional Status in Thai Older People. P. SRISILAPANAN\*, P. MALIKAEW, and A. SHEIHAM (*Chiang Mai University, Thailand; and University College London Medical School, University of London, UK*).

**0669** A Novel Apparatus for the Evaluation of Swallowing Function. F. TAMURA\*, S. SUZUKI, K. TOMITA, A. YOROZUYA, and Y. MUKAI (*Showa University, Tokyo, Japan; and University of Alabama at Birmingham, USA*).

**0670** Aging Effects of Tooth Absence and Powdered Food in SAMP-1 Mice. M. IINUMA\*, Y. SUZUKI, and Y. TAMURA (*Department of Pediatric Dentistry, School of Dentistry, Asahi College, Gifu, Japan*).

**0671** Oral-health-related Quality of Life According to Functional Capacity. R.H. SAUNDERS\* and M.E. MOSS (*University of Rochester, NY, USA*).

**0672** Satisfaction and Oral Health of Elderly Patients with Conventional and 2-implant Overdentures. M.A. AWAD, A. SAVARD, E. KLEMETTI, A. CHEHADE, J.P. LUND, and J.S. FEINE\* (*McGill University, Canada*).

**0673** Application of Short-form Oral Health Impact Profile on Elderly Japanese. K. IKEBE\*, H. SAJIMA, T. NOKUBI, R.L. ETTINGER, and C.A. WATKINS (*Osaka University, Japan; and University of Iowa, Iowa City, USA*).

**0674** Effect of Professional Oral Health Care on Elderly Living in a Nursing Home. M. ADACHI\*, I. ISHIHARA, K. OKUDA, and T. ISHIKAWA (*Fuchu Health Center, and Oral Health Science Center, Tokyo Dental College, Chiba, Japan*).

**0675** Autoimmune Arthropathy in Estrogen-deficient MRL/lpr Mice through RANKL-mediated Osteoclastogenesis. T. YONEDA\*, K. MORIYAMA, N. ISHIMARU, and Y. HAYASHI (*University of Tokushima, Japan*).

**0676** An Anteriorly Titrated Mandibular Position Improves Obstructive Sleep Apnea Severity. S. TSUIKI\*, A.A. LOWE, and J.A. FLEETHAM (*University of British Columbia, Vancouver, Canada*).

**0677** Amyloid- $\beta$  Peptides Inhibit T-cell Proliferation and Induce Apoptosis *in vitro*. C.S. TWU\*, B.S. SAJADI, P. VILLANUEVA, P. PROLO, I. WAN, E. YERUSHALMI, F. CHIAPPPELLI, and A. ANGELI (*UCLA School of Dentistry, USA; and Internal Medicine, Department of Clinical and Biological Sciences, University of Turin, Italy*).

**Seq#: 86 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Cariology Research - Early Childhood Caries, S. mutans, Fluoride Intake & Excretions, Dental Fluorosis, Fingernail Fluoride**

**0678** Early Childhood Caries and Oral Care Practices in Kerala, India. B. JOSE\* and N.M. KING (*University of Hong Kong*).

**0679** Mutans Streptococci Colonization in Chinese Children: An Eight-year Cohort Study. W. WANG\*, Y. LI, P.W. CAUFIELD, X. PAN, Y. LUO, and H. WU (*School of Stomatology, Peking University, Beijing, China; and School of Dentistry, University of Alabama, Birmingham, USA*).

**0680** Prevalence of Early Childhood Caries (ECC) among Thai Toddlers in Urban and Rural Areas of Khon Kaen Province, Thailand. T. TECHANITISWAD\* and C. DURWARD (*Department of Pediatric Dentistry, Faculty of Dentistry, Khon Kaen University, Thailand; and Greenlane Hospital, Auckland, New Zealand*).

**0681** F Intake from the Diet and from Dentifrices in Children Consuming Fluoridated Salt. H. FRANCO, A.M. ACEVEDO, M. PETRONE, A. VOLPE, and F. ROJAS-SANCHEZ\* (*Central University of Venezuela, Caracas*).

**0682** Daily Fluoride Intake by Children in Non-fluoridated Areas. H. KOGA\*, Y. MAKI, and Y. TAKAESU (*Tokyo Dental College, Chiba, Japan*).

**0683** The Fluoride Excretion via Urine of Children Aged 3-6 Years Residing in Areas with High- and Low-fluoride Levels in Drinking Water, Chiang Mai, Thailand. C. CHITTAISONG\*, V. SONGPANYAVUTH, C. CHINAWONGS, K. RATANANARONGPAN, T. NIMNUAL, S. MINGKWAN, and E. PRATEEP-TONGKUM (*Chiang Mai University, Thailand*).

**0684** Nail Use as Indicator of Fluoride Chronic Exposition. R. FUKUSHIMA\*, J.A. CURY and M.A.R. BUZALAF (*Bauru Dental School, University of São Paulo, Brazil*).

**0685** Relationship among Drinking Water Fluoride Levels, Caries, and Fluorosis. A.J. LOUW\* and S.R. GROBLER (*University of Stellenbosch, Tygerberg, South Africa*).

**Seq#: 87 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Implantology Research - Clinical Studies and Microbiological Issues**

**0686** 13-year Retrospective Evaluation of Clinical Applications of IMZ Implants. F. WATANABE\*, Y. TAWADA, I. TAKASE, and Y. HATA (*School of Dentistry, Nippon Dental University at Niigata, Japan*).

**0687** Immediate Implantation in Fresh Extraction Sockets. An Histological Study in Man. M. PIATTELLI\*, M. PAOLANTONIO, M. DOLCI, A. SCARANO, D. D'ARCHIVIO, G. Di PLACIDO, and V. TUMINI (*Dental School, University of Chieti, Italy*).

**0688** Implant Success Rates in Partially Edentulous Patients 3 Years after Loading: A Prospective Study. S.M. BESCHNIDT\*, A. KRAUSSE, R. MUCHE, T. GERDS, and J.R. STRUB (*Department of Prosthodontics, Institute of Medical Biometry and Medical Informatics, Albert-Ludwigs University, Freiburg, Germany*).

**0689** Influence of the Occlusal Contact of Dental Implants on Antagonists. H. ISHIHARA\*, H. MIURA, D. OKADA, T. SHINKI, O. MORIKAWA, and A. TOKUDA (*Tokyo Medical and Dental University, Japan*).

**0690** Implant Success in Oral Cancer Patients Supplied with Fixed/Removable Prosthetic Appliances. K. NAGY\*, L. BORBÉLY, and I. SONKODI (*Dental School, University of Szeged, Hungary*).

**0691** Vascular Endothelial Growth Factor and Microvessel Density in Soft Tissues around Healthy and Failed Dental Implants. P. Di DOMIZIO\*, R. CORNELINI, L. ARTESE, C. RUBINI, M. FIORONI, A. SCARANO, and G. IEZZI (*Dental School, University of Chieti, and Dental School, University of Ancona, Italy*).

**0692** Histopathological Aspects of Osseointegrated Implants Removed for Mobility. T. ECCELLENTE\*, A. SCARANO, G. ORSINI, G. IEZZI, G. PETRONE, and M. PIATTELLI (*University of Chieti, Italy*).

**0693** Analysis of the Factors Affecting Magnification Differences between Panoramic Radiography and CT/MPR for Dental Implant Surgery. J.J. JUNG, Y. KU\*, Y.M. LEE, I.C. RHYU, C.P. CHUNG, S.B. HAN, and S.M. CHOI (*Department of Periodontology, College of Dentistry, Seoul National University, Korea*).

**0694** Position-/Age-dependent Visualization of Mandibular Canal by Orthopantomography and Computed Tomography. T. MATSUURA, H. IMAMURA, M. ISHIKAWA\*, T. TSUZUKI, S. UKON, Y. NAGASHIMA, H. KIDO, M. MATSUURA, T. KAGAWA, T. WADA, and H. SATO (*Fukuoka Dental College, Japan*).

**0695** Assessing Changes in Peri-implant Bone Using Digital Subtraction Radiography. J.Y. KWON\* and Y.S. KIM (*Department of Prosthodontics, College of Dentistry, Seoul National University, Korea*).

**0696** Transmission of Periodontal-disease-associated Bacteria from Teeth to Osseointegrated Implant Regions. S. SUMIDA\*, K. ISHIHARA, M. KISHI, and K. OKUDA (*Tokyo Dental College, Chiba, Japan*).

**0697** Removal of Human Plaque from Ti Implant with Sonic vs. Manual Toothbrush. R. JURIC\*, B. SIMONCIC, A. KANSKY, B. SOTOSEK, and K. SEME (*SIMED Zobozdravstvo, Ljubljana, and Medical Faculty, University of Ljubljana, Slovenia*).

**0698** CD1a- and MIB-1-positive Cells in Healthy Gingiva and in Peri-implantitis. G. GIANOTTI\*, R. CORNELINI, L. ARTESE, C. RUBINI, M. FIORONI, A. SCARANO, and G. IEZZI (*Dental School, University of Chieti, and Dental School, University of Ancona, Italy*).

**0699** Laminin-5 and MMP-8 in Peri-implant Sulcular Fluid in Peri-implant Disease. M. KIVELÄ-RAJAMÄKI\*, V. HUSA, T. TERVAHARTIALA, T. SALO, O. TERONEN, and T. SORSA (*University of Helsinki, and University of Oulu, Finland*).

**0700** Diversity of Bacterial Findings in Failed Dental Implants: A Case Report. N. SARKONEN\*, M. KÖNÖNEN, Y. KONTTINEN, H. JOUSIMIES-SOMER, and E. KÖNÖNEN (*National Public Health Institute, and University of Helsinki, Finland*).

**0701** Immediate Loading of Titanium Implants: A Clinical Analysis in Man. M. DEGIDI\*, A. SCARANO, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**0702** Transalveolar Sinus-lift Procedure without Bone Grafting or Barrier Membrane Use. E.F. CORBET\* (*Faculty of Dentistry, University of Hong Kong*).

**Seq#: 88 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral Health Research - Plaque Removal, Plaque Control Agents, Salivary pH, Apatite, Bleeding on Probing**

**0703** Evaluation of Highly Tapered-end Toothbrush Regarding Occlusal Fissures' Access Efficacy. M. HOTTA\*, S. IMADE, S. KAWANO, A. SANO, and I. SEKINE (*School of Dentistry, Asahi University, Gifu, and Jack's Co., Ltd., Osaka, Japan*).

**0704** Salivary pH after Challenge with Different Kinds of Milk. K. PATTANAPORN\*, P. AIEMSIRI, W. PINGKAEW, V. TEESANGDANG, and S. SARAPAN (*Faculty of Dentistry, Chiang Mai University, Thailand*).

**0705** Characterization of a Novel Glucanhydrolase for Dental Plaque Removal. D. KIM\*, S.J. RYU, E.J. SON, and H.J. CHUNG (*Chonnam National University, Guangju, and Lifenza Inc., Seoul, Korea*).

**0706** Solubility of Hydroxyapatite and Fluorapatite in Acidic Electrolyzed Water. N. FUKUI\*, T. SATO, T. TANAKA, M. NIWA, and H. AOKI (*Department of Preventive and Community Dentistry, School of Dentistry at Tokyo, Nippon Dental University, and Tokyo Bioceramics Institute Co. Ltd., Japan*).

**0707** Effect of Herbal Dentifrice on Dental Plaque and Gingivitis. S.J. HONG\*, K.K. PARK, J.B. SON, S.S. JEONG, and E.G. CHOI (*College of Dentistry, Chonnam National University, and Kyung Hee University, Korea; and Indiana University School of Dentistry, USA*).

**0708** Bleeding on Probing to Assess Periodontal Status for Health Promotion. Y. FUJII\*, T. KOGA, K. OKUDA, and K. SHIBUYA (*Lion Foundation for Dental Health, Tokyo, Japan*).

**Seq#: 89 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Mineralized Tissue - Dentinogenesis/Cementogenesis**

**0709** Cementum-like Tissue Deposition on the Resorbed Enamel Surfaces of Human Deciduous Teeth Prior to Shedding. N. SAHARA\* (*Matsumoto Dental University, Shiojiri, Nagano, Japan*).

**0710** Comparison between Dentin Tubules of Human and Bovine Teeth. A. LAMOSA\*, M.S. MIRANDA, K. DIAS, and M.F. LOPES (*UFRRJ School of Dentistry, and UERJ School of Dentistry, Rio de Janeiro, Brazil*).

**0711** Proteoglycans of Developing Rat Dental Tissue. T. WATANABE\*, H. TAKASHINA, Y. ITO, P. SCOTT, S. SATO, and F. RAHEMTULLA (*Kanagawa Dental College, Japan; University of Alberta, Canada; and School of Dentistry, University of Alabama, USA*).

**0712** Magnesium, Strontium, or Fluoride Ions and Osteoblastic or Odontoblastic Activities. M. INOUE\*, R.Z. LeGEROS, M. INOUE, R. ROHANIZADEH, R. DAVIDSON, and N. NAGAI (*New York University College of Dentistry, USA; and Okayama University, Japan*).

**0713** Cementum Pearl Formation in HEBP-affected Guinea Pig Molars. C.K. JAYAWARDENA\*, N. TAKAHASHI, and Y. TAKANO (*Graduate School, Tokyo Medical and Dental University, Japan*).

**0714** Distribution of Thioredoxin Peroxidase in the Teeth and Their Related Structures in Rats. S.W. JUNG\*, S.H. KIM, M.S. KIM, I.N. HOANG, W.J. KIM, O.M. OH, and E.J. LEE (*Dental Science Research Institute, Chonnam National University, South Korea*).

**0715** Effects of Bisphosphonates on Tooth Development in Rats. S.H. KIM\*, M.S. KIM, J.W. HAN, W.J. KIM, O.M. OH, and E.J. LEE (*Dental Science Research Institute, Chonnam National University, South Korea*).

**0716** Effects of Phosphoprotein Extractants on the Remineralization of Dentin Lesions. X.L. WANG\* and Q. WANG (*Wellington School of Medicine, New Zealand; and School of Stomatology, Beijing Medical University, China*).

**0717** Tissue Response to Subcutaneous Injection of EMDOGAIN® in Rats. K. TOMINAGA\*, I. TAMURA, K. MASUNO, Y. ITOH, R. HARA, and A. TANAKA (*Osaka Dental University, Japan*).

**Seq#: 90 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Mineralized Tissue - Amelogenesis**

**0718** Distribution of Hemidesmosomal-associated Proteins during Cytodifferentiation of Ameloblasts. K. YOSHIBA\*, N. YOSHIBA, M. IWAKU, and H. OZAWA (*Niigata University, Japan*).

**0719** Immunohistochemical Localization of Cell Signaling by Tyrosine-kinase Receptors during Amelogenesis. Y. JUN\*, S. TANASE, and Y. TAMURA (*Department of Pediatric Dentistry, Asahi University School of Dentistry, Gifu, Japan*).

**0720** Comparative Immunoblotting Analyses of Matrix Proteins throughout Amelogenesis in the Rat Incisor. P. LAVOIE, C.E. SMITH, and A. NENCI\* (*Université de Montréal, and McGill University, Montreal, QC, Canada*).

**0721** Regulation of Ca Concentration in Fluid Environment Assimilating Developing Enamel. T. AOBA\*, M. HATTORI, K. SATO, and Y. TAYA (*Nippon Dental University, Tokyo, Japan*).

**0722** A New Mutation in the Amelogenin Gene Causes X-linked Amelogenesis Imperfecta. H. SEKIGUCHI\*, S. ALALU-USUA, K. MINAGUCHI, and M. YAKUSHIJI (*Tokyo Dental College, Chiba, Japan; and Institute of Dentistry, University of Helsinki, Finland*).

**0723** An SEM Investigation of "Pitted" and "Local" Hypoplastic Amelogenesis Imperfecta. R.C. SHORE\*, B. BÄCKMAN, S.J. BROOKES, C. ROBINSON, S.P. LYNSTADAAS, and J. KIRKHAM (*Leeds Dental Institute, UK; Pedodontics, Umeå, Sweden; and Oral Pathology, Oslo, Norway*).

**0724** Primary Culture and Characterization of Ameloblastoma Cells. C. GAO\*, D. MACHULE, W. LI, and P.K. DENBESTEN (*University of California at San Francisco, USA*).

**0725** Morphologic and Stereologic Ultrastructural Study of Secretory Ameloblasts in Rat Incisors Subjected to Fluorosis. D.A. RIBEIRO\*, G.F. ASSIS, and L. HIROTA (*Faculty of Dentistry of Bauru, University of São Paulo, Brazil*).

**0726** Effects of Fluoride-releasing Elastomers on Acid Resistance of Human Enamel. X.Y. WANG\*, K. MIYAZAKI, Y. ITOH, and W. MOTOKAWA (*Fukuoka Dental College, Japan*).

**Seq#: 91 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Salivary Research - Saliva/Salivary Molecules/Disease

**0727** The Measurements of Salivary Flow Rates of "Dry Eye" Patients. M. KOSEKI\*, Y. MAKI, and Y. TAKAESU (*Tokyo Dental College, Chiba, Japan*).

**0728** Association between HLA Class II Alleles and Stimulated Whole Saliva. J. CHIBA\*, Y. OZAWA, and S. SAKAMOTO (*Tohoku University Dental School, Sendai, Japan*).

**0729** A Calcium Phosphate Precipitation Accelerator in Human Parotid Saliva. N. TAMAKI\*, Y.Y. LI, M. MORITA, and T. WATANABE (*Okayama University Dental School, and Graduate School of Dentistry, Hokkaido University, Sapporo, Japan*).

**0730** The Effects of Saliva on Extrinsic Staining *in vitro*. S.R. SHEEN\*, N.J. BANFIELD, and M. ADDY (*Restorative Dentistry, Bristol Dental School, UK*).

**0731** Chronic Gustatory Stimulation: A Model for Parotid Hypertrophy in Rats. T. ZELLES\*, G. VARGA, J. BLAZSEK, V. GRESZ, A. NAGY, and M.G. HUMPHREYS-BEHER (*Semmelweis University, and Institute of Experimental Medicine, Budapest; and University of Florida, Gainesville, USA*).

**0732** Change of Salivary Cortisol during Wheelchair-dance Exercise and Personal Computer-work. S. TAKAHASHI-ABBE\*, K. ABBE, Y. WATANABE, and M. WATANABE (*Graduate School of Dentistry, Tohoku University, and Kansei Fukushi Research Center, Tohoku Fukushi University, Sendai, Japan*).

**0733** Recovery Effects of Kampo Medicine against Drug-induced Xerostomia. R. HARA\*, H. YAMAGISHI, M. OKUBO, K. SAWAKI, and M. KAWAGUCHI (*Tokyo Dental College, Chiba, Japan*).

**0734** Lamina Lucida Absence in Sjögren's Syndrome and AIDS. Y. WANG\*, C.M. COBB, T. TUTTLE, W. CASTELLANI, and C. McARTHUR (*University of Missouri-Kansas City, USA*).

**0735** Studies on Saliva in Estrogen-treated Postmenopausal Women. L. ELIASSON\*, A. CARLÉN, and D. BIRKHED (*Faculty of Odontology, Göteborg University, Sweden*).

**0736** Relationships between sIgA Levels and Caries Risks in Schoolchildren's Saliva. K. KIYAMA\*, M. TAKAHASHI, M. OZAKI, W. MOTOKAWA, K. ISHIBASHI, and K. ABE (*Fukuoka Dental College, Japan*).

**Seq#: 92 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Microbiology/Immunology & Infection Control - Colonization

**0737** Bacterial Attachment on Titanium Surface: A Preliminary Electron Microscopy Study. H. KUULA\*, E. KÖNÖNEN, K. LOUNATMAA, H. JOUSIMIES-SOMER, Y. KONTTINEN, and M. KÖNÖNEN (*University of Helsinki, National Public Health Institute, and Helsinki University Techn., Finland*).

**0738** Identification of a New Bacterial Binding Region of Fibronectin Molecule. S. SOUTOME\*, H.-O. ITO, K. KITADA, and M. INOUE (*Department of Preventive Dentistry, Kagoshima University Dental School, Japan*).

**0739** Binding of Abiotrophia defectiva to Salivary Proline-rich Protein. S. TAJIKA\*, M. SASAKI, Y. OHARA-NEMOTO, T. KOGA, A. AMANO, and S. KIMURA (*School of Dentistry, Iwate Medical University, and Faculty of Dentistry, Osaka University, Japan*).

**0740** Adherence to and Invasion of Oral Epithelial Cells by *Bacteroides forsythus*. M. SABET, S.-W. LEE\*, and R.K. NAUMAN (*Dental School, University of Maryland, Baltimore, USA*).

**0741** Characterization of the Interaction between *Prevotella nigrescens* and Hemoglobin. S.M. GUAN\*, H. NAGATA, and S. SHIZUKUISHI (*Graduate School of Dentistry, Osaka University, Japan; and School of Dentistry, 4th Military Medical University, Xi'an, China*).

**0742** Candidal Adherence to Cultured Human Cells of Various Origins. H. EGUSA\*, H. NIKAWA, S. MAKIHIRA, L.P. SAMARANAYAKE, and T. HAMADA (*Hiroshima University, Japan; and University of Hong Kong*).

**0743** Adhesion of Oral Streptococci to Esthetic Restorative Materials *in vitro*. T. TAKATSUKA\*, E. SANTOU, S. NAKABO, N. KONISHI, Y. TORII, and M. YOSHIYAMA (*Department of Operative Dentistry, Okayama University Dental School, Japan*).

**0744** Confocal Laser-scanning Microscope Analysis of *Actinomyces viscosus* Adherence to Composite. N. KONISHI\*, A. KUROSAKI, T. TAKATSUKA, Y. TORII, and M. YOSHIYAMA (*Department of Operative Dentistry, Okayama University Dental School, Japan*).

**0745** Growth Inhibition of Oral *Veillonella* and *Actinomyces* by *Lactobacillus casei*. M. TESTA, S. ANNAN, M. FERRO, R. VALLADARES, and L. CARDENAS\* (*National University of Tucuman, Argentina*).

**0746** Oral Health of Renal Transplant Patients in Hong Kong. C.S.P. TSANG\*, C.S.F. CHU, T.M. CHAN, W.K. LEUNG, A.W.K. CHAN, and L.P. SAMARANAYAKE (*University of Hong Kong, HKSAR*).

**0747** Oral Microbial Flora of Elderly Disabled Inpatients. M. TAKADA\*, T. SATO, and M. NIWA (*Department of Preventive and Community Dentistry, School of Dentistry at Tokyo, Nippon Dental University, Japan*).

**0748** Oral *Candida* Carriage in Compromised Hosts in Japan. N. MAEDA\*, E. HONDA, T. MUTOH, M. MORITO, K. TSUKADA, T. OHSHIMA, Y. ANDO, and H. MIYAZAKI (*School of Dentistry, Tsurumi University, Yokohama, and School of Dentistry, Niigata University, Japan*).

**0749** Symptomatology and Management of Recurrent Herpes Labialis in South Wales. M.A.O. LEWIS\*, A. PAREKH, N.A. YAQOOB, and A.J.C. POTTS (*Oral Surgery, Medicine and Pathology, University of Wales College of Medicine, Cardiff, UK*).

**0750** A Study on the Discoloration of Dental Casting Alloys. M. ISHIKAWA\*, Y. TAKAYAMA, E. MIURA, T. HOSOI, and K. SHIBUYA (*Lion Corporation, Odawara, Tsurumi University School of Dental Medicine, Yokohama, and Lion Foundation for Dental Health, Tokyo, Japan*).

**Seq#: 93 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Microbiology/Immunology & Infection Control - Infection Control**

**0751** Antimicrobial Activity of Ozonated Water against Dental Plaque. T. FUKUIZUMI\*, J. YANO, M. NAGAYOSHI, C. KITAMURA, M. TERASHITA, and T. NISHIHARA (*Kyushu Dental College, Kitakyushu, Japan*).

**0752** Antimicrobial Effect of Ozonated Water on Oral Micro-organisms. M. NAGAYOSHI\*, T. FUKUIZUMI, C. KITAMURA, M. TERASHITA, and T. NISHIHARA (*Kyushu Dental College, Kitakyushu, Japan*).

**0753** Hygienics with the Use of ATP in the Dental Environment. S. MASUTANI\*, Y. KASAMO, H. OHTA, I. KATAYAMA, T. OZAKI, and H. ONOSE (*School of Dentistry, Nihon University, Tokyo, Japan*).

**0754** A New Chemical Biocide to Control DUWL Contamination during Dental Procedures. L. MONTEBUGNOLI, F. CERVELLATI\*, L. VASCONI, C. PRATI, and G. DOLCI (*University of Bologna, University La Sapienza, Rome*).

**0755** Viral Load in Different Compartments—Flaviviruses in Serum and Saliva. S. LUNDHOLM\*, C. HULTGREN, T. NEDERFORS, and M. SÄLLBERG (*Karolinska Institute, Huddinge, Stockholm, Sweden*).

**0756** The Effects of Urban-Rural Discrepancies on Perception and Attitudes of Dentists toward Infection Control in Taiwan. H.C. CHENG\*, H.Y. CHIOU, and S.-Y. LEE (*Department of Dentistry, Taipei Medical University, Taiwan, ROC*).

**0757** Dental Unit Water: Contamination Level Assessment. E. WATANABE\*, A.M. AGOSTINHO, F.C. PIMENTA, W. MATSUMOTO, and I.Y. ITO (*FORP and FCFRP, USP, São Paulo, Brazil*).

**0758** Proposal of Control Standards for Aircleanliness in Dental Clinics. Y. SUYAMA\*, J. MURAMATSU, Y. TAKAKU, Y. OHKAWA, and Y. TAKAHASHI (*Tokyo Dental College, Chiba, Japan*).

**0759** Concept to Preserve the Water Quality of the Dental Unit. R. BIERHENKE\*, P. SCHMAGE, I. NERGIZ, P.M. KAULFERS, A. FAMOURI, U. DEKNOCK, and U. PLATZER (*Dental School, and Department of Medical Microbiology/Immunology, University of Hamburg, Germany*).

**0760** Antibacterial Effect of Nd:YAG Laser within Root Canal. D. VIDUČIĆ\*, S. JUKIĆ, I. ANIĆ, E. NEZIRI, D. SMOLJAK, S. KALINIĆ, Ž. BOŽIĆ, and Y. MIYAKE (*University of Tokushima, Japan; University of Zagreb, Croatia; and Private Dental Practice, Slovenia*).

**0761** Evaluation of Bacteriological Quality of Dental Unit Water in 50 General Dental Practices. A.J. FEILZER\*, T.L. VAN KAN, E.R. HAJEMA, and W.R. MOORER (*Department of Dental Materials Science and Department of Cariology, ACTA, The Netherlands*).

**0762** Evaluation of Air-purging and ClO<sub>2</sub> Treatment on Dental Waterlines. M.Y. WANG\*, R. WIRTHLIN, and C.I. HOOVER (*University of California, San Francisco, USA*).

**0763** Low-cost Selective Culture Medium for Isolation of *Actinobacillus actinomycetemcomitans*. H. TORKKO\*, K. KARI, and J.H. MEURMAN (*Institute of Dentistry, University of Helsinki, Finland*).

**0764** Infection Control in Brazilian Private Dental Practice. S. KOO\*, D. KOO, M.G.C. WATANABE, and I.Y. ITO (*School of Dentistry at Ribeirao Preto, University of São Paulo, Brazil*).

**Seq#: 94 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Oral & Maxillofacial Surgery - Molecular Wound Healing/Cancer Biology**

**0765** Molecular Mechanism of Hypoxia-induced PAI-1 Expression. Y.D. WU\*, H.S. DUONG, D.V. MESSADI, C.N. BERTOLAMI, and A.D. LE (*Charles R. Drew University of Medicine and Science, School of Dentistry, University of California at Los Angeles, and School of Dentistry, University of California at San Francisco, USA*).

**0766** Recommunication of Mesenchymal Tissue of Fetus Lip Surgically Incised and Sutured in CL/Fr Mice. K. KOHAMA\*, K. NONAKA, R. HOSOKAWA, T. NAGATA, and M. OHISHI (*Kyushu University, Fukuoka, Japan*).

**0767** Expression of FGFR1 and 2 in Myofibroblasts during Palatal Wound Healing. T. KANDA\*, N. FUNATO, Y. BABA, and T. KURODA (*Maxillofacial Orthognathics, Graduate School, Tokyo Medical and Dental University, Japan*).

**0768** TGF-β1 Derived from KB Cells Suppressed the Expression of DPP IV/CD26. H. TANAKA\*, T. UEMATSU, K. FURUSAWA, and M. YAMAOKA (*Matsumoto Dental University, Shiojiri, Nagano, Japan*).

**0769** Immunohistochemical Localization of Cytokeratin and PCNA in Desmoplastic Ameloblastoma. H. NAGATSUKA\*, E. FUJII, R. TAMAMUTA, K. HIBI, Y. ISHIWARI, P. THUNYAKIT-PISAL, S.G. RAO, J.-P. QI, L. SUN, S. TANCHAROEN, and N. NAGAI (*Oral Pathology, Okayama University Dental School, Japan; Chulalongkorn University, Thailand; Rajiv University of Health Sciences, India; Harbin Medical University, and Dalian Medical University, China; and Mahidol University, Thailand*).

**0770** Microencapsulation of Bovine Albumin Serum (BSA) and TGF-β1 Using PLGA. D.J. VERBRIGGHE, D.A. RUNYAN, and S.G. PATEL\* (*US Army Dental Research Detachment, Great Lakes, IL, USA*).

**0771** Relationship between Expression of the KAI1 Metastasis Suppressor and its Candidate Regulator p53 in Human Oral Cancer. K. ONO\*, K. UZAWA, K. AISAKI, M. YAMA, A. MIYAKAWA, T. WATANABE, H. YOKOE, and H. TANZAWA (*Department of Oral Surgery, School of Medicine, Chiba University, Japan*).

**0772** VEGF Quantification in the Marginal Periodontium of SSC Patients. J. JACKOWSKI\*, A. CHOVOLOS, P. ALTMEYER, W.-D. GRIMM, and S. PHILIPPOU (*University of Witten, St. Clemens Hospital Oberhausen, and Ruhr-University of Bochum, Germany*).

**0773** Allelic Loss of Chromosome 21q in Oral Cancer. N. YAMAMOTO\*, T. TANAKA, T. YAKUSHIJI, T. SHIBAHARA, and H. NOMA (*Tokyo Dental College, Chiba, Japan*).

**0774** Expression of Cytokines in Oral Cancer with Bone Invasion. T. NOMURA\*, M. OKAMOTO, K. HARADA, K. UYAMA, H. NISHIKAWA, M. SATO, K. YOKOO, T. SHIBAHARA, and H. NOMA (*Tokyo Dental College, Chiba, and Tokushima University, Japan*).

**0775** Cyclin D1 Overexpression and Gene Amplification in Lingual Squamous Cell Carcinoma. H. GOTO\*, K. KAWANO, I. KOBAYASHI, H. SAKAI, and S. YANAGISAWA (*Oita Medical University, and Kyushu University, Fukuoka, Japan*).

**0776** Clinicopathological Study of Oral Squamous Cell Carcinoma. Y. KAMEYAMA\*, K. KUBO, E. SATO, H. TANAKA, H. MAEDA, N. NATSUME, and K. KURITA (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0777** Ki-67 Expression in a Dentigerous Cyst, a Unicystic Ameloblastoma, and an Ameloblastoma Arising from a Dental Cyst. V. PERROTTI\*, G. ORSINI, M. FIORONI, C. RUBINI, A. SCARANO, and G. IEZZI (*Dental School, University of Chieti, and Dental School, University of Ancona, Italy*).

**0778** Study of Changes in Neo-osseous Vascularized Flap Using Autogenous Graft. W.K. KIM\* and S.G. KIM (*Oral Biologic Institute, University of Chosun, Kwangju, Korea*).

**0779** Experimental Model of Socket Healing after Rat Mandibular Incisor Extraction. D. SATO\*, S. KURODA, T. DAM-RONGRUNGRUANG, D. ITOH, S. YONEDA, K. OHYA, and S. KASUGAI (*Tokyo Medical and Dental University, Japan*).

**Seq#: 95 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Periodontal Research - Periodontal Diseases in Populations

**0780** Periodontal Disease among Vietnamese Middle-aged Adults. G.L. DO\*, A.J. SPENCER, K. ROBERTS-THOMSON, V.T. TRAN, D.H. TRINH, and H.D. HA (*Adelaide University, South Australia; and Hanoi Institute of Odonto-Stomatology, Vietnam*).

**0781** Early-onset Periodontitis in School Attendees in Uganda. J.M. ALBANDAR\*, M.B. MURANGA, and T.E. RAMS (*School of Dentistry, Temple University, Philadelphia, USA; and Makerere University, Kampala, Uganda*).

**0782** Periodontal Disease in the Village of Chicacao, Suchitepéquez, Guatemala. E. MILIÁN\*, M. ESCOBAR, R. AGUIRRE, R.A. SÁNCHEZ, R.A. CARRILLO, V. LIMA, R.M. PONCE, M. SAMAYOA, and M. GONZALEZ (*School of Dentistry, Universidad de San Carlos de Guatemala*).

**0783** Longitudinal Comparison of Treatments among Patients with Moderate-to-Severe Periodontal Disease. M.E. NUNN\* and S.K. HARREL (*Boston University, MA, and Baylor College of Dentistry, Dallas, TX, USA*).

**0784** Periodontal Status in an Italian HIV+ Population. M.E. GUARNELLI\*, M. TOSI, R. RODA, F. GHINELLI, and L. TROMBELLI (*Research Center for the Study of Periodontal Diseases, University of Ferrara, and University Operativa Mal. Infettive, Ferrara, Italy*).

**0785** Periodontal Condition in Bruxist Patients. S. BALDISSARA, S. CATAPANO, L. MINENNA, and L. TROMBELLI\* (*Research Center for the Study of Periodontal Diseases, and Department of Prosthodontics, University of Ferrara, Italy*).

**0786** Pre-radiation Dental Status and Treatment Need of Adult Patients with Head and Neck Cancer. D. MacCARTHY\* (*School of Dental Science, Trinity College, Dublin, Ireland*).

**0787** Crowding of the Lower Anterior Teeth and Periodontal Status of Male Saudi Cadets. K.I. AL-BADR\* and K. ALMAS (*College of Dentistry, King Saud University, Riyadh, Saudi Arabia*).

**0788** Multivariate Analysis of Oral Hygiene Data from a Representative German Sample. B.H. WOLF\*, C. RIEGER, M.H. WALTER, and K.W. BOENING (*Department of Prosthetic Dentistry, Technical University Dresden, Germany*).

**0789** BOP of Class II Gold and Composite Restorations in an *in vivo* Split-mouth Design. C. KRANTZ\*, F. SCHÄFERS, and T. ATTIN (*Department of Operative Dentistry, University of Göttingen, Germany*).

**0790** The Relationship between Caries Experience and Periodontal Status. T. MIYAKE\*, S. MURATA, and M. KAMBARA (*Osaka Dental University, Japan*).

**0791** Study of the Effect of FK506 vs. Cyclosporine on Gingiva Overgrowth. A. PONTIKAS, P. FAMILI\*, and J.M. CLOSE (*University of Pittsburgh, PA, USA*).

**0792** Coordinate Data Assessment of Post-surgical Gingival Regrowth in Transplant Patients. V. JOVANOVSKEI, E. LYNCH, M. CORSON, L. ZOU, K.T. UNDERWOOD, R.A. SEYMOUR, and J.M. THOMASON\* (*St. Bart's & Royal London SMD, Queen's University of Belfast, University of Newcastle, and Philips Oral Healthcare, UK*).

**Seq#: 96 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Periodontal Research - Effects of Drugs and Stress on the Periodontium

**0793** Phenytoin Up-regulates Keratinocyte Growth Factor in Gingival Cells: A Possible Mechanism of Drug-induced Gingival Hyperplasia. I. OLSEN\* and S.J. DAS (*Eastman Dental Institute for Oral Health Care Sciences, University College London, UK*).

**0794** The Effect of Cyclosporin A on Osteoblasts *in vitro*. J.S. HUH, J.W. KIM, K.S. CHO, Y.J. YOO, and S.H. CHOI\* (*Yonsei University, Seoul, Korea*).

**0795** Ca Channel Blocker, Nifedipine, Suppresses Cathepsin-L Activity *in vitro*. H. YAMADA\*, F. NISHIMURA, K. NARUISHI, S. TAKASHIBA, and Y. MURAYAMA (*Okayama University Dental School, Japan*).

**0796** The Analysis of C/EBP mRNA in Human Gingival Fibroblasts by RT-PCR. S. UEMATSU\*, Y. OSHIMA, D. TEWARI, M. TEWARI, O.C. TUNCAY, B.Y. HIRAOA, and S. KURIHARA (*Department of Orthodontics and Oral Biochemistry, Matsumoto Dental University, Japan; and Department of Orthodontics, Temple University, Philadelphia, PA, USA*).

**0797** Immunohistochemical Analysis of Proliferating Cell Nuclear Antigen in Adult Periodontitis and Nifedipine-induced Gingival Overgrowth. W.-T. HUANG\*, H.-K. LU, and C.-L. LI (*Graduate Institute of Oral Rehabilitation Science, School of Dentistry, Taipei Medical University, Taiwan*).

**0798** B-cell/Macrophage-gingival Fibroblasts Interaction Regulated by MiSA73 mAb. H. HIRANO\*, S. ANDO, S. YAMADA, S. MURAKAMI, and H. OKADA (*Graduate School of Dentistry, Osaka University, Japan*).

**0799** Periostin and S100A4 Protein mRNA in Human Periodontal Ligament Fibroblasts. B.O. KIM\*, Y.S. CHOI, H.J. KIM, J.C. PARK, and K.Y. HAN (*Chosun University, Kwangju, Korea*).

**0800** Neutrophil Elastase Has Potential Anti-inflammatory Effect on Human Gingival Fibroblasts. E. NEMOTO\*, S. KANAYA, T. TSUBAHARA, and H. SHIMAUCHI (*School of Dentistry, Tohoku University, Sendai, Japan*).

**0801** Effects of Cyclic Tension Force to PDL Cells on Osteoclastogenesis. T. KIKUIRI\*, S. TAKEYAMA, T. SHIRAKAWA, T. HASEGAWA, T. KOHGO, and H. OGUCHI (*School of Dentistry, Hokkaido University, Japan*).

**0802** The Effect of Restraint Stress for Experimental Periodontitis in Rats. S. SUGIISHI\*, N. YOSHINARI, T. TAKADA, H. KAWASE, M. MATSUOKA, T. TAKAYANAGI, and T. NOGUCHI (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0803** Restraint Stress as a Risk Factor for Periodontitis in Rats. T. TAKADA\*, N. YOSHINARI, S. SUGIISHI, H. KAWASE, M. MATSUOKA, and T. NOGUCHI (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**Seq#: 97 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Periodontal Research - Mechanical Therapy, Grafts**

**0804** Biomechanical Properties of the Healing Periodontal Ligament after Tooth Replantation. J. SHINOHARA\*, K. KOMAT-SU, T. ARAI, and M. CHIBA (*Tsurumi University, Yokohama, Japan*).

**0805** Dental Calculus and Periodontal Treatment—A 2-year Follow-up Study. M.T. FASOLO, G. BERND, and R.V. OPPER-MANN\* (*PPG-Odontologia, ULBRA, Brazil*).

**0806** Periodontal Wound Dressing (Vocopac®) Influences Long-term Treatment Outcomes. B.W. SIGUSCH\*, A. PFITZNER, G. KLINGER, and E. GLOCKMANN (*Department of Conservative Dentistry, University of Jena, Germany*).

**0807** Safety Evaluation of Novel Airpolishing Powders. G.J. PETERSILKA, M. BELL\*, A. MEHL, R. HICKEL, I. HÄBERLEIN, and T.F. FLEMMIG (*Clinic for Periodontology Münster, Gießen, and Munich, and ESPE Dental AG, Seefeld, Germany*).

**0808** Micromorphology and Bloodflow of the Inflamed Gingivae: before and after Treatment. V. KERDVONGBUNDIT\*, N. VONGSAVAN, and S. SOO-AMPON (*Department of Oral Medicine, Physiology and Biochemistry, Faculty of Dentistry, Mahidol University, Thailand*).

**0809** Effect of Gingival Stimulation with a Toothbrush on Periodontal Disease. Y. MATSUMORI\*, T. HANIOKA, M. OJIMA, M. TANAKA, and S. SHIZUKUISHI (*Osaka University, Japan*).

**0810** Collagen Synthesis of Gingival Fibroblasts by Toothbrushing. T. TOMOFUJI\*, D. EKUNI, T. SAKAMOTO, M. HORIUCHI, T. YAMAMOTO, and T. WATANABE (*Okayama University Dental School, Japan*).

**0811** Prospective Study on the Post-prosthetic Gingival Changes Following Crown-lengthening Procedures. C.-S. LEE\*, S.-H. KIM, S.-J. KIM, and J.-I. CHOI (*Department of Periodontology, Pusan National University, Korea*).

**0812** Short-term and Long-term Evaluation of Curtain Flap Procedure and Papillae Preservation Technique. C.-S. JEONG\*, S.-J. KIM, and J.-I. CHOI (*Department of Periodontology, Pusan National University, Korea*).

**0813** Localized Buccal Gingival Recessions: Modified Raetzke Technique. S. MATARASSO, F. CORAGGIO, and G. SPAGNUOLO\* (*University of Naples "Federico II", Naples, Italy*).

**0814** The Potential Effect of Intra-oral Autogenous Bone Graft on the Complicated Maxillary Furcation Involvement—An 18-month Observation. H.-J. YEOM\*, S.-J. KIM, and J.-I. CHOI (*Department of Periodontology, Pusan National University, Korea*).

**0815** Relationship of Creeping Attachment and the Treatment of Gingival Recession. L.A. MALTAGLIATI\* and E. SABA-CHUJFI (*Camilo Castelo Branco University, São Paulo, Brazil*).

**0816** Calcium Sulfate in Treatment of Intrabony Periodontal Defects. D. Di STEFANO\*, M. ORSINI, G. ORSINI, D. BENLLOCH, J.J. ARANDA, P. LAZARO, and A. SCARANO (*Dental School, Complutense University, Madrid, Spain; and Dental School, University of Chieti, Italy*).

**0817** Collagen/Hydroxyapatite/Chondroitin Sulphate Implant in the Treatment of Deep Intrabony Defects. A. SCABBIA\*, G. BARBE, L. BOZZI, U. CADORE, L. FELISATTI, L. MARCHETTI, E. MEOTTI, S. PENNICA, and L. TROMBELLI (*Research Center for the Study of Periodontal Diseases, University of Ferrara, Italy*).

**Seq#: 98 Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Pharmacology, Therapeutics, & Toxicology - Side-effects, Antimicrobials, and Pain**

**0818** Gingival Overgrowth Induced by Amlodipine. Y. AKIMOTO\*, M. IKEDA, H. NISHIMURA, T. KANEDA, H. YAMAMOTO, H. MATSUMOTO, and A. FUJII (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**0819** Effect of Solcoseryl® on Calcification in Human Dental Pulp Fibroblasts. H. MATSUMOTO\*, M. OMURA, N. SATO, H. OKADA, M. HORI, A. GUNJI, and A. FUJII (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**0820** Pharmacologic Pain Management: Needs Assessment. R. CROUT\*, S. CUFFY, K. POURMASIHA, and S. WEARDEN (*School of Dentistry, West Virginia University, Morgantown, USA*).

**0821** Monitoring Fluoride Intake through 8-, 16-, and 24-hour Urinary Fluoride. P. PHANTUMVANIT\*, S. SUPONKHUN, and J. PIPATTARATORNCHAI (*Faculty of Dentistry, Thammasat University, Patumthani, Thailand*).

**0822** Salivary Statherin Fragment Elicits Broad-spectrum Antimicrobial Activity. P. ANTONY RAJ\* and K.J. ANTONY RAJ (*Division of Periodontics, School of Dentistry, Marquette University, Milwaukee, WI, USA*).

**0823** Studies on the Effect of Polyvinyl Pyrrolidone on the Activity of a Chlorhexidine Mouthwash. E. MACDONALD\*, N. CLAYDON, S. SMITH, G. JACKSON, and M. ADDY (*Restorative Dentistry, Bristol Dental School, and SmithKline Beecham, Weybridge, Surrey, UK*).

**0824** New Sugar-free Candy: Zinc Delivery and Antimicrobial Activity. P. GIANI, L. PAROTTI, G. SALVAGO, and R. FERRO\* (*Oral Care Innovation Centre, Lever Fabergè, Milan, Italy*).

**0825** Allergic Reaction Caused by Rosin in Dental Preparations. T. OHSUMI\*, S. HIGASHI, and K. KUROKI (*Kyushu Dental College, Kitakyushu, Japan*).

**0826** Alternative Index to Measure Effects of Chewing Gum on Plaque. C.J. KLEBER, J. MILLEMAN, K. MILLEMAN\*, M.L. BOSMA, C.M. KOLLAR, S.Y. LITTLEJOHN, and S.R. SMITH (*University Park Research Center, Fort Wayne, IN, and GlaxoSmithKline, Parsippany, NJ, USA*).

**0827** Long-term Fluoride Exposure and Prevalence of Joint Pain and Stiffness. Y. LI\*, C. LIANG, C. SLEMENDA, R. JI, W. ZHANG, B. KATZ, C. JOHNSTON, and S. NIU (*Loma Linda University, CA, and Indiana University, USA; and IEHE, Beijing, PRC*).

**0828** Antimicrobial Activity of Baicalein, Baicalin, and Wagonin. K.Y. HO\*, C.C. TSAI, J.S. HUANG, Y.P. HO, and C.C. LIN (*Graduate Institute of Dental Sciences, and Graduate Institute of Natural Products, Kaohsiung Medical University, Taiwan*).

**0829** Cancer Drug Activation by Carboxylesterases: A Structural Study. S. BENCHARIT\*, E.L. HOWARD-WILLIAMS, C.L. MORTON, P.M. POTTER, and M.R. REDINBO (*University of North Carolina-Chapel Hill, and St. Jude Children's Research Hospital, Memphis, TN, USA*).

**0830** Genotoxicity of the ZOE-based and Resin-based Root Canal Sealers. T.H. HUANG\*, C.T. KAO, H. LEE, and M.Y. CHOU (*Chung Shan Medical and Dental College, Taichung, Taiwan*).

**0831** Nasal vs. Oral Midazolam Sedation for Anxious Pediatric Dental Patients. S. KIM\*, S. FADAVI, I.C. PUNWANI, and A. KOERBER (*University of Illinois at Chicago, USA*).

**0832** Risk Dose of Dental Fluorosis in a Fluoridated Region Considering Seasonal Temperature Effect and Fluoride Use. Y.B.O. LIMA\* and J.A. CURY (*Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).

**Seq#: 99** **Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Neuroscience/TMJ - Trigeminal Neural Activity, Sensory Function, and Molecular Studies**

**0833**  $\mu$ -opioid Receptor mRNA in Inflamed Synovia of Rat Temporomandibular Joint. K. HAYASHI\*, M. SUGISAKI, S. OTA, and H. TANABE (*Jikei University School of Medicine, Tokyo, Japan*).

**0834** Relationship between Type II Procollagen-C Peptide and Cartilage-degrading Factors in Synovial Fluid of Various TMJ Arthropathies. E. KUBOTA\*, Y. IJIMA, M. KOBAYASHI, T. SHIBATA, and K.-I. MURAKAMI (*Kanagawa Dental College, School of Medicine, Yamagata University, and Faculty of Medicine, Kyoto University, Japan*).

**0835** Interleukin-1 Regulates Matrix Metalloproteinase Synthesis by Rat TMJ Disc Cells and Chondrocytes. Y. IJIMA\*, E. KUBOTA, and M. KOBAYASHI (*Department of OMS, Kanagawa Dental College, Japan*).

**0836** Activity of Opioid Receptors in Modulating Pain-coping Mechanism. N.M. SU\*, G. KUNG, and B.C. SHYU (*Columbia University, New York, USA; and Academia Sinica, Taipei, Taiwan, ROC*).

**0837** Classifications of TMJ Nociceptors in Rats. Y. TAKEUCHI\*, K. KINO, T. AMAGASA, and K. TODA (*Maxillofacial Surgery, Temporomandibular Joint Clinic, and Cognitive Neurobiology, Graduate School, Tokyo Medical and Dental University, Japan*).

**0838** Enhancement of Cartilage Matrix Protein in Cartilage of Osteoarthritic Mandibular Condyle. S. OHNO\*, H. SUGIYAMA, Y. KATO, K. MURAKAMI, T. SHIBATA, and K. TANNE (*Hiroshima University, Kyoto University, and Yamagata University, Japan*).

**0839** Cartilage Matrix Protein Synthesis is Related to Severity of TMJ Osteoarthritis. K. MURAKAMI\*, H. SUGIYAMA, S. OHNO, K. TANNE, T. SHIBATA, and Y. KATO (*Kyoto University, Hiroshima University, and Yamagata University, Japan*).

**0840** Fos Induction in Rats with Adjuvant-induced Parotitis. A. OGAWA\*, Y. TAMURA, T. MORIMOTO, and K. IWATA (*Osaka University, Suita, Japan*).

**Seq#: 100** **Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral Medicine & Pathology - Oral and Maxillofacial Pathology: Human Studies, Mucosal Permeability**

**0841** A Study of Survival in Different Types of Oral Cancer. H.E. LANFRANCHI\*, M.S. GANDOLFO, D. BRAN-DIZZI, and G. COLONA (*Department of Oral Medicine, Dentistry University of Buenos Aires, Argentina*).

**0842** Characterization of Inflammatory Infiltrate in Oral Pemphigus Vulgaris. S. FANALI\*, G. PANNONE, L. LO MUZIO, F. BAMBINI, M.D. MIGNOGNA, and A. FIOR (*Università di Napoli Federico II, Università Chieti, Università Ancona, and Università Verona, Italy*).

**0843** Expression Pattern of Versican in Odontogenic Tumor. Y. ITO\*, Y. ABIKO, T. ARAKAWA, F. RAHEMTULLA, Y. TANAKA, and T. KAKU (*Kanagawa Dental College, Health Sciences University of Hokkaido, and Tokyo Dental College, Japan; and University of Alabama, Birmingham, USA*).

**0844** Overexpression of CCND1 in Oral Carcinogenesis in a Chinese Cohort. Q. CHEN\*, G. LUO, L.P. SAMARANAYAKE, and B. LI (*Oral Biosciences, Faculty of Dentistry, University of Hong Kong, and College of Stomatology, West China University of Medical Sciences, Chengdu*).

**0845** Co-expression of p53 and p21 in the Squamous Cell Carcinomas. Y.R. FANG\*, M. WATO, Y. MASUNO, J. LI, Z.Y. ZHANG, Y. JIN, Y. UEDA, and A. TANAKA (*Departments of Anesthesiology and Oral Pathology, Osaka Dental University, Japan; and Shang 2nd Medical University, and Xian 4th Medical University, China*).

**0846** Expression of Bcl-2, Bcl-x, and Bax in Pleomorphic Adenoma. K. MASUNO\*, T. NISHIKAWA, K. KOYAMA, Y. YAMANAKA, and A. TANAKA (*Osaka Dental University, Japan*).

**0847** Apoptosis in Normal Oral Mucosa, Oral Precancer, and Cancer. E. FIERA\*, C. RUBINI, M. FIORONI, G. IEZZI, G. PETRONE, and A. SCARANO (*Dental School, University of Chieti, and Dental School, University of Ancona, Italy*).

**0848** Immunohistochemical Expression of Apoptosis-associated Factors in Tongue Squamous Cell Carcinoma. F. KATAGIRI\*, M. MORIDE, and M. KATAGIRI (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**0849** Microvessel Density (MVD) and Vascular Endothelial Growth Factor Expression (VEGF) in Human Oral Squamous Cell Carcinoma. L. ARTESE\*, C. RUBINI, M. FIORONI, A. SANTINELLI, A. SCARANO, and G. IEZZI (*Dental School, University of Chieti, Italy*).

**0850** STR and mtDNA Analysis from Contaminated Dental Materials. Y. HANAOKA\*, S. MARUYAMA, and K. MINAGUCHI (*Department of Forensic Odontology, Tokyo Dental College, Chiba, Japan*).

**0851** Permeability and Barrier Function of Three Porcine Non-keratinized Mucosae. M.J. KREMER\*, P.W. WERTZ, and C.A. SQUIER (*University of Iowa, Iowa City, USA*).

**0852** Oral Mucosal Permeability is Altered in Lichen Planus. M.J. McELLONE, E. HAGI-PAVLI, A.T. CRUCHLEY, P. ATKIN, M.H. THORNHILL, and D.M. WILLIAMS\* (*Bart's & The London, Queen Mary's Sch Med Dent, University of London, UK*).

**0853** WITHDRAWN

**Seq#: 101** **Thursday, June 28, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Craniofacial Biology - Developmental Biology**

**0854** Palatal Shelf Adhesion is Mediated by TGF- $\beta_3$ -induced Chondroitin Sulphate Proteoglycan. A. GATO, C. TUDELA, M.J. RIVAS, M.A. FORMOSO, I. ALONSO, J.A. MORO, and C. MARTÍNEZ-ÁLVAREZ\* (*University Complutense of Madrid, and University of Valladolid, Spain*).

**0855** Susceptibility Genes to Subsets of CL/P. H. SHIDA\*, Y. SAKATA, K. TOMIZUKA, T. SUSAMI, and T. TAKATO (*University of Tokyo, Japan*).

**0856** Pax9 Expression in Spontaneous Cleft Lip and Palate of CL/Fr. T. HAMACHI\*, Y. SASAKI, K. HIDAKA, and M. NAKATA (*Graduate School of Dental Science, Kyushu University, Fukuoka, Japan*).

**0857** Local Patterning within Chicken Frontonasal Mass. M. KAWAKAMI\* and J.M. RICHMAN (*Graduate School of Dentistry, Osaka University, Japan; and Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0858** *Fgf8* Expression Predicts Divergent Beak Morphologies in Distinct Avian Species. A.H. KVICHAK\*, R.A. SCHNEIDER, J. CHOU, D. HU, and J.A. HELMS (*University of California at San Francisco, USA*).

**0859** Effect of Immobilized rhBMP-2/Collagen on ST2 Cells. H. TSUJIGIWA\*, H. NAGATSUKA, Y. ISHIWARI, K. NAKANO, I.L. VILORIA, G.B. PALMARIO, S.H. CHAY, J.I. LEE, O. TERVIDCHAKORN, and N. NAGAI (*Okayama University, Japan; University of the East, The Philippines; National University Hospital, Singapore; Seoul National University, Korea; and Mahidol University, Thailand*).

**0860** Expression of the CFTR Gene in Different Tissues of Mice. W. SUI\*, C. BOYD, and J.T. WRIGHT (*School of Dentistry, University of North Carolina at Chapel Hill, USA*).

**0861** Kininogen Expression in the Mast Cells of the Rat Oral Mucosa. S. MATSUURA\* and K. HOSOI (*Matsumoto Dental University, Shiojiri, and Tokushima University School of Dentistry, Japan*).

**0862** HSP25 is Essential for Meckel's Cartilage Development in Mouse Embryos. M. SHIMADA\*, Y. KUDO, and O. AMANO (*Kanazawa University, Japan*).

**0863** Mechanical Tension Inhibits Chondrogenesis of Embryonic Rat Limb Bud Cells. K. ONODERA\*, I. TAKAHASHI, Y. SASANO, J.W. BAE, M. KAGAYAMA, and H. MITANI (*Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**0864** Effect of CTGF/Hcs24 on Proliferation/Differentiation of Articular Chondrocytes in Culture. T. MIZUSHIMA\*, T. NISHIDA, T. KUBOKI, C. KOMORI, M. KANYAMA, W. SONOYAMA, T. FUJISAWA, T. NAKANISHI, H. YATANI, and M. TAKIGAWA (*Okayama University Dental School, Japan*).

**0865** Free-radical Enzymes in Maxillary Osteoblasts of Osteopetrotic (*op/op*) Mice. M. KUWANA\*, H. WATANABE, J. SASAKI, and T. YANAGISAWA (*Tokyo Dental College, Chiba, and Okayama University Medical School, Japan*).

**0866** Mn-SOD, i-NOS, and e-NOS mRNA in *op/op* Mice Calvarial Osteoblasts. H. WATANABE\*, M. KUWANA, J. SASAKI, and T. YANAGISAWA (*Tokyo Dental College, Chiba, and Okayama University Medical School, Japan*).

**0867** Enhanced Differentiation in Apert Osteoblastic Cells with FGFR2 S252W Mutation. Y. TANIMOTO\*, M. YOKOZEKI, K. HIURA, K. MATSUMOTO, H. NAKANISHI, and K. MORIYAMA (*University of Tokushima, Japan*).

**0868** *c-fos*, *OPG*, and *mitf* Gene in an Autosomal-dominant Osteopetrosis Family. Y.J. CHOI, J.I. LEE, S.P. HONG, and C.Y. LIM\* (*Department of Oral Pathology, College of Dentistry, Seoul National University, Korea*).

**0869** Analysis of GNAS1 of Fibrous Dysplasia Developed for Two Generations. I. HIRATA\*, K. TAKAHASHI, S. HORI, S. KOSUGI, K. MURAKAMI, Y. HYO, and T. IIZUKA (*Kyoto National Hospital, University of Kyoto, and Toyooka Hospital, Japan*).

**Seq#: 102 Friday, June 29, 9:00 am - 11:00 am**  
**Symposium, Makuhari Messe: Int'l Conf Room**

**Periodontal Research - Genetics of the Periodontal Diseases**  
**[Supported by Sunstar]**

**Chairpersons: D.F. Kinane and R.J. Genco**

**0870** 9:00 Genetics of the Periodontal Diseases. D.F. KINANE\* and R.J. GENCO (*University of Glasgow, Scotland; and SUNY at Buffalo, New York, USA*).

9:05 Twin Studies in Periodontology. B. PIHLSTROM (*University of Minnesota, Minneapolis, US*).

9:30 Molecular Polymorphisms in Genes Related to Inflammatory and Immune Molecules. E. DeNARDIN (*State University of New York, Buffalo, US*).

9:55 Unique Single-gene Disorders. N. THAKKER (*University of Manchester, UK*).

10:20 Linkage Analysis, Segregation Analysis. H. SCHENKEIN (*Virginia Commonwealth University, Richmond, US*).

10:45 Discussion

**Seq#: 103 Friday, June 29, 9:00 am - 11:00 am**  
**Symposium, Makuhari Messe: Room 304**

**Neuroscience/TMJ and Craniofacial Biology - New Insights into the Pathology and Diagnosis of Disorders of the TMJ**

**Chairpersons: F. Lobbezoo and P. Svensson**

**0871** 9:00 New Insights into the Pathology and Diagnosis of Disorders of the TMJ. F. LOBBEZOO\*, C.C. PECK, M. DRANGSHOLT, H. SATO, S. KOPP, and P. SVENSSON (*ACTA, The Netherlands; University of British Columbia, Canada; University of Washington, USA; Fukuoka Dental College, Japan; Karolinska Institutet, Sweden; and University of Aalborg, Denmark*).

9:05 Insights into the Functional Anatomy of the TMJ. C.C. PECK (*University of British Columbia, Vancouver, Canada*).

9:30 TMJ Disc Displacement and Arthralgia: Frequency, Risk Factors, and Natural History. M. DRANGSHOLT (*University of Washington, Seattle, US*).

9:55 Pathology and Diagnosis of TMJ Disorders: Developments in Imaging. H. SATO (*Fukuoka Dental College, Japan*).

10:20 The Role of Cytokines in the Pathology and Diagnosis of TMJ Arthropathies. S. KOPP (*Karolinska Institute, Huddinge, Sweden*).

10:45 Discussion

**Seq#: 104 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 1**

**Behavioral Sciences/Health Services Research - Oral Cancer Assessment**

**Chairpersons: K. Almas and K. Fukai**

**0872** 9:00 Cost-benefit of Oral Cancer High-risk Screening Using Tolonium Chloride. A.I. ZAVRAS, A. VAMVAKIDIS\*, V. CARTSOS, D. ZAVRAS, N. KATSIKERIS, and N. ANDREPOULOS (*Harvard Dental School, Boston, MA, and International Monetary Fund, Washington, DC, USA; and Athens General Hospital, Greece*).

**0873** 9:15 Sociodemographic Disparities in Annual Oral Cancer Examinations, NHIS 1998. M.T. CANTO\*, T.F. DRURY, and A.M. HOROWITZ (*NIDCR/NIH, Bethesda, MD, USA*).

**0874** 9:30 U.S. Trends in Annual Oral Cancer Examinations: 1992 and 1998. A.M. HOROWITZ\*, T.F. DRURY, and M.T. CANTO (*National Institute of Dental and Craniofacial Research, NIH, Bethesda, MD, USA*).

**0875** 9:45 Comparisons between Oral and Colorectal Cancer Examinations, NHIS, 1998. H.S. MOON\*, T.F. DRURY, M.T. CANTO, and A.M. HOROWITZ (*Dental College, SNU, Korea; and NIDCR/NIH, Bethesda, MD, USA*).

**0876** 10:00 Risk Factors for Oral Cancer: A Case-Control Study. S.J. LIM\* and H.K. KWON (*College of Dentistry, Yonsei University, Seoul, Korea*).

**0877** 10:15 Oral Cancer Examination: Examination Frequency and Patient Knowledge and Attitudes. C.A. FELDMAN\*, R. WILK, M. FATAHZADEH, D. CINOTTI, R.Z. LeGEROS, A. PATEL, S. PODELL, and M. SLIFER (*Consortium for the Prevention and Early Detection of Oral Cancer, New Jersey and New York, USA*).

**0878** 10:30 Prevalence and Correlates of Clinical Depression among Patients with Oral Cancer (OC), Dysplasia (OD), and Benign Oral Lesions (BL). S. REISINE\* and D.E. MORSE (*University of Connecticut School of Dental Medicine, Farmington, and New York University College of Dentistry, USA*).

**0879** 10:45 Prevalence of Smoking and Oral Hygiene Habits among Secondary School Boys in Riyadh City. K. ALMAS\* and F. MAROOF (*College of Dentistry, King Saud University, Riyadh, Saudi Arabia*).

---

**Seq#: 105 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 3**

**Cariology Research - Caries Risk, Maternal MS, S. mutans, Nursing Caries, Dentin Elasticity, Immunization**

**Chairpersons: I. Beyar and A. Dasanayake**

**0880** 9:00 Evaluation of Caries Predisposition during the Posterior Crossbite Correction. A.M.R. MORATO\*, V.C.V. SIQUEIRA, J.A. CURY, and F. BERZIN (*FOP-UNICAMP, Piracicaba/SP, and FO-PUC, Belo Horizonte/MG, Brazil*).

**0881** 9:15 Chlorhexidine Varnish Reduces Maternal Caries and Mutans Streptococci (MS). A.P. DASANAYAKE\*, H.W. WIENER, Y. LI, and P.W. CAUFIELD (*Specialized Caries Research Center, University of Alabama at Birmingham, USA*).

**0882** 9:30 *Streptococcus mutans* Colonization of "Self" and "Adopted" Rats. I. BEYAR\*, N. AKAL, and G. KULEKCI (*Departments of Pedodontics and Microbiology, Schools of Dentistry, Universities of Yeditepe, Gazi, and Istanbul, Turkey*).

**0883** 9:45 The Diversity of the Microflora of Nursing Caries Lesions. S. MARCHANT, S.R. BRAILSFORD, and D. BEIGHTON\* (*Cariology Research Group, GKT Dental Institute, London, UK*).

**0884** 10:00 Effects of Caries and Aging on Dentin Hardness and Elasticity. L. ZHENG\*, M. NAKAJIMA, and J. TAGAMI (*Department of Restorative Sciences, Tokyo Medical and Dental University, Japan*).

**0885** 10:15 Passive Immunotherapy against Mutans Streptococci. H. TAKEUCHI\*, K. FUKUSHIMA, H. SENPUKU, Y. NOMURA, E. MORITA, N. KANEKO, T. TOYOSHIMA, H. IDA, E. YOSHIKAWA, A. YANO, S. IMAI, T. NISIZAWA, and N. HANADA (*NIID, Nihon University at Matsudo, Dai-ichi Mutual Life Insurance, and BML Co. Ltd., Japan*).

**0886** 10:30 Immunization of Gnotobiotic Rats with Plasmid pCIA-P. M.W. FAN\*, Z. BIAN, Z.X. PENG, Y. ZHONG, B. PENG, Q. ZHANG, Z. CHEN, and B. FAN (*College & Hospital of Stomatology, Wuhan University, PR China*).

10:45 Discussion

---

**Seq#: 106 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 B**

**Craniofacial Biology - Developmental Biology**

**Chairpersons: R. Shah and S. Kapila**

**0887** 9:00 Over-expression of *NELL-1* Induces Craniosynostosis in a Transgenic Mouse Model. K. TING\*, X. ZHANG, H.F. LEE, F.Y. HU, and E. KWONG (*University of California, Los Angeles, USA*).

**0888** 9:15 *NELL-1* Induces Apoptosis in Fetal Calvarial Osteoblastic Cells. X. ZHANG\*, H.F. LEE, F.Y. HU, E. KWONG, and K. TING (*University of California, Los Angeles, USA*).

**0889** 9:30 Embryonic Palate Mesenchymal Cell Behavior Regulation by EGF and FGF. Y. SOENO\*, S. PELECH, and R.M. SHAH (*Nippon Dental University, Tokyo, Japan; and University of British Columbia, Vancouver, Canada*).

**0890** 9:45 Retinoic Acid Signaling in Patterning of the First Branchial Arch. S. LEE\* and J.M. RICHMAN (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada; and Department of Dentistry, Medical College, Gyeongsang National University, Chinju, Korea*).

**0891** 10:00 Expression Pattern of Fgf10 and its Regulatory Element in Oral Tissues. H. SASAKI\*, T. YAMAOKA, A. YASUE, H. OHUCHI, M. ITAKURA, S. NOJI, and M. NAGAYAMA (*University of Tokushima, Japan*).

**0892** 10:15 Identification of Heterozygous Germline Missense Mutation in the p63 Gene Underlying EEC Syndrome. A. YASUE\*, H. SASAKI, T. YAMAOKA, H. OHUCHI, T. TENGAN, H. SUNAGAWA, S. NOJI, M. ITAKURA, and K. MORIYAMA (*University of Tokushima, and Ryukyu University, Okinawa, Japan*).

**0893** 10:30 Msx1 Affects Proliferation and Differentiation of Cranial Neural Crest Cells. J. HAN, Y. ITO, and Y. CHAI\* (*Center for Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, USA*).

**0894** 10:45 Relaxin's Induction of Collagenase Directly Mediates the Loss of Collagen in Rabbit TMJ Disc Explants. T. NAQVI, Q. ZHANG, T. DUONG, and S. KAPILA\* (*University of California, San Francisco, USA*).

---

**Seq#: 107 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Conv Hall B**

**Dental Materials - Microstructural Evaluation of Dentin Adhesion**

**Chairpersons: F. Tay and T. Yamada**

**0895** 9:00 Dynamic ATR-FTIR and TEM Study of the Resin-Dentin Interface in Reactmer Bond. K. IKEMURA\*, F.R. TAY, M. NISHINO, N. NAGAI, S. HATANAKA, T. ENDO, and D.H. PASHLEY (*Department of Research and Development, Shofu Inc., Japan; University of Hong Kong, China; Toray Research Center, and Tokyo Institute of Technology, Japan; and Medical College of Georgia, Augusta, USA*).

**0896** 9:15 Adverse Interaction of All-in-One Adhesives with Photoaccelerators and Fillers in Light-cured Composites. F.R. TAY\*, K. IKEMURA, and D.H. PASHLEY (*University of Hong Kong, China; Shofu, Inc., Japan; and Medical College of Georgia, Augusta, USA*).

**0897** 9:30 Compromised Bonding of All-in-One Adhesives upon Delayed Activation of Light-cured Composites. N.M. KING\*, F.R. TAY, B.I. SUH, and D.H. PASHLEY (*University of Hong Kong, China; Bisco, Inc., Schaumburg, IL, and Medical College of Georgia, Augusta, USA*).

**0898** 9:45 Nanoleakage in Single-step Adhesives: What are We Really Testing? F.R. TAY, A. ITTHAGARUN, Y.F. MAK\*, E.L. PASHLEY, and D.H. PASHLEY (*University of Hong Kong, HKSAR, China; and Medical College of Georgia, Augusta, USA*).

**0899** 10:00 Analysis of the Enamel/Resin Interface with Micro-Raman Laser Spectroscopy. M. MIYAZAKI\*, H. ONOSE, and B.K. MOORE (*Nihon University, Tokyo, Japan; and Indiana University, Indianapolis, USA*).

**0900** 10:15 Fracture Toughness of Human Dentin. N. IWAMOTO\* and N.D. RUSE (*Medical and Dental University, Japan; and Biomaterials, UBC, Vancouver, Canada*).

**0901** 10:30 The FE-SEM Observation on the Interfacial Ultrastructure of the Two Fluoride-releasing Resin Bonding Systems. J. SUGIZAKI\*, S. HORIGUCHI, M. KATAUMI, M. MORIGAMI, and T. YAMADA (*Dental Clinic, Toranomon Hospital, Tokyo, Japan*).

10:45 Discussion

**Seq#: 108 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Conv Hall A**

**Dental Materials - Adhesion: Surface Treatments/Bracket Retention**

**Chairperson: Y. Katoh**

**0902** 9:00 Micro-mechanical and Chemical Study of Demineralized Dentin/Adhesive Mixtures. J.L. KATZ\*, T. NOMURA, A. WAGH, P. SPENCER, and Y. WANG (*Biomedical Engineering, Case Western Reserve University, Cleveland, OH, and UMKC School of Dentistry, Kansas City, MO, USA*).

**0903** 9:15 Reversal of Compromised Bonding in NaOCl or H<sub>2</sub>O<sub>2</sub> Treated Etched Dentin. S.C.N. LAI\*, Y.F. MAK, S.P. CHEUNG, R. OSORIO, M. TOLEDANO, R.M. CARVALHO, F.R. TAY, and D.H. PASHLEY (*University of Hong Kong, China; University of Granada, Spain; University of São Paulo, Brazil; and Medical College of Georgia, Augusta, USA*).

**0904** 9:30 Sodium Hypochlorite Affects Microstructure and Reduces Nanomechanical Properties of Etched Dentin. G.W. MARSHALL\*, N. YÜCEL, M. BALOOCH, J.H. KINNEY, S. HABELITZ, and S.J. MARSHALL (*University of California, San Francisco, and Lawrence Livermore National Laboratory, CA, USA*).

**0905** 9:45 Effect of Sodium Hypochlorite on Microleakage of Composite Restorations Bonded with a Polyalkenoic-containing Adhesive System. L. CEBALLOS, R. OSORIO\*, F.R. TAY, and M. TOLEDANO (*University of Granada, Spain; and University of Hong Kong, China*).

**0906** 10:00 Bracket Adhesion Strength as a Function of Enamel Condition and Adhesive: An *in vitro* Study. W.G. CHANG\*, Y.K. LEE, B.S. LIM, C.W. KIM, and T.V. VIJAYARAGHAVAN (*College of Dentistry, Seoul National University, Korea; and College of Dentistry, New York University, USA*).

**0907** 10:15 Effect of Periodontal Ligament on Orthodontic Bracket Bonding. M.K. AL-MUNAJED\*, P.H. GORDON, and J.F. McCABE (*Dental School, University of Newcastle upon Tyne, UK*).

**0908** 10:30 Clinical Comparison of Orthodontic Bracket Retention: Plasma Arc vs. Halogen Light Activation of Adhesive. J. KAKU\*, M. KAKU, N. EWOLDSEN, and K. HIROTA (*Private Practice, and GC Corp., Tokyo, Japan*).

10:45 Discussion

**Seq#: 109 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 6**

**Dental Materials - Alumina and Zirconia Ceramics**

**Chairpersons: J. Griggs and Y. Lee**

**0910** 9:00 Fracture Resistance of Posterior All-ceramic Zirconia Bridges. D. SUTTOR\*, H. HAUPTMANN, S. FRANK, S. HOESCHLER, and P. POSPIECH (*ESPE Dental AG, Seefeld, and LM University of Munich, Germany*).

**0911** 9:15 Mechanical Properties of In-Ceram Alumina and In-Ceram Zirconia. M. GUAZZATO\*, M. ALBAKRY, M.V. SWAIN, and J.G. IRONSIDE (*Biomaterials Research Unit, University of Sydney, Australia*).

**0912** 9:30 Reliability of Empress-2 and In-Ceram Zirconia Bridges. Comparison with Zirconia-TZP. H. LÜTHY\*, F. FILSER, O. LOEFFEL, M. SCHUMACHER, L. GAUCKLER, and P. SCHÄRER (*University of Zürich, and ETH, Zürich, Switzerland*).

**0913** 9:45 Flexural Strength of Hybrid Alumina/Zirconia Core Materials. Y. CHAIYABUTR\*, B. WU, and R. GIORDANO (*Goldman School of Dentistry, Boston University, MA, USA*).

**0914** 10:00 Fracture Toughness of Resin- and Glass-infused In-Ceram Alumina. C. CHAROEMRATROTE\* and R. GIORDANO (*Boston University, MA, USA*).

**0915** 10:15 Influence of Hydrolyzation on Mechanical Properties of a Hydrothermal Glass. J.A. GRIGGS\* and A. KISHEN (*Baylor College of Dentistry, Dallas, TX, USA; and Nanyang Technological University, Singapore*).

**0916** 10:30 Effect of Water on Mechanical Degradation of Dental Ceramics. Y.-K. LEE\* and K.-N. KIM (*College of Dentistry, Yonsei University, Seoul, Korea*).

10:45 Discussion

**Seq#: 110 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 2**

**Dental Materials - Glass Ionomers, Compomers, and Ceramic Restorations**

**Chairpersons: M. Edelberg and R. Erickson**

**0917** 9:00 Six Months' Evaluation of Atraumatic Restorative Treatment in Brazil. F. GARCÍA-GODOY, M.F.L. NAVARRO, E. BRESCIANI\*, W.L. CARVALHO, and L.C.G. PEREIRA (*Bauru Dental School-USP, Brazil*).

**0918** 9:15 Atraumatic Restorative Treatment in Permanent Teeth. Two-year Clinical Report. M.H. EDELBERG\* and C. BUS-TAMANTE (*Dental Materials Department, School of Dentistry, USAL/AOA, and "A. Bollini" Dental Hospital, La Plata, Argentina*).

**0919** 9:30 Remineralization of Carious Dentin by Glass Ionomer, an *in vivo* Study. H.C. NGO, M. FRASER\*, G. MOUNT, J. MCINTYRE, J. TUISUVA, and R. VON DOUSSA (*Dental School, Adelaide University, South Australia; and Dental Department, Fiji School of Medicine, Suva*).

**0920** 9:45 Clinical Evaluation of Secondary Caries Inhibition for Xerostomic Patients. R.L. ERICKSON\*, D. MCCOMB, R.E. WOOD, and W.G. MAXIMIOW (3M Co., St. Paul, MN, USA; and University of Toronto, Ontario, Canada).

**0921** 10:00 Resin-modified Glass-ionomer and Compomer Restorations in Primary Teeth. Five to Six Years' Results. V. QVIST\*, L. LAURBERG, A. POULSEN, and P.T. TEGLERS (*University of Copenhagen, and Værløse and Hillerød Public Dental Health Service, Denmark*).

**0922** 10:15 Clinical Performance of Dyract AP Compomer—2-year Results. Y. LUO\*, E.C.M. LO, D.T.S. FANG, R.J. SMALES, and S.H.Y. WEI (*Faculty of Dentistry, University of Hong Kong*).

**0923** 10:30 A 4-year Clinical Evaluation of Copy-milled Ceramic Inlays. J. NEO\*, C.L. CHEW, and A.U.J. YAP (*National University of Singapore*).

**0924** 10:45 Early Clinical Wear of Procera-Allceram Restorations and an Experimental Ceramic. M.K. ETMAN\*, T.F. WATSON, and M. WOOLFORD (*Conservative Dentistry, Guy's, King's & St. Thomas' Dental Institute, KCL, Guy's Hospital, London, UK*).

**Seq#: 111 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 301 B**

#### Diagnostic Systems - Radiography

**Chairpersons: Y. Hayakawa and M. Gale**

**0925** 9:00 Development of Maxillofacial CT with Cone-beam X-ray. K. MAKI\*, T. USUI, H. NAKANO, Y. SHIBASAKI, D. HATCHER, and A. MILLER (*Department of Orthodontics, Showa University, Tokyo, Japan; and Department of Growth and Development, University of California, San Francisco, USA*).

**0926** 9:15 Technical Factors Affecting Fractal Analysis of Periapical Radiographs. L.W. JOLLEY\*, S. MAJUMDAR, C. CASADY, A.J. MILLER, and S. KAPILA (*University of California, San Francisco, USA*).

**0927** 9:30 Child Patient Exposure with Rotational Panoramic Radiography. Y. HAYAKAWA\*, N. KOBAYASHI, K. KUROYANAGI, and K. NISHIZAWA (*Tokyo Dental College, and National Institute of Radiological Sciences, Chiba, Japan*).

**0928** 9:45 Validity of a New Method for X-ray Protection of Children. T. STAMM\*, N. MEIER, C. SEGERATH, and U. EHMER (*University of Muenster, Germany*).

**0929** 10:00 A Novel Filmholder for Endodontic X-rays Compliant with Rubber-dam Application. M.O. AHLERS\*, E. STOLICA, and U. PLATZER (*Restorative Dentistry and Periodontology, University of Hamburg, Germany*).

**0930** 10:15 Rubber-dam Frames: Radiopacity and Their Influence on X-ray Interpretation *in vitro*. M.O. AHLERS, A. TORRES, and U. PLATZER\* (*Restorative Dentistry and Periodontology, University of Hamburg, Germany*).

**0931** 10:30 Spatial Analysis from Radiograph Pairs Using Projection Geometry. M.S. GALE\* and H.H. MESSER (*School of Dental Science, University of Melbourne, Australia*).

**0932** 10:45 Evaluation of a Clinical System for Extra-oral Control of Geometry for Standardized Intra-oral Radiographs. M. TOMIC\* and W. ENGELKE (*Department of Prosthodontics, Albert-Ludwigs-University, Freiburg, Germany; and Department of Maxillo-Facial Surgery, University of Zürich, Switzerland*).

**Seq#: 112 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 9**

#### Implantology Research - Biomechanics/Interface Analysis

**Chairpersons: J. Lemons and J. Katz**

**0933** 9:00 Laboratory Models for Measuring *in vitro* Bone-to-Implant Attachment. J.E. LEMONS\* (*University of Alabama at Birmingham, USA*).

**0934** 9:15 Micromechanical/Property Study of Human Mandibular Cortical and Trabecular Bone. T. NOMURA, M.P. POWERS, E. GOLD\*, and J.L. KATZ (*Case Western Reserve University, Cleveland, OH, USA*).

**0935** 9:30 Acoustic Microscopic Analysis of Transmandibular Implants from Cadaver Mandible. T. NOMURA\*, M.P. POWERS, E. GOLD, and J.L. KATZ (*Case Western Reserve University, Cleveland, OH, USA*).

**0936** 9:45 Implant Osseointegration in Dog Mandibles as Measured by Dynamic Response. L.C. RAMP and R.L. JEFF-COAT\* (*School of Dentistry, University of Alabama, USA*).

**0937** 10:00 Fatigue Test of Two Commercially Available Implant Systems. A. KHRAISAT\*, R. STEGAROIU, S. SASAKI, S. KIMURA, Y. YAMANOI, and O. MIYAKAWA (*Niigata University, Japan*).

**0938** 10:15 Surface Microanalysis of Fractured Implants. J.K. LEE\*, J.H. JEONG, M.J. HAN, C.I. PARK, and H.C. CHOE (*University of Chosun, and Kwangyang College, Korea*).

**0939** 10:30 Peri-implant Bone-defects—An FE Investigation Taking into Account Bone-remodeling Processes. W. WINTER\*, S.M. HECKMANN, M.G. WICHMANN, and H.P. WEBER (*Institute of Applied Mechanics and Department of Prosthodontics, University of Erlangen-Nuremberg, Germany; and Department of Restorative Dentistry, Harvard School of Dental Medicine, Boston, MA, USA*).

**0940** 10:45 Stress Analysis on Implants with Different Positions and Inclinations. T.N.C. RAMOS\*, F. WATANABE, I. TAKAHASHI, K. UEDA, and Y. HATA (*University of the Philippines, Manila; and School of Dentistry, Nippon Dental University at Niigata, Japan*).

**Seq#: 113 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 8**

#### Microbiology/Immunology & Infection Control - Periodontopathogen Virulence

**Chairpersons: K. Ishihara and S. Dashper**

**0941** 9:00 A *Treponema denticola* 43-kDa Protein is Essential for Dentilisin Activity. K. ISHIHARA\*, H.K. KURAMITSU, T. MIURA, and K. OKUDA (*Tokyo Dental College, Chiba, Japan; and State University of New York, Buffalo, USA*).

**0942** 9:15 Cloning and Analysis of *Fusobacterium nucleatum* Apoptosis-inducing Genes. X. MA, M.J. KEMPF\*, A. JEWETT, N.-H. PARK, and W. SHI (*UCLA, Los Angeles, CA, USA*).

**0943** 9:30 Isolation of Novel Fimbria-deficient Mutants in *Porphyromonas gingivalis*. V.L. TI\*, Y. MURAKAMI, F. YOSHIMURA, and T. NOGUCHI (*Aichi-Gakuin University, Nagoya, Japan*).

**0944** 9:45 Characterization of a *Porphyromonas gingivalis* Heme Transport System. S.G. DASHPER\*, N. SLAKESKI, C. MOORE, M. HEALEY, and E.C. REYNOLDS (*School of Dental Science, University of Melbourne, Victoria, Australia*).

**0945** 10:00 Prevalence of *Porphyromonas gingivalis* fimA Genotypes in Periodontitis Patients. S. PRAJANEH\*, T. BEIKLER, K. BEERENS, and T.F. FLEMMIG (*Department of Periodontology, Khon Kaen University, Thailand; and Clinic of Periodontology, Westfalian-Wilhelms University, Muenster, Germany*).

**0946** 10:15 A LuxS-based Signaling System in *Porphyromonas gingivalis*. W.O. CHUNG\*, Y. PARK, R.J. LAMONT, R. MCNAB, B. BARBIERI, and D.R. DEMUTH (*University of Washington, Seattle, and University of Pennsylvania, Philadelphia, USA; and Eastman Dental Institute, London, UK*).

**0947** 10:30 The Role Chemotaxis Plays in Tissue Penetration of *Treponema denticola*. R. LUX\*, J.N. MILLER, N.-H. PARK, and W. SHI (*UCLA, Los Angeles, CA, USA*).

10:45 Discussion

**Seq#: 114 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 4**

#### **Mineralized Tissue - Amelogenesis/Enamel Proteins**

**Chairpersons: P. DenBesten and A. Kulkarni**

**0948** 9:00 Functional Analysis of Ameloblastin through Tooth Germ Organ Culture. D. MACHULE\*, P.K. DenBESTEN, T. TERASHIMA, O. BABA, and Y. TAKANO (*University of California at San Francisco, USA; and Tokyo Medical and Dental University, Japan*).

**0949** 9:15 Immunohistochemical Localization of Survival and Apoptosis Factors during Amelogenesis. S. TANASE\*, K. RYUZA-KI, and Y. TAMURA (*Department of Pediatric Dentistry, Asahi University School of Dentistry, Gifu, Japan*).

**0950** 9:30 Ameloblastoma Growth Mechanisms: Expression of Ki67, Bcl-2, and MMPs 2, 3, 9, and 20. P.K. DenBESTEN\*, C. GAO, W. LI, and J.A. REGEZI (*University of California at San Francisco, USA*).

**0951** 9:45 The Enamel Protein Amelogenin Binds to Cytokeratin-14. R.M.H. RAVINDRANATH\*, W.-Y. TAM, and A.G. FINCHAM (*School of Dentistry, University of Southern California, Los Angeles, USA*).

**0952** 10:00 Fluoride and pH Effects on MMP-20 Hydrolysis of Amelogenin Peptide. Y. YAN\*, W. LI, and P.K. DenBESTEN (*University of California at San Francisco, USA*).

**0953** 10:15 A Novel Tooth Phenotype in the Mice Carrying Targeted Deletion of Amelogenin Exon 2. A.B. KULKARNI\*, Z.A. YUAN, B. HALL, G. LONGENECKER, E. CHEN, T. THYAGARAJAN, T. SREENATH, J.T. WRIGHT, and C.W. GIBSON (*National Institute of Dental and Craniofacial Research, Bethesda, MD, University of Pennsylvania, Philadelphia, and University of North Carolina, Chapel Hill, USA*).

**0954** 10:30 Reduced Hydrolysis of Amelogenin May Result in X-linked Amelogenesis Imperfecta. W. LI\*, C.W. GIBSON, W. ABRAM, C. GAO, and P.K. DenBESTEN (*University of California at San Francisco, and University of Pennsylvania, Philadelphia, USA*).

**0955** 10:45 Amelogenin Gene Insertion Causes Hypoplastic Amelogenesis Imperfecta Phenotype. P.S. HART, M.J. ALDRED, P.J.M. CRAWFORD, T.C. HART, and J.T. WRIGHT\* (*University of Pittsburgh, USA; Royal Children's Hospital, Melbourne, Australia; University of Bristol, UK; and University of North Carolina, Chapel Hill, USA*).

**Seq#: 115 Friday, June 29, 9:00 am - 11:00 am**  
**Poster Discussion Session, Makuhari Messe: Room 303**

#### **Nutrition - Nutrition, Foods, and Health**

**Chairpersons: P. Moynihan and A. Choudhury**

9:00 Poster Viewing

**0956** 9:30 Sugars Consumption in English Adolescents in 1980, 1990, and 2000. A.J. RUGG-GUNN\*, E.S. FLETCHER, A.J. ADAMSON, and P.J. MOYNIHAN (*Newcastle University, UK*).

**0957** 9:40 Review of Methods Used to Estimate Non-milk Extrinsic Sugars. P.J. MOYNIHAN\*, S.A.M. KELLY, C. SUMMERBELL, and A.J. RUGG-GUNN (*University of Newcastle-upon-Tyne, and University of Teesside, Middlesbrough, UK*).

**0958** 9:50 Survey of Dietary Habits and Occlusion among Senior College Participants. S. NOMURA\*, T. TAZAWA, M. ASAZUMA, A. IGARASHI, and R. WATANABE (*Niigata University, and Niigata Women's College, Japan*).

**0959** 10:00 Obesity in Special Olympians: Prevalence and Relationship to Oral Health. R. TOUGER-DECKER\*, P. MATHE-SON, and M. SLIFER (*NJ Dental School, University of Medicine and Dentistry of NJ, USA*).

**0960** 10:10 Bleeding Gum and Serum  $\beta$ -carotene and Vitamin C Level in Type II Diabetics in Bangladesh. A.R. CHOUDHURY\*, K. JAHAN, N.G. BANIK, and A.K. AZAD KHAN (*BIRDEM, Diabetic Association of Bangladesh, Dhaka*).

**0961** 10:20 Grapefruit Influences Clinical and Paraclinical Parameters in Periodontitis Patients. H. STAUDTE\*, B.W. SIGUSCH, A. PFITZNER, G. KLINGER, and E. GLOCKMANN (*Department of Conservative Dentistry, University of Jena, Germany*).

**0962** 10:30 Fluoride Intake in Ethiopian Children Assessed by Duplicate Diet Collection. M.K. MALDE\*, L. ZERIHUN, and K. BJORVATN (*University of Bergen, Norway; and Addis Ababa University, Ethiopia*).

**0963** 10:40 Fluoride Content in Bottled Drinking Water, Juices, and Carbonated Soft Drinks in Mexico City. M.D. JIMÉNEZ-FARFÁN\*, A. GALICIA-SOSA, C. LEDESMA-MONTES, M.C. SANSÓN-ORTEGA, and J.C. HERNÁNDEZ-GUERRERO (*U.N.A.M., Cd. Universitaria, México, DF*).

10:50 Discussion

**Seq#: 116 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 A**

#### **Oral Health Research - Caries, Fluoridation, Obesity, Sealants, Metanalysis, Tobacco, Electroconvulsive Therapy, Hemophilia**

**Chairpersons: G. Dahllöf and B. Söder**

**0964** 9:00 Fluoride, Dental Caries, and Fluorosis in Saudi Arabia Central Province. A.M. ALDOSARI\*, E.S. AKPATA, N. KHAN, and A. WYNE (*King Saud University, Riyadh, Saudi Arabia*).

**0965** 9:15 Calculation of the Significant Caries Index. M. NISHI\* and D. BRATTHALL (*WHO Collaborating Centre, Faculty of Odontology, University of Malmö, Sweden*).

**0966** 9:30 Increased Prevalence of Dental Caries with Increasing Severity of Obesity in Adolescents. G. DAHLÖF\*, B. AL-KHALILI, A. JÖNSSON, and C. MARCUS (*Karolinska Institutet, Stockholm, Sweden*).

**0967** 9:45 Introduction to Meta-regression Using Root Canal Treatment Outcome as an Example. J.D. LEWSEY\*, M.S. GILTHORPE, and K. GULABIVALA (*Eastman Dental Institute, University College London, UK*).

**0968** 10:00 A Survey of Sealant Prevalence and Dental Caries Experience. S.J. RA, J.Y. KIM, and J.B. KIM\* (*College of Dentistry, Pusan National University, and Research Institute for Oral Biotechnology, Pusan, Korea*).

**0969** 10:15 Improving Oral Outcomes in Electroconvulsive Therapy. S.A. ROCHE\* and A.J. MORRIS (*University of Birmingham, UK*).

**0970** 10:30 Comparative Study of Oral Hygiene Status in Children with Hemophilia and Healthy Children. M. MIELNIK-BŁASZCZAK\* (*Paedodontics Department, Medical University of Lublin, Poland*).

**0971** 10:45 Cigarette Smoking, Snuff Habits, and Oral Hygiene in Adults. S. WICKHOLM\*, B. SÖDER, P.-Ö. SÖDER, and B. KLINGE (*Karolinska Institutet, Stockholm, Sweden*).

**Seq#: 117 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 301 A**

**Oral Medicine & Pathology - Oral Cancer: Pathological Processes in Man and Experimental Animals**

**Chairpersons: Y. Abiko and R. Jordan**

**0972** 9:00 Increased Skp2 Protein Expression is Associated with Reduced p27<sup>kip1</sup> during Progression from Oral Epithelial Dysplasia to Invasive Carcinoma. R.C.K. JORDAN\*, M.S. LIM, W. KREK, and J.M. SLINGERLAND (UCSF, SF, CA, and University of Utah, Salt Lake City, USA; Friedrich Miescher Institut, Basel, Switzerland; and S&WCHSC, University of Toronto, Canada).

**0973** 9:15 p53 and MDM2 in Tobacco/Betel-chewing-associated Oral Squamous Cell Carcinoma. M. SHWE\*, G. CHIGUCHI, S. YAMADA, B. MYINT, K.K. MAUNG, M. TAKAGI, T. AMAGASA, and N. TSUCHIDA (Tokyo Medical and Dental University, Japan; and Institute of Dental Medicine, Myanmar).

**0974** 9:30 Expression of Bcl-2 Gene Family in Leukoplakia and Squamous Cell Carcinoma. J.I. YOOK\*, S.Y. LIM, J.H. YOON, Y.S. KEUM, J. HUH, K.H. LEE, and J. KIM (College of Dentistry, Yonsei University, Seoul, Korea).

**0975** 9:45 Cyclin D1 Expression for Risk Assessment of Malignant Transformation in Oral Leukoplakia. J.H. YOON\*, J.Y. BAEK, Y.H. JUNG, J.M. YOON, S.Y. JOO, I.H. CHA, J.C. HONG, J.I. YOOK, and J. KIM (College of Dentistry, Yonsei University, Seoul, Korea).

**0976** 10:00 Localization Pattern of Human Beta-defensin 2 in Oral Epithelium. Y. ABIKO\*, M. NISHIMURA, T. ARAKAWA, T. TAKUMA, I. MIZOGUCHI, and T. KAKU (Health Sciences University of Hokkaido, Japan).

**0977** 10:15 NF-kappa-B-dependent Cytokine Levels in Saliva of Patients with Oral Squamous Cell Carcinoma. V. HO, C.S. MILLER, J. BURT, N.L. RHODUS\*, and F. ONDREY (University of Minnesota, Minneapolis, USA).

**0978** 10:30 Effect of Local Administration of Palm-oil-derived Carotenes and Vitamin E on DMBA-induced Hamster Cheek Pouch Carcinomas. C.H. SIAR\*, K.H. NG, C.H. CHUAH, N.M. TAHIR, A. SINNIHAH, and S. AMBU (University of Malaysia, and Institute for Medical Research, Kuala Lumpur, Malaysia).

**0979** 10:45 Hematological Alterations in Rats with Experimental Oral Carcinogenesis in Commissure. T. NISHIKAWA\*, S. YOSHIDA, K. TOMINAGA, K. MASUNO, K. HORII, K. KAKUDO, and A. TANAKA (Osaka Dental University, Japan).

**Seq#: 118 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 10**

**Oral & Maxillofacial Surgery - Maxillofacial Trauma/Third Molar Surgery**

**Chairpersons: J. Shepherd and V. Shetty**

**0980** 9:00 Gunshot Wounds to the Face in a U.S. Civilian Population. J.L. McQUINTER\*, S.J. ROTHENBERG, D. PAN, G.A. DINKINS, R.L. GIBBS, and R.D. LEATHERS (Charles R. Drew University of Medicine and Sciences, LA, CA, USA).

**0981** 9:15 Predictors of Adverse Psychological Sequelae Following Orofacial Injury. S.M. GLYNN, J. LENTO, J. ASARNOW, R. ASARNOW, V. SHETTY\*, K. BROWN, and T. BELIN (Neuropsychiatric Institute, School of Dentistry, UCLA, and Charles Drew University, Los Angeles, CA, USA).

**0982** 9:30 Trends in Assault Injury. V. SIVARAJASINGAM\* and J.P. SHEPHERD (Violence Research Group, Department of Oral and Maxillofacial Surgery, University of Wales College of Medicine, Cardiff, UK).

**0983** 9:45 The Relation among Injury, Offending, and Illness. J.P. SHEPHERD\*, D.P. FARRINGTON, and A.J.C. POTTS (Department of Oral and Maxillofacial Surgery, University of Wales College of Medicine, Cardiff, UK).

**0984** 10:00 Functional Stability of Osteosynthesis in Diacapitular and High Condylar Fractures—Comparison of Screws vs. Pins or Plating Techniques. A. NEFF\*, A. KOLK, T. LUTZ, and H.-H. HORCH (Department of Oral and Maxillofacial Surgery, University of Technology, Munich, Germany).

**0985** 10:15 Disc Mobility and Functional Results after Fractures of the Condylar Head: Comparison of Surgical vs. Conservative Treatment. F. NEFF\*, A. NEFF, A. KOLK, and H.-H. HORCH (Department of Oral and Maxillofacial Surgery, University of Technology, Munich, Germany).

**0986** 10:30 Economic Factors Affecting the Optimal Management Strategy for Mandibular Third Molars. M.R. BRICKLEY\*, J.P. SHEPHERD, and M.J. EDWARDS (Clinical Decisions Research Group, Dental School, University of Wales, Cardiff, UK).

**0987** 10:45 Changes in Life Quality Following Third Molar Surgery. C. McGRATH\*, M.B. COMFORT, E.C.M. LO, and Y. LUO (Faculty of Dentistry, University of Hong Kong).

**Seq#: 119 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 302**

**Periodontal Research - Periodontal Immune Responses - Gene Polymorphisms**

**Chairpersons: R. Page and W. Grimm**

**0988** 9:00 Antibody Responses to Gingipain R of *Porphyromonas gingivalis* in Periodontitis Patients. S. INAGAKI\*, K. ISHIHARA, J. TAKAHASHI, T. NAKAGAWA, S. YAMADA, and K. OKUDA (Tokyo Dental College, Chiba, Japan).

**0989** 9:15 Genomic Organization of the *Porphyromonas gingivalis* rag Pathogenicity Island. S.C. FAWELL\*, J. ADUSE-OPOKU, L.M.C. HALL, and M.A. CURTIS (Barts and the London School of Medicine and Dentistry, UK).

**0990** 9:30 Heat Shock Protein 60-reactive Th 1 Accumulation in Periodontitis Lesion. K. YAMAZAKI\*, Y. OHSAWA, K. TABETA, H. ITOH, K. UEKI, T. NAKAJIMA, and H. YOSHIE (Niigata University, Japan).

**0991** 9:45 Increased Fcγ-receptor Responsiveness in Neutrophils from Patients with Periodontitis. I.M. FREDRIKSSON\*, A. GUSTAFSSON, and B. ÅSMAN (Karolinska Institute, Huddinge University Hospital, Sweden).

**0992** 10:00 Genotyping of 3 Putative Periodontal Pathogens by AP-PCR Method. Y. HUANG\*, M. UMEDA, Y. TAKEUCHI, M. ISHIZUKA, and I. ISHIKAWA (Tokyo Medical and Dental University, Japan).

**0993** 10:15 Genetic Risk Assessment in Down's Syndrome Periodontal Disease. W.-D. GRIMM\*, P. CICHON, J. HAGEMANN, P. LANGENDIJK, S. KLAR, and H. VAN DER HOEVEN (University of Witten/Herdecke, Germany).

10:30 Discussion

**Seq#: 120 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 5**

#### **Prosthodontics Research - All-ceramic Restorations**

**Chairpersons: S. Rinke and H. Yatani**

**0994** 9:00 Marginal and Internal Fit of CAD/CAM Ceramic Molar Crown Copings. W. APHOLT\*, A. BINDL, and W.H. MÖRMANN (Division of Aesthetic and Computer Restorations, Center for Dental and Oral Medicine, University of Zürich, Switzerland).

**0995** 9:15 3-year Clinical Evaluation of In-Ceram CAD/CAM Core Crowns. A. BINDL\* and W.H. MÖRMANN (Division of Aesthetic and Computer Restorations, Center for Dental and Oral Medicine, University of Zürich, Switzerland).

**0996** 9:30 Fabrication Time and Occlusal Discrepancy of Cerec3/Scan Partial Crowns. T. RÜGGE\*, A. BINDL, and W.H. MÖRMANN (Division of Aesthetic and Computer Restorations, Center for Dental and Oral Medicine, University of Zürich, Switzerland).

**0997** 9:45 Fitting Accuracy of All-ceramic Posterior Crowns Produced with Three Different Systems. S. RINKE\*, F. BEHI, and A. HÜLS (ZMK-Klinik, Abt. Prothetik, University Göttingen, Germany).

**0998** 10:00 Fracture Strength of All-ceramic Anterior Fixed Partial Dentures. K. LUDWIG\*, M. KERN, and S. KLOPFER (Christian-Albrechts University at Kiel, Germany).

**0999** 10:15 Fracture Strength of All-ceramic Crowns Luted with Two Bonding Procedures. A. ATTIA\*, M. KERN, and A. KHAMIS (Christian-Albrechts University at Kiel, Germany; and Mansoura University, Egypt).

**1000** 10:30 Procera AllCeram Crowns Followed for 5-10.5 Years. P.A. ÖDMAN\* and B. ANDERSSON (Göteborg University, and Specialist Dental Service, Mölndal, Sweden).

**1001** 10:45 Long-term Clinical Evaluation of Occlusal Porcelain Onlays. H. YATANI\*, E. YOSHIDA, H. MINAKUCHI, K. HATANAKA, and T. KUBOKI (Department of Fixed Prosthodontics, Okayama University Dental School, Japan).

**Seq#: 121 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 11**

#### **Pulp Biology - Pulp Regeneration**

**Chairpersons: A. J. Smith and H. Ohshima**

**1002** 9:00 Enamel Matrix Derivative Induces Reparative Dentin Formation. Y. NAKAMURA, S. GESTRELIUS\*, L. HAMMARSTRÖM, K. MATSUMOTO, E. LUNDBERG, H. EKDAHL, and S.P. LYGSTADAAS (Showa University, Tokyo, Japan; Biora AB, Malmö, and Karolinska Institutet, Stockholm, Sweden).

**1003** 9:15 Expression of Hsp 25 in the Process of Pulpal Regeneration. H. OHSHIMA\*, A. SHIMIZU, N. NAKAKURA-OHSHIMA, and T. MAEDA (Niigata University, Japan).

**1004** 9:30 Amelin Expression during Reparative Dentin Formation. A. SPAHR\*, I. SLABY, L. HAMMARSTRÖM, and S.P. LYGSTADAAS (University of Ulm, Germany; Biora AB, Sweden; and University of Oslo, Norway).

**1005** 9:45 Immunohistochemistry of Bone Sialoprotein and Osteopontin during Reparative Dentinogenesis. Q. ZHANG\*, M.W. FAN, Z. BIAN, Z. CHEN, and Q. ZHU (College & Hospital of Stomatology, Wuhan University, PR China).

**1006** 10:00 Expression of Osteonectin mRNA and during Reparative Dentin Formation. Z. CHEN\*, M.W. FAN, Z. BIAN, B. FAN, B. PENG, and J.R. LI (College & Hospital of Stomatology, Wuhan University, PR China).

**1007** 10:15 Pulpal Injury and Repair Responses in Restored Human Teeth. A.J. SMITH\*, I. ABOUT, R. REMUSAT, J.-C. FRANQUIN, and P.E. MURRAY (School of Dentistry, University of Birmingham, UK; and Faculté d'Odontologie, Marseille, France).

**1008** 10:30 Effects of 4-META/MMA-TBB Resin on Apoptosis during Pulp Wound Healing. C. KITAMURA\*, Y. OGAWA, T. MOROTOMI, and M. TERASHITA (Kyushu Dental College, Kitakyushu, Japan).

**1009** 10:45 An Evaluation of the Thermoplasticized Gutta-Percha Technique for Young Permanent Incisors. M.S. DUGGAL\* and H. AL-SAYED (Department of Pediatric Dentistry, Leeds Dental Institute, UK).

**Seq#: 122 Friday, June 29, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 7**

#### **Salivary Research - Saliva/Disease**

**Chairpersons: W. Niedermeier and M. Humphreys-Beher**

**1010** 9:00 Buffer Capacity of Parotid Saliva in Primary Sjögren's Syndrome. A.M. PEDERSEN\*, A. BARDOW, and B. NAUNTOFTE (School of Dentistry, University of Copenhagen, Denmark).

**1011** 9:15 Interferon Gamma Controls the Initiation of Sjögren's Syndrome-like Disease in the NOD Mouse Model. M.G. HUMPHREYS-BEHER, S. DIGGS, S. CHA\*, H. NAGASHIMA, and A.B. PECK (University of Florida, Gainesville, USA).

**1012** 9:30 Chewing Efficiency in Xerostomic vs. Controls. W. NIEDERMEIER\* and B. MAYER (Department of Prosthetic Dentistry, University of Cologne, Germany).

**1013** 9:45 Analysis of Salivary Cholesterol from Caries-resistant and Caries-susceptible by HPLC. D.F. ZHAO\*, X.H. ZHENG, Q. WANG, and M.S. RUAN (University of Xi'an Jiaotong, Shannxi, China).

**1014** 10:00 A Soft-layer Electrokinetic Model of Salivary Pellicle Conditioning Films. H.J. BUSSCHER\*, H.C. VAN DER MEI, D.J. WHITE, and J. ZOLADZ (University of Groningen, The Netherlands; and Procter & Gamble, Mason, OH, USA).

**1015** 10:15 Influence of Dietary Components on the Wettability of Pellicle-coated Enamel. H.C. VAN DER MEI\*, D.J. WHITE, A. BAIG, H.J. KAMMINGA-RASKER, J. KNIGHT, and H.J. BUSSCHER (Department of Biomedical Engineering, University of Groningen, The Netherlands; and Procter & Gamble Company, Mason, OH, USA).

10:30 Discussion

**Seq#: 123 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Pulp Biology - Endodontic Treatment**

**1017** Treatment of Acute Pulpitis with High-frequency Alternating Current—A Clinical Study. H. VÖGELE\* and R. HICKEL (Department of Medical Care, German Air Force, Kloster Lechfeld, and Department of Restorative Dentistry, LM-University, Munich, Germany).

**1018** Endodontic Failure: Contributing Factors. L. LIN\*, N. CHUGAL, and G.T.-J. HUANG (Section of Endodontics, School of Dentistry, UCLA, USA).

**1019** Histopathological Evaluation of Root Canal Sealer in Subhuman Primates. N.P. LOUW\*, C.H. PAMEIJER, and G. NORVAL (University of Stellenbosch, Tygerberg, South Africa; and University of Connecticut, Farmington, USA).

- 1020** Repair of Furcation Perforations: A Microleakage Study. R.A.S. FIDEL\*, S.R. FIDEL, R.M. BRANDÃO, and T.R. SABA (*Faculty of Dentistry, UERJ/UNIGRANRIO, Brazil*).
- 1021** Continuous Drug-delivery into the Periapical Region of Rat Upper Molars Using Osmotic Minipump. S. SATO\*, I. KATSUUMI, Y. SHIMAZU, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).
- 1022** Er:YAG Laser as Co-adjuvant of the Intracanal Medication Phase in Endodontic Therapy. D.P. RALDI, C.F. MALHEIROS, C.V.G. AMORIM\*, and J.L. LAGE-MARQUES (*Ibirapuera University, and University of São Paulo, Brazil*).
- 1023** TEM Observation of Rat Dentin-Pulp Complex Following Er:YAG Laser Irradiation. H. INOUE\*, T. IZUMI, and K. WATANABE (*Fukuoka Dental College, Japan*).
- 1024** Immunohistochemical Observation of Pulpal Response to Er:YAG Laser Irradiation. K. TANABE\*, K. YOSHIBA, N. YOSHIBA, M. IWAKU, and H. OZAWA (*Faculty of Dentistry, Niigata University, Japan*).
- 1025** Microcracks and Preparation Time during Sonic and Ultrasonic Retrocavity Preparation. P. PESSINIS and J.M. COIL\* (*University of British Columbia, Vancouver, Canada*).
- 1026** Evaluation of Different Root Canal Filling Materials in Primary Teeth. C. PERCINOTO\*, R.S. NERY, and P.F.E. BERNABÉ (*School of Dentistry of Araçatuba, UNESP, Brazil*).
- 1027** The Accuracy of Root-ZX in Root Canals. H.K. HWANG\* and S.H. PARK (*Department of Conservative Dentistry, College of Dentistry, Chosun University, Kwangju, Korea*).
- 1028** Replica Technique for Examining the Lateral Canals of Upper Molars. S. TREESOLRAT\*, S. TIMPAWAT, and N. VONGSAVAN (*Department of Operative Dentistry, and Physiology and Biology, Faculty of Dentistry, Mahidol University, Thailand*).
- 1029** An Investigation of First Molar Tooth Length and Root Canal Configuration. P. OYUN-ENKH\*, N. SAWADA, H. SUDA, and B. OYUNBAT (*School of Dentistry, Mongolian National Medical University, Ulaanbaatar; and Graduate School, Tokyo Medical and Dental University, Japan*).
- 1030** Thermometry of High-speed Cavity Preparation Techniques with Different Water Flows. B.N. CAVALCANTI\*, C. OTANI, and S.M. RODE (*School of Dentistry, UNESP, and Physics Department, ITA, São José dos Campos, São Paulo, Brazil*).
- 1031** The Effects of Eugenol Lubricant on the Displacement of Thermafil Gutta Percha. C.Q. LEE\*, C.M. COBB, and G. MERRITT (*School of Dentistry, University of Missouri-Kansas City, USA*).
- 1032** WITHDRAWN

**Seq#: 124 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Prosthodontics Research - Fixed Prosthodontics: Impressions, Crown Adaptation, Retention, Color**

- 1033** Internal Pressure during Corrective Impression Procedures with Various Spillways. Ch. GEBBE\*, M. GOTTWALD, A. SCHULZ, and W. NIEDERMEIER (*Department of Prosthetic Dentistry, University of Cologne, Germany*).
- 1034** Internal Pressure during Corrective Impression Procedures with Various Materials. M. GOTTWALD\*, Ch. GEBBE, A. SCHULZ, and W. NIEDERMEIER (*School of Oral Medicine, University of Cologne, Germany*).
- 1035** Marginal Accuracy and Fracture Strength of Targis/Vectris with Different Preparation. L.R. CHO\* and H.Y. SONG (*University of Kangnung, Korea*).

- 1036** Effect of Venting on Marginal Gaps of Partial Gold Veneer Crowns. R. STEVENSON\*, A.A. CAPUTO, C. AVILA, and L. AGHAJANI (*Restorative Dentistry, and Biomaterials Science, UCLA School of Dentistry, USA*).
- 1037** Marginal Fitness of Titanium-Gold Alloy and Castable Ceramics. K. WATANABE\*, H. MIURA, M. MATSUMURA, H. MOCHIZUKI, and T. SATO (*Tokyo Medical and Dental University, Japan*).
- 1038** Efficiency of Radiographic Examination in the Evaluation of the Adaptation of Full Cast Crowns. G.C. SANTOS, Jr.\*, M.J.M.C. SANTOS, A.P. FREITAS, L.G.C. BASTOS, and A.N. CAVALCANTI (*Federal University of Bahia, Brazil*).
- 1039** Marginal Fit of Crowns Made with an Accelerated-type Investment. M. YAMAUCHI\*, Y. MORI, J. TAN, J. KISHII, M. SAKAI, and T. NAGASAWA (*Prosthodontics, Asahi University, Gifu, Japan*).
- 1040** Cerec Camera System and Internal Adaptation of Cerec Crowns. S.H. MOU\*, T.I. CHAI, J.S. WANG, and Y.-Y. SHIAU (*National Taiwan University, Taipei*).
- 1041** Effects of Occlusal Loading on the Long-term Stability of Luting Materials *in vitro*. A. JANKE\*, A. SCHULZ, and W. NIEDERMEIER (*Department of Prosthetic Dentistry, University of Cologne, Germany*).
- 1042** Interfacial Stress Analysis between Posterior Resin-bonded Bridge and Teeth. T.S. LIN, C.L. LIN\*, K.H. CHANG, and C.H. CHANG (*Institute of Biomedical Engineering, National Cheng-Kung University, and Graduate Institute of Dental Sciences, Kaohsiung Medical University, Taiwan*).
- 1043** Retention Mechanism of Electroformed Telescopic Bridges. S. HARTLAGE\* and F.-J. FABER (*School of Dental Medicine, University of Cologne, Germany*).
- 1044** Friction Forces and Coefficients of Friction in Telescopic Crowns. G. DIEDRICHS\*, A. SCHEFFER, and U. STUETTGEN (*Heinrich-Heine-University, Duesseldorf, Germany*).
- 1045** A 2-year Follow-up Study of Machine-fabricated Titanium Bridges. G. HANSES\*, J.-I. SMEDBERG, J. EKENBÄCK, and K. NILNER (*Department of Prosthodontic Dentistry, S:t Erik Hospital, Public Dental Service, Stockholm, Sweden*).
- 1046** Confidence in Shade Matching Dependent on the Shade Guide. C. RÖLLEKE\*, F.-J. FABER, and M. SCHNICKMANN (*School of Dental Medicine, University of Cologne, Germany*).
- 1047** Effects of Light Sources on Color Determination. P. İMİRZALIOĞLU\* (*Department of Prosthodontics, Faculty of Dentistry, Baskent University, Ankara, Turkey*).
- 1048** Influence of Ceramic Layering on Color of CICERO CAD/CAM Restorations. A. ĐOZIĆ\*, E. BÜCHLER, M.P. AARNTS, J.M. van der ZEL, and A.J. FEILZER (*Department of Dental Materials Science, ACTA, Amsterdam, and Cicero Dental Systems b.v., The Netherlands*).

**Seq#: 125 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Dental Materials - Adhesion: Tooth Substrate Surface Conditions**

- 1049** Effect of Salivary Contamination of Teeth on Bonding Efficacy of Various Dentin Bonding Systems. K.J. RYU\*, H.Y. CHOI, S.J. PARK, G.W. CHOI, and K.K. CHOI (*Kyung-Hee University, Seoul, Korea*).
- 1050** Effect of Saliva Contamination on pH Value and Bond Strength on Dentin. N. HIRAISHI\*, Y. KITASAKO, T. NIKAIDO, S. NONURA, and J. TAGAMI (*Tokyo Medical and Dental University, and Horiba Ltd, Kyoto, Japan*).

**1051** Effect of Airbrasion on Tensile Bond Strength of Dentin Adhesives. R. KISHIKAWA\*, N. IWAMOTO, N. INAI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**1052** Effect of Dentin Grinding on Bond Strength of Simplified-step Adhesives. K. KOASE\*, H. INOUE, S. INOUE, T. TANAKA, H. KOMATSU, and H. SANO (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**1053** Effects of Provisional Cements on the Shear Bond Strength of Various Adhesive Bonding Systems on Dentin. F. AKALTAN\* and A.N. ÖZDEN (*Faculty of Dentistry, University of Ankara, Turkey*).

**1054** Repair Strength of the Differently Cured Composite Restorations. K.M. ABDELAZIZ\*, A.M. SHEBL, H.A. NIAZI, and Y.A. IBRAHIM (*Mansoura Faculty of Dentistry, Mansoura Faculty of Engineering, and Ain Shams Faculty of Dentistry, Egypt*).

**1055** Bond Strength and Micro-morphology of Dentin-Adhesive Interfaces Formed by One-bottle-type Adhesives. Y.J. PARK, C.H. LIM\*, Y.R. LEE, D.H. JU, and H.R. RAWLS (*Chonnam National University, Kwangju, Korea; and University of Texas Health Science Center, San Antonio, USA*).

**1056** Adhesion of 4-META/MMA-TBB Resin to Enamel Treated with Self-etching Primer. T. HAYAKAWA\*, K. KIKUTAKE, and K. NEMOTO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1057** Influence of Environmental Conditions on Bond Strength of One-application Systems. A. RIKUTA\*, M. MIYAZAKI, H. ONOSE, and B.K. MOORE (*Nihon University, Tokyo, Japan; and Indiana University, Indianapolis, USA*).

**1058** Variations in Bond Strength of Surface-treated Dentin to Composite Resin. M.S. HUNG\*, C.H. LI, M.T. LI, S.J. DING, and C.C. HSU (*Chung-Shan Medical & Dental College, Taichung, Taiwan*).

**1059** Effect of EDTA Condition on Dentin Adhesion by Self-etching Primer. Y. NISHITANI\*, T. YAMADA, Y. TORII, J. DOI, K. SUZUKI, and M. YOSHIYAMA (*Department of Operative Dentistry, and Department of Biomaterials, Okayama University Dental School, Japan*).

**1060** Effect of Glutaraldehyde on Resin Bonding to Er:YAG Laser-irradiated Dentin. A. KAMEYAMA\*, E. KAWADA, T. AMAGAI, Y. ODA, and Y. HIRAI (*Tokyo Dental College, Chiba, Japan*).

**1061** Bond Strength of Resin to Discolored Dentin after Amalgam Removal. C. HARNIRATTISAI\*, P. SENAWONGSE, and J. TAGAMI (*Mahidol University, Thailand; and Tokyo Medical and Dental University, Japan*).

**1062** Effect of Thickness of Indirect Resin Composite on Fracture Resistance. H. TASHIRO\*, K. FURUKAWA, N. INAI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**Seq#: 126 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Adhesion-interface Treatments/Pulpal Response**

**1063** Direct-capping Effect of Two-step Bonding System and Resin-hybridized Ca(OH)<sub>2</sub>. Y. KATOH\*, C. JIN, and K. SHINKAI (*Nippon Dental University School of Dentistry at Niigata, Japan; and Yan Bian Medical College, China*).

**1064** In vivo Antibacterial Effect of Dentin Primer Incorporating MDPB. T. KANEKO\*, S. IMAZATO, N. EBI, A. KURAMOTO, Y. NOIRI, and S. EBISU (*Graduate School of Dentistry, Osaka University, Japan*).

**1065** Effect of Topical Application of Fluoride Gel on Secondary Caries Inhibition. S. TOBA\*, M. OKUDA, P.N.R. PEREIRA, T. NIKAIIDO, and J. TAGAMI (*Tokyo Medical and Dental University, Japan; and University of North Carolina at Chapel Hill, USA*).

**1066** Analysis of Chemical Bonding Potential of Poly-acids to Enamel and Dentin. R. FUKUDA\*, Y. YOSHIDA, B. VAN MEERBEEK, P. LAMBRECHTS, G. VANHERLE, M. OKAZAKI, and H. SHINTANI (*Hiroshima University, Japan; and Catholic University, Leuven, Belgium*).

**1067** Effect of NaOCl Deproteinization on Dentin Wettability and Roughness of Prime&Bond NT. G. GOMES\*, J. PERDIGÃO, F.S. AGUILERA, R. OSORIO, and M. TOLEDANO (*University of Granada, Spain; and University of Minnesota, Minneapolis, USA*).

**1068** Effect of Calcium Hydrogen Phosphate on Wet Bonding. T. TOIDA\* and N. NAKABAYASHI (*Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

**1069** SEM Observation of the Resin-Dentin Interface Formed by One-step Adhesive Systems. T. MASEKI\*, T. KIMISHIMA, Y. NARA, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Japan; and Forsyth Institute, Harvard School of Dental Medicine, Boston, MA, USA*).

**1070** Surface Treatment of Dentin with GLUMA and an Iron-protoporphyrin-protein Complex. N. BABA\*, Y. TAIRA, H. MATSUMURA, and M. ATSUTA (*School of Dentistry, Nagasaki University, Japan*).

**1071** Nanohardness of Resin-Dentin Interface Using an Antibacterial Adhesive System. N. AKIMOTO\*, G. YOKOYAMA, M. HANABUSA, and A. KOHNO (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1072** Change of Microhardness of Fluoride-releasing One-step Adhesives. N. HARADA\*, I. URABE, S. PHANTHAVONG, H. SONODA, T. NIKAIIDO, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**1073** Change of Microhardness of Fluoride-releasing Resin Materials. I. URABE\*, N. HARADA, S. PHANTHAVONG, H. SONODA, T. NIKAIIDO, and J. TAGAMI (*Graduate School of Tokyo Medical and Dental University, Japan*).

**1074** Bond Strength of an Antibacterial Adhesive System to Carious Dentin. K. OHMORI\*, N. AKIMOTO, A. TAKAO, N. MAEDA, and A. KOHNO (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1075** Bonding of Resin to Dentin Primed with an Iron-protoporphyrin-protein Complex. Y. TAIRA\*, N. BABA, K. SOENO, K. YOSHIDA, H. MATSUMURA, and M. ATSUTA (*School of Dentistry, Nagasaki University, Japan*).

**Seq#: 127 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Cements - Bonding**

**1076** Retentive Properties of Different Luting Cements. D. GEMALMAZ\* and Ş. ERGIN (*Marmara University, Istanbul, Turkey*).

**1077** Bonding of the Celay Porcelain with Various Ceramic Bonding Systems. T. IDE\*, N. TANOUE, H. KATO, M. ATSUTA, and H. MATSUMURA (*School of Dentistry, and Hospital of Dentistry, Nagasaki University, Japan*).

**1078** Effects of Acid Concentration and Etching Time on Microtensile Bond Strength of Resin/Ceramic. W. KUPHASUK\*, L. PANICHJAROEN, and W. KANCHANAVASITA (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand*).

**1079** Nanostructure of Ceramo-Metallic Bond Using Gold Alloy and Titanium. Y. TANAKA\*, I. WATANABE, E. MIURA, T. SHIRAISHI, M. ATSUTA, and K. HISATSUNE (*Nagasaki University, Japan*).

**1080** Influence of Surface Treatment on Bond Strength for Ceramic Abutment. Y. HAGIWARA\*, N. HINOKIYAMA, M. KOIZUMI, and T. IGARASHI (*School of Dentistry, Nihon University, Tokyo, Japan*).

**1081** Bonding Durability of Three Ceramic Surface Treatments—A Longitudinal Evaluation. R.M. FOXTON\*, M. NAKAJIMA, P.N.R. PEREIRA, J. TAGAMI, and H. MIURA (*Tokyo Medical & Dental University, Japan; and School of Dentistry, UNC, Chapel Hill, USA*).

**1082** Shear Bond Strength of Ceramic Bonded Adhesively to Metal Surfaces. J. MUNACK\*, W. GEURTSEN, and G. HILLMANN (*Dental School, Medical University Hannover, Germany*).

**1083** Bond Strength of Luting Cements to Synthoceram Ceramic. H.D. DE BOER\*, M.A.J. VAN WAAS, A.J. DE GEE, and A.J. FEILZER (*Department of Dental Materials Science and Department of Oral Function, ACTA, Amsterdam, The Netherlands*).

**1084** Bond Strength to Zirconia Ceramic with Different Luting Cements. O. LOEFFEL\*, H. LÜTHY, F. FILSER, L. GAUCKLER, P. SCHÄRER, and CH. HÄMMERLE (*University of Zürich, and ETH, Zürich, Switzerland*).

**1085** Tensile Strengths of Two Ceramic Crowns and Five Cements. J.C. CHANG, S.H. KOH\*, J.M. POWERS, and A. CANTERBURY (*Houston Biomaterials Research Center, University of Texas-Houston Dental Branch, USA*).

**1086** Bonding Properties of Dental Zirconia Ceramics (Denzir) with Various Cements. M. UO\*, G. SJÖGREN, A. SUNDH, F. WATARI, and M. BERGMAN (*Hokkaido University, Japan; Umeå University, and Decim AB, Sweden*).

**1087** Effect of Lingual Veneering Porcelain on Fracture Resistance of In-Ceram Crown. P. SALIMEE\* and V. NA-RANONG (*Chulalongkorn University, Bangkok, Thailand*).

**1088** Effects of Different Ceramic Firing Cycles on cp Titanium-Ceramic Flexural Bond Strength under Cyclic Fatigue Loading. C.C. HSU\*, Y.P. LEE, and C.C. HONG (*Institute of Dental Materials, Chung Shan Medical & Dental College, Taichung, Taiwan*).

**Seq#: 128 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Titanium, Corrosion, Biocompatibility**

**1089** The Effects of Fluoride and Albumin on Corrosion of Titanium. K. IDE\*, M. HATTORI, K. HASEGAWA, M. YOSHINARI, E. KAWADA, and Y. ODA (*Tokyo Dental College, Chiba, Japan*).

**1090** Electrochemical Measurement of Titanium with Culturing Murine Fibroblasts L929. S. HIROMOTO\* and T. HANAWA (*National Research Institute for Metals, Tsukuba, Japan*).

**1091** Ions Released from Dental Amalgams in Contact with Titanium in Galvanic Corrosion. Y. TAKADA\*, S.-D. LIM, K. ASAMI, A. KAWASHIMA, T. HANAWA, K.-H. KIM, and O. OKUNO (*Tohoku University, and National Research Institute for Metals, Japan; Taegu Polytechnic College, and Kyungpook University, Korea*).

**1092** Effect of Topical Fluoride on Surfaces of Ti-based Orthodontic Wires. E. WATANABE\*, I. WATANABE, T. OKABE, and G. GOTO (*Nagasaki University, Japan; and Baylor College of Dentistry, Texas A&M University System HSC, Dallas, USA*).

**1093** Comparison of Corrosion Behavior among 4 Grades of Commercially Pure Titanium. W. LIM\*, C.J. ANDRES, Y. OSHIDA, T. SHIMIZU, and M. ITO (*School of Dentistry, Indiana University, USA; Daido Steel Co., Nagoya, and Matsumoto Dental University, Nagano, Japan*).

**1094** Comparison of Corrosion Behavior of Cast, Rolled, and Metal-injected Pure Titanium. C. KUPHASUK\*, Y. OSHIDA, and M. ITO (*Mahidol University, Bangkok, Thailand; Indiana University, Indianapolis, USA; and Matsumoto Dental University, Nagano, Japan*).

**1095** Galvanic Corrosion Behaviors of cp Ti Coupled with Three Different Precious Dental Alloys in Ringer's Solution and 1% Lactic Acid. T. YOSHIDA\*, M. ITO, and Y. OSHIDA (*Matsumoto Dental University, Nagano, Japan; and School of Dentistry, Indiana University, Indianapolis, USA*).

**1096** The Influence of Fluorides on the Electrochemical Interaction between Titanium and Amalgam Couples. F. Di CARLO\*, L.F. RONCONI, G. GAMBARINI, M. ANDREASI BASSI, and M. QUARANTA (*Università "La Sapienza" Roma, Italy*).

**1097** Electrochemical Study on Microbiological Corrosion of Dental Alloys. J.-C. CHANG\*, R.L. GREGORY, Y. OSHIDA, C.J. ANDRES, and F. FARZIN-NIA (*Indiana University, Indianapolis, and Ormco Corp., Glendora, CA, USA*).

**1098** Surface Characterization of Various Modified Pure Titanium Materials. Y.J. LIM\*, Y. OSHIDA, and M. KOWOLIK (*Kangbuk Samsung Hospital Dental Center, Seoul, Korea; and School of Dentistry, Indiana University, Indianapolis, USA*).

**1099** Cytotoxicity of Novel Titanium Alloys. I. WATANABE, J. LIU\*, H. SHIMIZU, P.E. LOCKWOOD, J.C. WATAHA, Z. CAI, L. CARRASCO, and T. OKABE (*School of Dentistry, Nagasaki University, and Fukuoka Dental College, Japan; Medical College of Georgia, Augusta, and Baylor College of Dentistry, TX A&M University System HSC, Dallas, USA*).

**1100** Cytotoxicity of Free-machining Titanium and Experimental Ti-10Cu Alloy. J.M. BAE\*, K.N. KIM, M. HATTORI, K. HASEGAWA, M. YOSHINARI, E. KAWADA, and Y. ODA (*Tokyo Dental College, Chiba, Japan; and Yonsei University, Seoul, Korea*).

**1101** Screening Methods for Allergy Associated with Dental Metals. S. YAMANAKA\*, T. NOMURA, K. OHTA, and Y. TAKAESU (*Tokyo Dental College, Chiba, Japan*).

**1102** The Efficacy of the Patch Test Prior to Allergen Control Treatments. H. HAMANO\*, K. WATANABE, T. KOIZUMI, S. AWATCHANAKAN, T. MASUDA, K. UOSHIMA, H. KITAZAKI, H. HANI, M. MATSUMURA, T. OHYAMA, and H. MIURA (*Tokyo Medical and Dental University, Japan*).

**1103** Galvanic Corrosion Behavior of Orthodontic Wires Jointed with Silver Solder. J.W. JAHNG\*, Y. TAKADA, O. OKUNO, and H. MITANI (*Division of Orthodontics and Dental Biomaterials, Tohoku University, Japan*).

**Seq#: 129 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Bleaching/Refractory Materials/General**

**1104** New Bleaching Materials' Influence on Color Behavior of Bovine Enamel. T. PLEIN\*, R. LANG, M. ROSENTRITT, and G. HANDEL (*Department of Prosthetic Dentistry, University of Regensburg, Germany*).

**1105** Effect of Light Energy on Hydrogen Peroxide Tooth Bleaching. K.K.Y. LUK\*, L.E. TAM, and M. HUBERT (*University of Toronto, Canada*).

**1106** Two-year Clinical Evaluation of Bleaching Systems: A Spectrophotometric Analysis. M. ANSELMINI\* and G. DONDI (*dall'OROLOGIO (Division of Conservative Dentistry, University of Bologna, Italy)*).

**1107** Effect of NaOH on Bleaching Capacity of Bleaching Products. R. TERATA\*, K. OBARA, and M. KUBOTA (*School of Dentistry, Iwate Medical University, Japan*).

**1108** Bleaching of TiO<sub>2</sub> Photocatalyst. T. NONAMI\*, K. ISHIBASHI, T. ISHIBASHI, O. KONDOU, and K. TAKAMI (National Industrial Research Institute of Nagoya, Japan).

**1109** Dimensional Change of Refractory Materials Used for All-ceramic Laminate Veneers. D.G. WILDGOOSE\* and R.B. WINSTANLEY (School of Clinical Dentistry, University of Sheffield, UK).

**1110** Properties of Experimental Ammonia-free Phosphate-bonded Investments. Y. TAMAKI\*, A. OZAWA, Z. ZHANG, and T. MIYAZAKI (School of Dentistry, Showa University, Tokyo, Japan).

**1111** Dental Application of Mold Filling and Solidification Simulations to Titanium Castings. K. TAJIMA\*, Y. NAGAMATSU, H. KAKIGAWA, and Y. KOZONO (Materials Science, Kyushu Dental College, Japan).

**1112** Measurement of Setting Expansion in Phosphate-bonded Investment Materials. J.A. YEARN, K. GENTENS, G.A. COWPER, and C.H. LLOYD\* (GC Europe N.V. Leuven, Belgium; and University of Dundee, Scotland, UK).

**1113** Evaluation of the Radiopacity of Fiber-reinforced Resin Posts. W.J. FINGER, W. AHLSTRAND\*, and U.B. FRITZ (University of Cologne, and University of Aachen, Germany; and Private Practice, Stockholm, Sweden).

**1114** Effect of Fluoride-releasing Liner on Decalcified Dentin. T. ITOTA\*, Y. IWAI, M. OKAMOTO, Y. TASHIRO, S. NAKABO, M. NAGAMINE, Y. TORII, and M. YOSHIYAMA (Department of Operative Dentistry, Okayama University Dental School, Japan).

**1115** Porosity and Shear Strength of Resin-modified Glass-ionomer Cement. P. KOUTSIKAS\*, T. BEREKALLY, and J.A. KAIDONIS (Dental School, Adelaide University, South Australia).

**1116** Surface-modified Hydroxyapatite as Carrier for Drug Delivery System. T. MATSUMOTO\*, M. INOUE, S. YAMAGUCHI, H. NAKAO, Y. HAMADA, and J. TAKAHASHI (Osaka University, Japan).

**1117** Investigation of RFGD Ammonia Gas Plasma to Sterilize PLGA. Q.T.N. TAN\*, J.M. KARP, M.S. SHOICHET, and J.E. DAVIES (University of Toronto, ON, Canada).

**Seq#: 130 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Anesthesiology Research - Pain, Local Anesthesia, Sedation, and General Anesthesia**

**1118** Stellate Ganglion Block for Improving Symptoms of Acute Myofascial Pain. K. NOMURA\*, M. KASAHARA, K. FUKUDA, T. ICHINOHE, and Y. KANEKO (Department of Dental Anesthesiology, Tokyo Dental College, Chiba, Japan).

**1119** Effect of Kampo Medicine on Chronic Oral Pain. M. KASAHARA\*, K. FUKUDA, T. ICHINOHE, and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1120** Analgesic Effect of Adenosine for Phantom Tooth Pain. K. FUKUDA\*, M. KASAHARA, T. NOMA, T. ICHINOHE, Y. KOUKITA, and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1121** Touch and Pain Thresholds in Oral Mucosa and Facial Skin. K. MIZUTANI\*, T. SHIBAJI, M. KAWASHIMA, S. MASHU, K. TODA, and N. SUZUKI (Orofacial Pain Management and Cognitive Neurobiology, Graduate School, Tokyo Medical and Dental University, Japan).

**1122** The Effects of the Injection Speed of Local Anesthesia. H. MAMIYA\*, N. KATAGIRI, T. ICHINOHE, and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1123** Cromakalim Prevents Felypressin-induced Reduction in Myocardial Tissue Oxygen Tension. H. AGATA\*, T. ICHINOHE, and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1124** Evaluation of Recovery from Conscious Sedation Using Dynamic Balance Test. T. FUJISAWA\*, A. KUROZUMI, S. SUZUKI, Y. KIMURA, A. IIDA, N. KAMEKURA, and K. FUKUSHIMA (University of Hokkaido, Sapporo, Japan).

**1125** Is Propofol Effective for Intravenous Conscious Sedation in Elderly Patients? T. NOMA\*, K. FUKUDA, T. ICHINOHE, Y. KOUKITA, and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1126** Reduction of Potent Respiratory Pathogens by Hygienic Treatment in Patients Undergoing Endotracheal Anesthesia. M. OKUDA\*, Y. KANEKO, T. ICHINOHE, K. OKUDA, and K. ISHIHARA (Tokyo Dental College, Chiba, Japan).

**1127** Aminophylline Reduces Recovery Time from Propofol/Nitrous Oxide Anesthesia. S. SAKURAI\*, A.F. FUKUNAGA, Y. KANEKO, and T. ICHINOHE (Tokyo Dental College, Chiba, Japan).

**1128** Post-operative Emesis after Nitrous Oxide-Propofol-Fentanyl Anesthesia. T. ICHINOHE\* and Y. KANEKO (Tokyo Dental College, Chiba, Japan).

**1129** Chiral HPLC Analysis of Local Anesthetic Injection Components. F. CANCAÑÓN, B.F. PAULUS, G.A. THOMPSON, and J.R. AMMANN\* (US Army Dental Research Detachment, Great Lakes, IL, USA).

**1130** Comprehensive Dental Treatment of Healthy and Handicapped Children under General Anesthesia in Kuwait. H. IBRICEVIC\*, Q. AL-JAME, and S. HONKALA (Faculty of Dentistry, Dental Center, Kuwait).

**Seq#: 131 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Behavioral Sciences/Health Services Research - Oral Health Status: Special Populations**

**1131** Validation of an Acculturation Scale for Haitian-Americans in New York City. G.D. CRUZ\*, R. SHORE, S.L. BARROW, M. TAVARES, and R.Z. LeGEROS (College of Dentistry, and School of Medicine, NYU, and Forsyth Institute, Boston, USA).

**1132** Changing Oral Health and Related Behavior in Children during Transformation. P.E. PETERSEN, M. WIERZBICKA\*, F. SZATKO, E. DYBIŻBAŃSKA, K. RUCIŃSKA, and M. ZAWADZIŃSKI (WHO Regional Office for Europe, Medical University of Warsaw, and Medical University of Łódź, Poland).

**1133** A Longitudinal Analysis of Unmet Need for Dental Care among HIV-infected Medical Patients. I.D. COULTER\*, M. MARCUS, C. MAIDA, J.R. FREED, N. GUZMÁN-BECERRA, C. DER-MARTIROSIAN, R. ANDERSEN, W. CUNNINGHAM, and M. SHAPIRO (HCSUS, RAND/UCLA School of Dentistry, USA).

**1134** Relationship between Workers' Behavior and Oral Health Status. K. SHINADA\*, Y. FUJITA, and Y. KAWAGUCHI (Tokyo Medical and Dental University, Japan).

**1135** The Oral Health and Dental Care of Special Olympians. P. MATHESON, C.A. FELDMAN\*, M. SLIFER, M. GINIGER, and S. PERLMAN (UMDNJ-New Jersey Dental School, Newark, USA).

**1136** Oral Health Survey of Adult Migrant Workers in Kanagawa, Japan. J. OTSURU\*, Y. MAKI, S. ABE, and Y. KAWAGUCHI (Tokyo Medical and Dental University, and Tokyo Dental College, Japan).

**1137** Oral Health Problems and Treatment Needs for Mongolian Rural Schoolchildren. M. MATSUE\*, I. MATSUE, J. BILGEE, and Y. BOLORMAA (*Department of Periodontology, Nihon University School of Dentistry at Matsudo; and Mongolian State Dental Center*).

**1138** Oral Health in a Japanese-Brazilian Population in Brazil: A Socio-dental Evaluation. L.E.M. CHINELLATO\*, N.E. TOMITA, L.J. FRANCO, J.R.P. LAURIS, R. de A. PERNAMBUCO, M.N. JUSTAMANTE, T.R. GARCIA, M.A. TASSO, H.M. ROSA, and J.H. CHUN (*Bauru School of Dentistry-USP, Paulista School of Medicine, and Hospital of Rehabilitation of Craniofacial Anomalies, Brazil*).

**1139** Oral Health of Building Construction Workers in Bauru, Brazil. N.E. TOMITA\*, L.E.M. CHINELLATO, J.R.P. LAURIS, C.M. KUSSANO, H.J. MENDES, and M.T.V. CARDOSO (*Bauru School of Dentistry, USP, Brazil*).

**1140** Oral Manifestations and Their Determinants in 237 HIV-infected Thai Patients. A. IAMAROON\*, D. KERDPON, S. PONGSIRIWET, K. PANGSOMBOON, K. KAMPOO, S. SRET-RIRUTCHAI, and V. ROBISON (*Chiang Mai University, and Prince of Songkla University, Thailand; and Johns Hopkins University, USA*).

**1141** Community-based Oral Health Survey Standardized in Iwate, Japan. T. SATOH\*, D. INABA, and M. YONEMITSU (*Iwate Dental Association, and Preventive Dentistry, Iwate Medical University, Morioka, Japan*).

**1142** Trauma to Incisor Teeth of Adolescents in Ireland, 1984 to 1997. D. O'MULLANE\*, H.P. WHELTON, and T. HOLLAND (*Oral Health Services Research Centre, University Dental School, Wilton, Cork, Ireland*).

**1143** Dental Identification of Exhumed Bodies in Croatia. H. BRKIC\*, D. STRINOVIC, V. PETROVECKI, J.M. SLAUS, and P.M. ABSHERE (*University of Zagreb, Croatia; and Oklahoma City, USA*).

**1144** Caries Prevalence in Warao Indigenous Children Entering the Program of Oral Health Promotion. M. HENNING\* (*Delta Project, School of Dentistry, Central University of Venezuela*).

**Seq#: 132 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Educational Research - Educational Research-General**

**1145** Student Perceptions of Life as a General Dental Practitioner—A Comparison between Manchester and Sydney. J.P. BRADLEY and A.C. MELLOR\* (*Unit of Primary Dental Care, University Dental Hospital, Manchester, UK*).

**1146** Computer-assisted Instruction and Learning in Periodontal Education. I.-C. WANG\* and M.K. JEFFCOAT (*School of Dentistry, University of Alabama, Birmingham, USA*).

**1147** Community-based Education and Training at the University of Pretoria. J. KROON\* (*School of Dentistry, University of Pretoria, South Africa*).

**1148** Development of Training Machine for Tooth Preparation of Full Crown. S. KASAHARA\*, Y. OKUYAMA, M. MURAMOTO, and K. KIMURA (*Tohoku University, Sendai, and UNISN INC., Japan*).

**1149** Comparison of Conventional and a New Admission Criteria to KSU College of Dentistry, Riyadh. T. AL-JABREEN\*, K. ALMAS, and S. AL-SHAMMARANI (*King Saud University, Riyadh, Saudi Arabia*).

**1150** Evaluation of Dental Education by Students in TMDU. J. TSURUTA\*, K. UOSHIMA, I. MORIO, and K. ETO (*Tokyo Medical and Dental University, Japan*).

**1151** Trends in US Dental Hygiene Education: A Ten-year Perspective. R.W. VALACHOVIC\*, P. ZARKOWSKI, and N.K. HADEN (*American Dental Education Association, Washington, DC, USA*).

**1152** Applicant and Enrollment Trends in US Dental Schools, 1989-1999. P. ZARKOWSKI\*, R.G. WEAVER, N.K. HADEN, and R.W. VALACHOVIC (*American Dental Education Association, Washington, DC, USA*).

**Seq#: 133 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Oral Health Research - Toothbrushes, Interdental Brushes, Malodor Rinses, Chewing Gum, Toothpastes, Enamel Pellicle**

**1153** Plaque Removal Efficacy of Toothbrushes by Difference in Bristle End. E. SEKINO\*, T. KATO, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1154** Study on Size Classification for Interdental Brushes. S. NAKAYAMA\*, E. SEKINO, T. KATO, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1155** Effects of Toothpaste Containing Pyrophosphate on Stained Pellicle Removal. D. UNO\*, T. ONIKI, T. WATANABE, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1156** Stain Removal Efficacy of Whitening Paste Containing Sodium Tripolyphosphate. N. TAKEI\*, M. ARAI, T. WATANABE, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1157** Removal of Salivary Pellicle by Pyrophosphate, Phenyl, and Phenoxy Compounds. A. UCHIYAMA\*, S. INOUE, Y. OCHIAI, and K. KANEKO (*Lion Corporation, Kanagawa, and Kyushu University, Fukuoka, Japan*).

**1158** Effects of Mouthrinse and Toothpaste on Bad Breath and on Oral Anaerobic Bacteria. T. TANAKA\*, T. SATO, S. NAKAMURA, and M. NIWA (*Department of Preventive and Community Dentistry, Nippon Dental University, Japan*).

**1159** An Ergonomic Study on Toothbrush Handle for Easy Gripping. N. KANAMARU\*, T. KATO, K. KANEKO, Y. SHIMOMURA, K. IWANAGA, and T. KATSUURA (*Lion Corporation, Tokyo, and Chiba University, Japan*).

**1160** Laboratory Interproximal Access Efficacy of Two Rippled Toothbrushes. T. ISAKA\*, Y. NAKANISHI, T. KATO, K. KANEKO, X. SHI, and S.L. YANKELL (*Lion Corporation, Tokyo, Japan; and University of Pennsylvania, Philadelphia, USA*).

**1161** Effect of Tongue Coating Removal by Toothpaste on Malodor. T. FUKASAWA\*, C. METSUGI, T. YAMAMOTO, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1162** Effect of Chewing Gum Containing Granules on Plaque Removal and Inhibition. I. FUKUDA\*, M. IWATA, H. KADOYA, K. KANEKO, A. TSURUMOTO, and C. KITAMURA (*Lion Corporation, Tokyo, and Tsurumi University School of Dental Medicine, Kanagawa, Japan*).

**1163** Relationship between Passage Hole Diameter and Load in Interdental Brushes. K. TAKEDA\*, N. TSURUKAWA, and H. MATSUMOTO (*Sunstar Inc., Takatsuki, Osaka, Japan*).

**1164** Resistance of Toothbrush Handles to Impact and Bending Forces. H. SATO\*, A. MIYAZAKI, T. SUGIMOTO, H. MATSUMOTO, and H. OGURA (*Nippon Dental University School of Dentistry at Niigata, and Sunstar Inc., Osaka, Japan*).

**1165** Clinical and Microbiological Effect of an Ultrasonic Toothbrush. S. HAGIWARA\*, Y. KANATSUKA, and M. TANAKA (*Periodontology, Department of Hard Tissue Engineering, Graduate School, Tokyo Medical and Dental University, Japan*).

**1166** Efficacy of Ultrasonic Powered Toothbrush in an Adult Orthodontic Population. B. SLIWOWSKA\*, G. GASSMANN, and W.-D. GRIMM (*University of Witten/Herdecke, Germany*).

**Seq#: 134 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Cariology Research - Dentifrice, Fluoride, Fluoride Treatments, Recurrent Caries Inhibition, Remineralization, Management of Caries, Carisolv**

**1167** *In vitro* Fluoride Uptake Study of an Anti-hypersensitivity Toothpaste. B.R. SCHEMEHORN, G.D. WOOD, R.M. BUCH, and H.M. FARES\* (*School of Dentistry, Indiana University, Indianapolis, and SmithKline Beecham Consumer Healthcare, Parsippany, NJ, USA*).

**1168** *In vitro* Recurrent Caries Inhibition Effects by a Fluoride-containing Re-wetting Agent. A. ITTHAGARUN\*, F.R. TAY, N.M. KING, J.S. WEFEL, and D.H. PASHLEY (*University of Hong Kong, HK SAR; University of Iowa, and Medical College of Georgia, Augusta, USA*).

**1169** *In vivo* Secondary Caries Inhibition by a One-step Bonding Resin. H. SONODA\*, M. OKUDA, Y. SASAFUCHI, Y. KITASAKO, T. NIKAIIDO, M. OTSUKI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**1170** *In situ* Evaluation of a Dentifrice Formulation with Low Fluoride Concentration. P.E.C. PERES, A.A. DEL BEL CURY, and J.A. CURY\* (*Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).

**1171** Alkali-soluble Fluoride Deposition on Enamel after Professional Topical Fluoride Application of Gel, Foam, and Varnish. M. FUJIMAKI\*, A.F. PAES LEME, Y.B.O. LIMA, C.S. QUEIROZ, N.C.L.A.V. GONÇALVES, M.J. GOMES, F.C. KOZLOWSKI, and J.A. CURY (*UNICAMP, Brazil*).

**1172** Acid Resistance of Enamel after Remineralization with Bicarbonate *in vitro*. K. TANAKA\* and Y. IJIMA (*School of Dentistry, Nagasaki University, Japan*).

**1173** Adsorption Mechanism of Fluoride Ions onto the Surface of Hydroxyapatite. K. TAJIMA\*, Y. IMAI, T. HORIUCHI, T. YOKOH, and K. KANEKO (*Kanagawa University, Yokohama, and Lion Corporation, Tokyo, Japan*).

**1174** Fluoride Veneers Reduce Solubility of Synthetic Carbonated Hydroxyapatite in Acid. H. DONG\*, W. LEE, and J.D.B. FEATHERSTONE (*University of California, San Francisco, USA*).

**1175** Effects of Fluoride Release from Glass Ionomers on Tooth Structure. K. TAKAHASHI\*, M. ITO, and M. OGAWA (*Nippon Dental University, Tokyo, Japan*).

**1176** The Effect of Air Abrasion on the Preservation of Dentin. F. GOSTIAN\* and W. NIEDERMEIER (*Department of Prosthetic Dentistry, University of Cologne, Germany*).

**1177** A Novel Technique for Managing Carious Primary Molars. D.J.P. EVANS, C.A.P. SOUTHWICK, J.I. FOLEY, N.P.T. INNES\*, S.H. PAVITT, and N. HALL (*Dental Hospital and School, University of Dundee, Scotland, UK*).

**1178** Children's Anxiety during Caries Removal: Carisolv™ Compared with Dental Drill. N. ATTARI\*, G.J. ROBERTS, and P. ASHLEY (*Eastman Dental Institute and Hospital for Oral Health Sciences, London, UK*).

**1179** Effects of the Amino Acids in Carisolv™ on Carious Dentin. K. TONAMI\*, T. TAKAGI, K. ARAKI, and N. KUROSAKI (*Tokyo Medical and Dental University, Japan*).

**1180** Effects of Fluoride-releasing Materials on Caries Inhibition. K. NILASRI\*, P. SENAWONGSE, M. OKUDA, M. OTSUKI, and J. TAGAMI (*Department of Operative Dentistry, Mahidol University, Thailand; and Cariology and Operative Dentistry, Tokyo Medical and Dental University, Japan*).

**Seq#: 135 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Cariology Research - Green Tea, Root Caries**

**1181** Bacteriostasis of CTP in Liquids of Various pH Concentrations. J.P. LIANG\* and M. CHU (*Shanghai No. 9 People's Hospital affiliated with Shanghai Second Medical University, China*).

**1182** Effects of Tea Mineralization on the Presence of Bioavailable Ions. A. CZAJKA-JAKUBOWSKA, J. STOPA\*, and J. SIEPAK (*Karol Marcinkowski University of Medical Sciences, and Adam Mickiewicz University, Poznań, Poland*).

**1183** Effects of Green Tea Extract Modification on Dental Plaque Formation. A. CZAJKA-JAKUBOWSKA\* and J. STOPA (*Karol Marcinkowski University of Medical Sciences, Poznań, Poland*).

**1184** Micro-organisms Isolated from Inactive Hard Lesions of Root Caries *in vivo*. T. WAKUI\*, M. YAJIMA, M. NAKANO, Y. MOMOI, and N. MAEDA (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1185** Characteristic of Primary Root Caries Lesions Classified According to Color. A. BRODZIKOWSKA\* (*Department of Conservative Dentistry, Medical University of Warsaw, Poland*).

**1186** A Cohort Study of Coronal and Root Caries Incidence in Adults. N. SUGIHARA\*, Y. MAKI, Y. TAKAESU, A. KUOKAWA, S. TSUCHIYA, and Y. MURASHI (*Tokyo Dental College, Chiba, and Lion Foundation for Dental Health, Japan*).

**1187** *In vitro* Growth, Acidogenicity, and Cariogenicity of Predominant Bacteria in Root Caries. S. SHEN, L.P. SAMARANAYAKE, H.K. YIP, and G. TANG\* (*Faculty of Dentistry, University of Hong Kong, SAR, China*).

**1188** Bactericidal Effect of Antibacterial Primer Impregnated into Demineralized Dentin. A. KURAMOTO\*, S. IMAZATO, S. EBISU, A.W.G. WALLS, and R.R.B. RUSSELL (*Graduate School of Dentistry, Osaka University, Japan; and Dental School, University of Newcastle upon Tyne, UK*).

**1189** Measurement of Natural Root Surface Mineral Changes Using Confocal Microscopy. M. TORO\*, M. FONTANA, and C. GONZÁLEZ-CABEZAS (*Indiana University, Indianapolis, USA*).

**Seq#: 136 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Implantology Research - Animal Studies - Osseointegration and Remodeling**

**1190** Study of Interface Bone and Microcirculation of Implants under Occlusion. Y. KISHI\*, T. TAKAHASHI, B. AZUMA, M. MATSUO, J. HASEGAWA, and K. TAKAHASHI (*Department of Oral Anatomy, Kanagawa Dental College, and Department of Dental Materials Science, School of Dentistry, Aichi-Gakuin University, Japan*).

**1191** Changes in Bone and Vasculature around Metal Crown Implants. F. SUWA\*, A. TAKEMURA, I. TODA, Y. TAMADA, and H. IKE (*Department of Anatomy, Osaka Dental University, Japan*).

**1192** Histological Observation of New Titanium Endosseous Dental Implant. Y. TAKAHASHI\*, H. TANAKA, B. AZUMA, J. HASEGAWA, and Y. KAMEYAMA (*Aichi-Gakuin University, Nagoya, Japan*).

**1193** A Clinical and Histological Evaluation of Titanium Mini-implants as Anchors for Orthodontic Intrusion in Dogs. S. SAITO\*, M. OHMAE, T. MOROHASHI, H.K. SEKI, K. YAMASAKI, S. YAMADA, T. OKANO, and Y. SHIBASAKI (Showa University, Tokyo, Japan).

**1194** Modified Custom-made Root Analogue Titanium Implants. A Study in Monkeys. R.-J. KOHAL, M. BÄCHLE\*, M.B. HÜRZELER, G. KLAUS, and J.R. STRUB (University of Freiburg, Germany; University of Houston, USA; and Private Practice, Munich, Germany).

**1195** Enhancement of Osseointegration by CCEF Stimulation Followed by Functional Loading. M. OCHI\*, T. SHIGINO, Y. HIROSE, O. NAKADE, H. HIRAYAMA, T. KAKU, and K. SAKAGUCHI (Department of Fixed Prosthodontics and Oral Pathology, School of Dentistry, Health Sciences University of Hokkaido, Japan; and Tufts University, Boston, MA, USA).

**1196** In vivo Assessment of the Resonance Frequency of Dental Implants. C.-T. LIN\*, H.-M. HUANG, S.-Y. LEE, C.-L. CHIU, L.-C. PAN, and H.C. CHENG (Graduate Institute of Oral Rehabilitation Sciences, School of Medical Technology, and Dental Department of Taipei Medical University Hospital, Taipei Medical University, Taiwan).

**Seq#: 137 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Salivary Research - Signal Transduction

**1197** Comparison of GABA Receptor Subtypes on the Inhibitory Effect of Salivation. M. KAWAGUCHI\*, M. OKUBO, K. SAWAKI, H. YAMAGISHI, and R. HARA (Tokyo Dental College, Chiba, Japan).

**1198** Characterization of Isoquinoline Binding Site on Peripheral-type Benzodiazepine Receptor. H. YAMAGISHI\*, M. WATANABE, K. YAZAKI, K. SAWAKI, and M. KAWAGUCHI (Tokyo Dental College, Chiba, Japan).

**1199** SNI-2011-induced Persistent Increase in the Amount of AQP5 in APM. N. INOUE\*, Y. ISHIKAWA, and H. ISHIDA (School of Dentistry, Tokushima University, Japan).

**1200** Neurotransmitters Regulate Amount of AQP5 in Apical Membrane of Parotid. Y. ISHIKAWA\*, N. INOUE, and H. ISHIDA (School of Dentistry, Tokushima University, Japan).

**1201** Parotid Secretory Granules Do Not Function as Intracellular Ca<sup>2+</sup> Stores. Y. TOJOYO\*, A. NEZU, A. TANIMURA, T. MORITA, and T. YAJIMA (Health Sciences University of Hokkaido, Ishikari-Tobetsu, Japan).

**1202** Molecular Mechanism of sIgA Transcytosis in Rat Submandibular Glands. K. ISHIBASHI\*, J. KIYAMA, W. MOTOKAWA, and K. ABE (Fukuoka Dental College, Japan).

**1203** Apoptosis and Proliferation of Myoepithelial Cells in Atrophic Submandibular Gland. S. TAKAHASHI\*, S. NAKAMURA, K. SHINZATO, T. DOMON, T. YAMAMOTO, and M. WAKITA (Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan).

**1204** Developmental Changes in Secretory Granules of the Pre- and Post-natal Rat Sublingual Gland. K. KIKUCHI\*, K. KOIKE, and S. AIYAMA (School of Dentistry at Tokyo, Nippon Dental University, Japan).

**1205** Histological Changes in Submandibular Gland Parenchyma Caused by Main Blood Vessel Ligation. Y. FUJISAWA\* and S. AIYAMA (School of Dentistry at Tokyo, Nippon Dental University, Japan).

**Seq#: 138 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Microbiology/Immunology & Infection Control - Molecular Biology of Periodontal Pathogens

**1206** Role of the C-terminal Region in FtsZ from *Porphyromonas gingivalis*. W.-X. YU\*, S. AKIFUSA, T. ANSAI, and T. TAKEHARA (Kyushu Dental College, Kitakyushu, Japan).

**1207** The Pathogenic Roles of *Porphyromonas gingivalis* Fimbriae. N. HAMADA\*, M. ARAI, and T. UMEMOTO (Department of Oral Microbiology, Kanagawa Dental College, Japan).

**1208** Utilization of Dipeptides by Periodontal Pathogens, *Porphyromonas*, *Prevotella*, and *Fusobacterium*. N. TAKAHASHI\* and T. SATO (Division of Oral Biochemistry, Graduate School of Dentistry, Tohoku University, Sendai, Japan).

**1209** Mixed Infection by *Porphyromonas gingivalis* and *Treponema denticola* in Mice. M. WASHIZU\*, K. ISHIHARA, and K. OKUDA (Oral Health Science Center, Tokyo Dental College, Chiba, Japan).

**1210** Multidrug Exporter of an Anaerobic Bacterium *Porphyromonas gingivalis*. T. IKEDA\*, O. UEDA, and F. YOSHIMURA (Aichi-Gakuin University, Nagoya, Japan).

**1211** Analysis of GDP-6-deoxy-D-talose-synthesizing Enzymes from *Actinobacillus actinomycetemcomitans*. N. SUZUKI\*, Y. NAKANO, Y. YAMASHITA, and T. KOGA (Faculty of Dental Science, Kyushu University, Fukuoka, and Nihon University School of Dentistry, Tokyo, Japan).

**1212** Construction and Characterization of a BspA Mutant of *Bacteroides forsythus*. K. HONMA\*, H.K. KURAMITSU, R.J. GENCO, and A. SHARMA (Department of Oral Biology, School of Dental Medicine, and Department of Microbiology, School of Medicine and Biomedical Science, State University of New York at Buffalo, USA).

**1213** *Bacteroides forsythus* BspA, a Leucine-rich Repeat Cell-surface Protein, Induces Release of Inflammatory Cytokines by Monocytic Cells. A. SHARMA\*, K. HONMA, G. HAJISHENGALLIS, and R.J. GENCO (Department of Oral Biology, SUNY at Buffalo, NY, USA).

**1214** Genotype Diversity of *Actinobacillus actinomycetemcomitans* and *Eikenella corrodens* in Periodontal Pockets. C. CHEN\* and W. CHEN (Periodontology, USC School of Dentistry, Los Angeles, USA).

**1215** Characterization of *Eubacterium*-like Strains from Oral Infections. J. DOWNES\*, M.A. MUNSON, D.A. SPRATT, E. KÖNÖNEN, E. TARKKA, H. JOUSIMIES-SOMER, and W.G. WADE (King's College London, UK; and National Public Health Institute, Helsinki, Finland).

**1216** Diverse Clones of Oral *Actinobacillus actinomycetemcomitans* and *Haemophilus aphrophilus* Cause Non-oral Infections. S. PAJU\*, P. CARLSON, H. JOUSIMIES-SOMER, and S. ASIKAINEN (University of Helsinki, and University Central Hospital, National Public Health Institute, Finland).

**1217** Proposal of Novel Genera for Asaccharolytic, Anaerobic *Eubacterium* Species. F. NAKAZAWA\*, S.E. POCO, Jr., M. SATO, T. IKEDA, and E. HOSHINO (Faculty of Dentistry, Niigata University, Japan).

**1218** Immunological Relationship between Periodontopathogenic Bacteria and *Helicobacter pylori*. S. TANABE\*, M. YOKOYAMA, M. FUKUI, D. HINODE, and R. NAKAMURA (University of Tokushima School of Dentistry, Japan).

**1219** The 16S rRNA Copy Number of Three *Porphyromonas gingivalis* Isolates. P. HOU\* and S.P. CONCANNON (US Army Dental Research Detachment, Great Lakes, IL, USA).

**1220** Isolation and Characterization of Outer Membrane from *Porphyromonas gingivalis*. Y. MURAKAMI\*, M. IMAI, H. NAKAMURA, and F. YOSHIMURA (*Aichi-Gakuin University, Nagoya, Japan*).

**Seq#: 139 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Microbiology/Immunology & Infection Control - Cytokines, Defensins, Cell Signaling**

**1221** Incidence of the SENV in Oral Lichen Planus (OLP). A. MAJORANA\*, S. PIROVANO, V. BIANCHI, M. BELLINZONI, E. BARDELLINI, A. ALBERTINI, and L. IMBERTI (*Spedali Civili, and University of Brescia, Italy*).

**1222** Transforming Growth Factor- $\beta$ 1 (TGF- $\beta$ 1) Epithelial Expression in Oral Lichen Planus and Oral Lichenoid Reactions. A. KARATSAIDIS\*, O. SCHREURS, K. HELGELAND, T. AXÉLL, and K. SCHENCK (*University of Oslo, Norway*).

**1223** Induction of Human  $\beta$ -defensin-2 in Human Gingival Fibroblasts by Gene Transfer. F. MINESHIBA\*, S. TAKASHIBA, J. MINESHIBA, F. NISHIMURA, H. MAEDA, H. ARAI, and Y. MURAYAMA (*Department of Periodontology and Endodontology, Okayama University Dental School, Japan*).

**1224** Functional Human  $\beta$ -defensin-2 Secreted from NIH/3T3 Cells Transduced with Retrovirus Carrying HBD-2 Gene. G.T.-J. HUANG, D. KIM\*, L. LIU, and T. GANZ (*School of Dentistry, and School of Medicine, UCLA, USA*).

**1225** Depletion of Interleukin-6 Accelerates the Formation of Periapical Lesions after Pulp Exposure. G.T.-J. HUANG, M. DO, J.S. PARK, M. WINGARD, and N. CHUGAL\* (*UCLA School of Dentistry, USA*).

**1226** Monoclonal Antibody against Human  $\beta$ -defensin-2. M. OHTA\*, M. HAYAKAWA, M. KIYAMA, Y. KAMINO, H. SASAHARA, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1227** Vacuolar Type H<sup>+</sup>-ATPase Inhibitor Induces Apoptosis in HSG Cells. K. AIKO\*, T. TSUJISAWA, S. HASHIMOTO, Y. MORIMOTO, T. AMAGASA, and T. NISHIHARA (*Tokyo Medical and Dental University, and Kyushu Dental College, Kitakyushu, Japan*).

**1228** Activin A and Follistatin Control Osteoclast Differentiation through a Smad2 Signaling Pathway. Y. MURASE\*, T. KOSEKI, M. KOIDE, M. OHGUCHI, Y. ISHIHARA, T. NOGUCHI, and T. NISHIHARA (*Aichi Gakuin University, Nagoya, National Institute of Infectious Diseases, Tokyo, and Kyushu Dental College, Kitakyushu, Japan*).

**Seq#: 140 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Periodontal Research - Clinical, Radiographic, and Microbiological Diagnosis of Periodontal Diseases**

**1229** Distribution of *Eikenella corrodens* in Subgingival Plaque from Patients with Periodontitis. R. SUDA\*, K. HASEGAWA, and C.-H. LAI (*University of Pennsylvania, USA; and Showa University, Tokyo, Japan*).

**1230** Periodontal Key Pathogens in Healthy Subjects Depending on the Number of Fillings. A. PFITZNER\*, B.W. SIGUSCH, W. PFISTER, G. KLINGER, and E. GLOCKMANN (*Department of Conservative Dentistry, University of Jena, Germany*).

**1231** Serotype-mixture ELISA for *Actinobacillus actinomycetemcomitans* and *Porphyromonas gingivalis*. P.J. PUSSINEN, T. VILKUNA\*, G. ALFTHAN, K. MATTILA, M. VESANEN, and S. ASIKAINEN (*University of Helsinki, National Public Health Institute, Helsinki, and Helsinki University Central Hospital, Finland*).

**1232** Microbiological Test for Early-onset Periodontitis Patients. H. TAKEDA\*, K. TAKAHASHI, H. MOTOHIRA, T. AZUMA, H. NISHIDA, M. FUKAZAWA, and T. MIYATA (*Department of Periodontology, Meikai University School of Dentistry, Saitama, Japan*).

**1233** Stability of *Bacteroides forsythus* Colonization in Children. X. CHU\*, A.L. GRIFFEN, C.W. LAMELL, and E.J. LEYS (*Departments of Orthodontics, Pediatric Dentistry, and Oral Biology, College of Dentistry, Ohio State University, Columbus, USA*).

**1234** Detection of 5 Putative Periodontopathogens in Plaque Samples from Children. F. HAYASHI\*, M. OKADA, and N. NAGASAKA (*Faculty of Dentistry, Hiroshima University, Japan*).

**1235** Epstein-Barr Virus (EBV) Evaluation in Gingival Tissue in Acute and Chronic Periodontal Diseases. C. PRATI\*, M.P. FOSCHINI, L. MORANDI, P. SUPPA, S. CHERSONI, and V. EUSEBI (*Department of Dental Sciences and Pathology at Bellaria Hospital, University of Bologna, Italy*).

**1236** Relationship between Radiographic Attachment Loss and Cone-shaped Root in Molars. C.H. LIN, G.L. HOU\*, and C.C. TSAI (*Graduate Institute of Dental Sciences, Kaohsiung Medical University, Taiwan*).

**1237** Detecting Alveolar Bone Changes by Image-Pro Plus. J. KASETSUWAN\*, S. SIRISAMBANDHA, B. MANOMASANTIPHAP, and T. SIRICHAYAKUL (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand*).

**1238** Relationship between the Angle of Bone Resorption and Bone Fill after Treatment. S.Y. ZHOU\*, C.F. CAO, G. ZHANG, and X.C. MA (*School of Stomatology, Peking University, Beijing, China*).

**1239** Clinical Investigation of Periodontal Conditions by Using Vibrational Technology. S.-Y. LEE\*, H.-M. HUANG, C.-Y. YEH, M.-S. WANG, and C.-T. LIN (*Graduate Institute of Oral Rehabilitation Sciences, School of Medical Technology, and School of Medicine, Taipei Medical University, Taiwan*).

**1240** In vivo Study for Ultrasonic Determination of Gingival Thickness by Amplitude and Brightness Scans. P. HERMANUTZ\*, M. ENDER, A. HOMMENS, and G. WAHL (*University of Bonn, Germany*).

**1241** Detection of Subgingival Calculus Using Fluorescence Induced by 650-nm Diode-laser Radiation. M. FOLWACZNY\*, R. HEYM, A. MEHL, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, Ludwig-Maximilians-University, Munich, Germany*).

**Seq#: 141 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Periodontal Research - Periodontal Genetics and Population Studies**

**1242** Gene Expression in Neutrophils from Patients with Generalized Aggressive Periodontitis. T. MOROZUMI\*, T. KUBOTA, K. SHIMIZU, N. SUGITA, T. KOBAYASHI, and H. YOSHIE (*Faculty of Dentistry, Niigata University, Japan*).

**1243** Relationships between Osteoporosis and Periodontal Condition in Post-menopausal Women. E.Y. HAN, I.C. RHYU\*, Y.M. LEE, Y. KU, S.B. HAN, S.M. CHOI, and C.P. CHUNG (*Department of Periodontology, College of Dentistry, Seoul National University, Korea*).

**1244** Plaque, Gingivitis, and Periodontal Disease in Relation to Mortality in a Longitudinal Study. B. SÖDER\*, S. AIRILA MÅNSSON, B. KLINGE, and P.-Ö. SÖDER (*Institute of Odontology, Karolinska Institutet, Stockholm, Sweden*).

**1245** Association between Periodontitis and Liver Damage among Alcoholics. A. KHOCHT\*, M. JANAL, S. SCHLEIFER, and S. KELLER (*UMDNJ New Jersey Dental School, and New Jersey Medical School, Newark, USA*).

**1246** Markers of Chronic Inflammation, Dental Morbidity, and Periodontal Infections in an Elderly Population 70+. R.J. WEYANT\*, W.A. BRETZ, P.M.A. CORBY, N. MARKOVIC, S. KRITCHEVSKY, and A. NEWMAN (*University of Pittsburgh, USA*).

**1247** Analysis of *Porphyromonas gingivalis* Infections between Family Members. H. ASANO\*, K. ISHIHARA, J. TAKAHASHI, T. NAKAGAWA, S. YAMADA, and K. OKUDA (*Tokyo Dental College, Chiba, Japan*).

**Seq#: 142 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Periodontal Research - In vitro Studies

**1248** ALP and Proliferation of Gingival Fibroblasts on BMP-2-applied Dentin. T. SUGAYA\*, H. MIYAJI, and H. KATO (*Hokkaido University, Sapporo, Japan*).

**1249** Presence of Lysophospholipid Receptors on Human Gingival Keratinocytes. J.S. SZYMANOWSKI, S. ASHKAR, and L.C. CARPIO\* (*School of Dental Medicine, Harvard University, Boston, MA, USA*).

**1250** Gene Expression Patterns of Periodontal Ligament Cells and Gingival Fibroblasts. J.-Y. SUH\*, C.-Y. JEON, and M.K. KIM (*University of Kyungpook, Taegu, Korea*).

**1251** Biological Characteristics of Human Cultured Mucosal Cell Sheets. M. MURATA\*, M. MOMOSE, Y. KATOH, K. OKUDA, K. YAMAZAKI, Y. NINAGAWA, K. KUBO, T. SHINOHARA, M. UEDA, and H. YOSHIE (*Faculty of Dentistry, Niigata University, Japan Tissue Engineering Co. Ltd., and Nagoya University School of Medicine, Aichi, Japan*).

**1252** Effects of  $\beta$ -alanyl-L-histidinato Zinc and  $\beta$ -alanyl-L-histidine on Osteoblastic Saos-2 Cells. T. FUKUDA\*, M. MAENO, K. OTSUKA, and K. ITO (*Departments of Periodontology and Biochemistry, School of Dentistry, Nihon University, Tokyo, Japan*).

**1253** Molecular Mechanisms of Enamel Matrix Derivative-induced Cell Proliferation. N. MATSUDA\*, M. HORIKAWA, M. WATANABE, Y. KUDO, and T. TAKATA (*Nagasaki University, and Hiroshima University, Japan*).

**1254** Collagen Matrices and Bilateral Cell Seeding for Tissue Implantation. Y. XIAO and P.M. BARTOLD\* (*School of Dentistry, University of Queensland, Australia*).

**1255** Different Compositions of Liposomes on the Mineralization in Rat Osteoblast-enriched Cultures. J.S. HUANG, W.C. HUANG\*, H.F. WU, and K.L. HONG (*Kaohsiung Medical University, Taiwan; and Pacific Medical Center Research Institute, San Francisco, CA, USA*).

**Seq#: 143 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Neuroscience/TMJ - TMD: Diagnosis, Assessment, and Joint Anatomy

**1256** The TMJ Disc Volume Difference Under Closing and Opening Conditions—A MR Imaging Study. H.T. CAO\*, M.Q. WANG, D.D. LIU, M.S. LIU, X.F. YAO, and T. SHIBATA (*Stomatological College, Fourth Military Medical University, Xi'an, China*).

**1257** Resorption of Lateral Part of Condyle Correlates with Internal Derangement. H. KURITA\* and K. KURASHINA (*Department of Dentistry and Oral Surgery, Shinshu University School of Medicine, Matsumoto, Japan*).

**1258** Viscoelastic Properties of Bovine Articular Disks in Tensile Creep Test. E. TANAKA\*, J. AOYAMA, Y. HATTORI, A. SASAKI, M. WATANABE, and K. TANNE (*Hiroshima University, Japan*).

**1259** Psychological Factors of Patients with TMD under Orthodontic Treatment. M. NOMURA\*, E. MOTEGI, D. YAMAGUCHI, and Y. ISSHIKI (*Tokyo Dental College, Chiba, Japan*).

**1260** Emotional Stress as Seen from Types of TMD. H. SHIGA, M. YOKOYAMA\*, and I. ARAKAWA (*Nippon Dental University, Tokyo, Japan*).

**1261** Sympathetic Tone Hypothesis for Tinnitus Accompanying TMD/OFP. M. OKUBO\*, M. ITO, H. KOBAYASHI, N. NARITA, and T. MATSUMOTO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1262** The Profile of Craniomandibular Disorders in Tinnitus Patients in Comparison with a Population-based Group of Volunteers without Tinnitus. O. BERNHARDT\*, K. BITTER, C. SCHWAHN, D. GESCH, and G. MEYER (*School of Dentistry, University of Greifswald, Germany*).

**1263** Is Steep Eminence a Predisposing Factor for Disc Displacement? K. TOMINAGA\*, K. KISHIMOTO, M. SUKEDAI, N. FURUTA, Y. MORIMOTO, T. TANAKA, T. KONOO, T. OHBA, and J. FUKUDA (*Kyushu Dental College, Kitakyushu, Japan*).

**1264** Unilateral Smaller Condyle Head in Temporomandibular Disorder Patients. G.L. LODETTI\*, L. GRAZIOLI, P.L. FOGGIO BONDA, V. ROCCHETTI, and C. BODIN (*University of Brescia, and University of Eastern Piedmont, Italy*).

**1265** Study of Arthropathies in 144 Young Italian Patients. F. FERRABOLI\*, G.L. LODETTI, L. GRAZIOLI, and C. BODIN (*University of Brescia, Italy*).

**1266** Contralateral Joint Disc Pathology in Symptomatically Unilateral TMJ ADDwor Patients. H. MINAKUCHI\*, C.K. ARITA, M. NISHIMURA, T. KUBOKI, and H. YATANI (*Okayama University Dental School, Japan*).

**1267** Prevalence of Signs and Symptoms in Patients with Internal Derangements. C.K. ARITA\*, H. YATANI, M. NISHIMURA, H. MINAKUCHI, and T. KUBOKI (*Department of Fixed Prosthodontics, Okayama University Dental School, Japan*).

**1268** TMD Signs and Symptoms Fluctuation among Recall Patients in Clinic. M. NISHIMURA\*, T. KAGEYAMA, Y. MATSUKA, K. HATANAKA, E. YOSHIDA, H. MINAKUCHI, T. KUBOKI, and H. YATANI (*Department of Fixed Prosthodontics, Okayama University Dental School, and Kageyama Dental Clinic, Japan; and UCLA School of Dentistry, USA*).

**1269** The Association of Visual Feedback with the Velocity of Mandibular Movement in TMD Subjects. C.-Z. WU, N.-Y. HUANG\*, Y.-H. NIU, C.-Y. LI, and C.-F. TAI (*School of Dentistry, Taipei Medical University, and TMUH Dental Department, Taipei, Taiwan*).

**1270** Disc Displacement of the Temporomandibular Disorders and Risk Indicators in a Young Population. A. ZAZUETA\*, I. MÉNDEZ, M. SAAVEDRA, M. LÓPEZ, and F. HERRERA (*Autonomous University of Campeche, UAC, and National Autonomous University of Mexico, UNAM*).

**Seq#: 144 Friday, June 29, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Craniofacial Biology - Craniofacial Development: Clinical and Experimental Studies**

**1271** Soft Tissue Cephalometric Analysis on Esthetic Facial Profile. Y.-J. KIM\* and D.-S. NAHM (*Department of Orthodontics, College of Dentistry, Seoul National University, Korea*).

**1272** Morphological Differences of the Craniofacial Structures between Japanese and Nigerian Children. H. OUEIS\*, Y. ONO, and Y. TAKAGI (*Tokyo Medical and Dental University, Japan*).

**1273** Cephalometric Standards of Craniofacial Growth of Guatemalan Children. J. ANDRINO\*, C.E. POMES, R. AGUIRRE, and R.M. PONCE (*Universidad de San Carlos de Guatemala; University of Michigan, Ann Arbor, USA; and Tokyo Medical and Dental University, Japan*).

**1274** A Study of Growth Changes of Cranial Base in Children. M.S. LEE\* and Y.C. CHOI (*University of Kyung Hee, Seoul, Korea*).

**1275** Size and Shape Changes in the Japanese Cranial Base: Fourier Descriptors. P.E. LESTREL, O. TAKAHASHI\*, E. KANAZAWA, and K. KASAI (*UCLA School of Dentistry, USA; and Nihon University School of Dentistry at Matsudo, Japan*).

**1276** Fourier Descriptors of Longitudinal Maxillary Shape Changes in MZ and DZ Twins. C.B. TOROK\* and P.E. LESTREL (*Section of Oral Biology, UCLA School of Dentistry, USA*).

**1277** Anterior Tooth Size Discrepancies among Orthodontic Patients with Various Malocclusions. H.S. KIM, W. HEO\*, and D.S. NAHM (*Department of Orthodontics, College of Dentistry, Seoul National University, Korea*).

**1278** Tooth Size and Arch Length Differences between Nigerian and Japanese Pre-school Children. L. MELO\*, Y. ONO, and Y. TAKAGI (*Tokyo Medical and Dental University, Japan*).

**1279** The Self-concept of Adolescents with Cleft Lip and Palate. M.G. GUSSY\*, N. KILPATRICK, and J. MUNRO (*Royal Children's Hospital, Melbourne, and University of Melbourne, Australia*).

**1280** Orofacial Development and Function of 3 Patients of Orofacial Digital Syndrome. M.B. MUSELMANI\* (*Faculty of Dentistry, Tishreen University, Lattakia, Syria*).

**1281** EGFR and PGP9.5 in the Craniofacial Structures of the Neonatal Mouse. H.S. KIM\*, B.Y. PARK, B.K. PARK, and E.S. CHO (*School of Dentistry, Chonbuk National University, Chonju, Korea*).

**1282** Expression of BMP-2, 3, 4, 5 during Meckel's Cartilage and Mandibular Development. Y. JIN\*, H. LU, G.L. TIPOE, F. SUWA, and Y.R. FANG (*Stomatological College, 4th Military Medical University, Xi'an, China; Faculty of Medicine, University of Hong Kong; and Osaka Dental University, Japan*).

**1283** Role of bFGF on Chondrogenesis in Mandibular Condyle *in vitro*. T. OGAWA\*, H. SHIMOKAWA, K. FUKADA, S. SUZUKI, S. SHIBATA, K. OHYA, and T. KURODA (*Graduate School, Tokyo Medical and Dental University, Japan*).

**1284** Expression of Osteopontin and Bone Sialoprotein in Developing Condylar Cartilage. S. SHIBATA\*, K. FUKADA, S. SUZUKI, T. OGAWA, and Y. YAMASHITA (*Tokyo Medical and Dental University, Japan*).

**1285** NGF-induced Neural-like Cell Differentiation in Dental Papilla. S.F. YANG\* and W.C. KUO (*Institute of Oral Biology, Yang-Ming University, Taipei, Taiwan, ROC*).

**1286** The Attached Gingiva of the Rat is Tensed *in situ*. M. LORBER\* (*School of Medicine, Georgetown University, Washington, DC, USA*).

**1287** The Influence of Scar Tissue on the Anterior and Lateral Growth of Maxillae on the Rat Palate. T. KIM\*, A. HANDA, H. ISHIKAWA, S. YOSHIDA, and J. IIDA (*Hokkaido University, Sapporo, and Fukuoka Dental College, Japan*).

**Seq#: 145 Friday, June 29, 1:45 pm - 3:45 pm**  
**Symposium, Prince Hotel: Hall 1**

**Craniofacial Biology - Suture Biology: Molecular and Cellular Regulatory Mechanisms of Cranial Suture Formation**

**Chairperson: H.-D. Nah**

**1288** 1:45 Suture Biology: Molecular and Cellular Regulatory Mechanisms of Cranial Suture Formation. H.-D. NAH\* (*University of Pennsylvania, Philadelphia, USA*).

1:55 Role of FGFs and Twist in Cranial Bone and Suture Formation. D. RICE (*Viikkiinkaari, Finland*).

2:20 Genetic Control of Skull Vault Development: Role of Fibroblast Growth Factor Receptor Signaling. S. ISEKI (*Tokyo Medical and Dental University, Japan*).

2:45 Genetic Pathways Underlying Murine Calvarial Development. R. MAXSON (*University of Southern California, Los Angeles, US*).

3:10 Cellular and Molecular Regulation of Suture Development and Growth. L.A. OPPERMAN (*Baylor College of Dentistry, TAMUS, Dallas, US*).

3:35 Discussion

**Seq#: 146 Friday, June 29, 1:45 pm - 3:45 pm**  
**Symposium, Makuhari Messe: Room 304**

**IADR ad hoc Committee on Tobacco, IFDEA, and the IADR Behavioral Sciences/Health Services Research Group - Tobacco Use and Oral Health Effects in Different World Populations**

**Chairpersons: J. Greene and A. Horowitz**

**1289** 1:45 Tobacco Use and Oral Health Effects in Different World Populations. J.C. GREENE\*, S.L. TOMAR, T. HANIOKA, S. WICKHOLM, B. SÖDER, E.A.O. OGWELL, and M.N. SHAH (*University of Florida, USA; Osaka University, Japan; Karolinska Institutet, Sweden; University of Nairobi, Kenya; and Gov. Dental College and Hospital, Ahmedabad, India*).

1:50 Tobacco Use and Oral Health Effects - USA. S. TOMAR (*University of Florida, Gainesville, US*).

2:05 Tobacco Use and Oral Health Effects - Japan. T. HANIOKA (*Osaka University, Japan*).

2:20 Tobacco Use and Oral Health Effects in Sub-Saharan Africa. E.A.O. OGWELL (*University of Nairobi, Kenya*).

2:35 Tobacco Use and Oral Health Effects - Sweden. S. WICKHOLM (*Karolinska Institute, Huddinge, Sweden*).

2:50 Influence of Tobacco Use on Oral Hygiene and Periodontal Health in Sweden. B. SÖDER (*Karolinska Institute, Huddinge, Sweden*).

3:05 Tobacco Use and Oral Health Effects - India. M. SHAH (*Government Dental College, Ahmedabad, India*).

3:20 Discussion

**Seq#: 147 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 3**

**Cariology Research - Remineralization - Quantification, ART, Intra-oral Fluoride, Dental Varnish Cytotoxicity, Remineralization Mechanisms**

**Chairpersons: J. Frencken and W. Arnold**

**1290** 1:45 ECM Quantification of Dentin Remineralization Using Fluoride. L.G. PETERSSON\* and E. LYNCH (*Oral Health Research Centre, Halmstad, Sweden; and Queen's University of Belfast, Northern Ireland*).

**1291** 2:00 Volumetric Assessment and Quantitative Element Analysis of the Effect of Fluoridated Milk on Enamel Remineralization. W.H. ARNOLD\*, K. NEUHAUS, M. CERMAN, and P. GAENGLER (*Faculty of Dental Medicine, University of Witten/Herdecke, Germany*).

**1292** 2:15 ART and Conventional Restorations in Deciduous Dentitions after 3 Years. D. TAYFOUR, J.E. FRENCKEN\*, N. BEIRUTTI, M.A. VAN 't HOF, and G.J. TRUIN (*WHO Regional Centre, Damascus, Syria; and University of Nijmegen, The Netherlands*).

**1293** 2:30 Cytotoxicity Evaluation of Dental Varnishes. W. CHIDCHUANGCHAI\*, S.K. SUWANNAWONG, and R. SRICHAN (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand*).

**1294** 2:45 High Fluoride in Oral Fluids from Low-fluoride Rinses. G.L. VOGEL\*, Z. ZHANG, G.E. SCHUMACHER, and L.C. CHOW (*ADAHF-PRC, NIST, Gaithersburg, MD, and Pfizer, Morris Plains, NJ, USA*).

**1295** 3:00 Remineralization Effect of a Low-concentration Fluoride Rinse in an Intra-oral Model. L.C. CHOW\*, S. TAKAGI, S. FRUKHTBYEN, B.A. SIECK, E.E. PARRY, G.E. SCHUMACHER, N.S. LIAO, and M. MARKOVIC (*ADAHF Paffenbarger Research Center, NIST, Gaithersburg, MD, USA*).

**1296** 3:15 Enamel Remineralization under Acidic Conditions. H. YAMAZAKI\* and H.C. MARGOLIS (*Kao Corporation, Tokyo, Japan; and Forsyth Institute, Boston, MA, USA*).

**1297** 3:30 Role of Organic Matrix in Laser-induced Prevention of Enamel Demineralization. C.S. HSU\*, V. GIRIJA, Y. DENG, G.K. CHUAH, and H. YU (*Department of Preventive Dentistry, Department of Chemistry, and National University Medical Institute, National University of Singapore*).

**Seq#: 148 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 201 B**

**Craniofacial Biology - Craniofacial Development and Imaging**

**Chairpersons: J. Varrela and L. Richards**

**1298** 1:45 Role of Gender in Pharyngeal Airway Morphology in Relation to Genioglossal Muscle Activity. E. PAE\*, J. BLASIUS, and R. NANDA (*Department of Orthodontics, University of Connecticut Health Center, Farmington, USA*).

**1299** 2:00 Gender Differences in Genioglossus Muscle Response to the Change in Pharyngeal Airway Patency. J. BLASIUS\*, E. PAE, and R. NANDA (*Department of Orthodontics, University of Connecticut Health Center, Farmington, USA*).

**1300** 2:15 Breastfeeding and Occlusal Development in the Primary Dentition. H.-L. WAINIO\*, P. ALANEN, and J. VARRELA (*Turku Health Center, and Institute of Dentistry, University of Turku, Finland*).

**1301** 2:30 Cephalometric Analysis of Children with Developing Malocclusion in Early Mixed Dentition. K. KESKI-NISULA, L. KESKI-NISULA, P. UTRIAINEN, and J. VARRELA\* (*Vaasa Central Hospital, Tampere University Hospital, Seinäjoki Health Center, and Institute of Dentistry, University of Turku, Finland*).

**1302** 2:45 A Longitudinal Study of Maxillary Dental Arch Shape. L.C. RICHARDS\*, S.K. PINKERTON, and G.C. TOWNSEND (*Dental School, Adelaide University, South Australia*).

**1303** 3:00 Mandibular Movement of Retrusion in a 238-healthy-subject Sample. P.L. FOGLIO BONDA, C. BODIN\*, M. MIGLIARIO, R. PORRINI, V. ROCCHETTI, and G.L. LODETTI (*University of Eastern Piedmont, and University of Brescia, Italy*).

**1304** 3:15 Comparison of CT Scanograms and Cephalometric Radiographs in Craniofacial Imaging. J. CHIDLAC, F.S. SHOFRER, A. AL KUTOUBI, L.L. LASTER, and J. GHAFARI\* (*American University of Beirut, and Lebanese University, Beirut; and University of Pennsylvania, Philadelphia, USA*).

3:30 Discussion

**Seq#: 149 Friday, June 29, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Makuhari Messe: Room 303**

**Dental Materials - Adhesion: Post Retention/Endodontic Sealers**

**Chairpersons: H. Mohammed-Tahawi and B. Cohen**

1:45 Poster Viewing

**1305** 2:15 Various Conditioning Methods Influencing the Retention of Root Posts. P. SCHMAGE\*, J. SOHN, I. NERGIZ, and U. PLATZER (*University of Hamburg, Germany*).

**1306** 2:25 Retentive Strengths of Metal Root Posts Using Chemical Surface Treatment. I. NERGIZ\*, J. SOHN, P. SCHMAGE, and U. PLATZER (*Dental School, University of Hamburg, Germany*).

**1307** 2:35 Retention of Cast Posts Cemented Using Four Different Adhesive Systems. T. SEKITO, Jr.\* and B.D. PINTO (*Universidade do Estado do Rio de Janeiro, Brazil*).

**1308** 2:45 Retreatment of Canals Obturated after the Use of Dentin Bonding Agents as Adjuncts. I.M. AL-MADI and H. MOHAMMED-TAHAWI\* (*King Saud University, and National Guard Hospital, Riyadh, Saudi Arabia*).

**1309** 2:55 Effects of Three Endodontic Sealers on Retention of Prefabricated Posts. M.S. HAGGE\* and J.S. LINDEMUTH (*University of the Pacific, San Francisco, and Travis Air Force Base, CA, USA*).

**1310** 3:05 Comparison of Shear Bond Strengths for Four Endodontic Sealers. B.I. COHEN\*, Y. VOLOVICH, B.L. MUSIKANT, and A.S. DEUTSCH (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**1311** 3:15 Microtensile Bond Strength of Dual-cure Resin Cement to Root Dentin. T. KANNO\*, M. OGATA, R.M. FOXTON, M. NAKAJIMA, J. TAGAMI, and H. MIURA (*Tokyo Medical and Dental University, Japan*).

3:25 Discussion

**Seq#: 150 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 6**

**Dental Materials - Mechanical Properties, Fracture, Wear**

**Chairpersons: J. Ferracane and M. Braem**

**1312** 1:45 Fracture Toughness of Hybrid Composites Containing Non-bonded Nanofillers. J.L. FERRACANE\*, J.R. ROBERTSON, and J.R. CONDON (*Oregon Health Sciences University, Portland, USA*).

**1313** 2:00 Mechanical Properties of an Oxirane Composite Filling Material. K.H. KUNZELMANN\*, N. ILIE, J. MANHART, and R. HICKEL (*Department of Restorative Dentistry, Dental School of the LMU, Munich, Germany*).

**1314** 2:15 Flexural Fatigue Limit of Indirect Dental Composites. M.J.A. BRAEM\* and G. KETELEER (*Lab Dental Materials, Universiteit Antwerpen-RUCA, Belgium*).

**1315** 2:30 Thermal Expansion of Tooth-colored Restorative Materials. S.K. SIDHU\* and J.F. McCABE (*Dental School, University of Newcastle upon Tyne, UK*).

**1316** 2:45 Measurement of the Visco-elastic Changes during Light Curing of Resin Composites. M.P. AARNTS\*, B.S. DAUVILLIER, and A.J. FEILZER (*Department of Dental Material Sciences, ACTA, Amsterdam, The Netherlands*).

**1317** 3:00 Wear of Composite Luting Cement *in vitro*. J.R. CONDON\*, R.R. BRAGA, and J.L. FERRACANE (*Oregon Health Sciences University, Portland, USA; and University of São Paulo, Brazil*).

**1318** 3:15 Marginal Degradation of Direct and Indirect Resin Composite Restorations. S. SUZUKI\*, Y. MINESAKI, H. KAJIHARA, and F. TAMURA (*University of Alabama at Birmingham, USA*).

**1319** 3:30 Microfocus X-ray CT Analysis of Shrinking Direction in Resin Composite. N. KATAHIRA\*, N. INAI, J. TAGAMI, A. HIRAKIMOTO, S.J. MARSHALL, and G.W. MARSHALL (*Tokyo Medical and Dental University, and Shimadzu Co., Kyoto, Japan; and University of California San Francisco, USA*).

**Seq#: 151 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Conv Hall A**

#### Dental Materials - Prosthodontic Materials

**Chairpersons: D. Watts and C. Thomas**

**1320** 1:45 Dynamic Viscoelasticity of Tissue Conditioners during Gelation. H. MURATA\*, R.C. HABERHAM, T. HAMADA, and J.F. McCABE (*Hiroshima University, Japan; and University of Newcastle, UK*).

**1321** 2:00 Visco-elasticity of Four Resilient Denture Liners as Determined by Relaxation Time. S. DUSHYANTHIRA, J. KIM, L. KNODLER, S. SAADE, and C.J. THOMAS\* (*Faculty of Dentistry, University of Sydney, Australia*).

**1322** 2:15 Comparison of Retaining Properties of Impression Materials for Fixation Impressions. B. REUSCH, E. WANEK, C. WILL, and J. ZECH\* (*ESPE Dental AG, Seefeld, Germany*).

**1323** 2:30 Thickness and Stiffness Characteristics of Processed Customized Mouthguard Materials. E.J. WAKED\*, T.K. LEE, and A.A. CAPUTO (*UCLA School of Dentistry, USA*).

**1324** 2:45 Bi-axial Flexural Strengths of Composites for Metal-free Crown and Bridge. Y. MINESAKI\*, S. SUZUKI, H. KAJIHARA, H. MINAMI, and T. TANAKA (*University of Alabama, Birmingham, USA; and University of Kagoshima, Japan*).

**1325** 3:00 Cross-linked Dental Resin Reinforced with Noncovalent Bond. J. TANAKA\*, J.W. STANSBURY, J.M. ANTONUCCI, and K. SUZUKI (*Okayama University, Japan; University of Colorado, Aurora, and NIST, Gaithersburg, MD, USA*).

**1326** 3:15 Effects of Acid and Heat Treatments on the Properties of Metal-Resin Composite. S. URAPEPON\*, K. KAKUTA, and H. OGURA (*Mahidol University, Bangkok, Thailand; and Nippon Dental University at Niigata, Japan*).

**1327** 3:30 Di-methacrylate vs. Mono-methacrylate Composites as Temporary Crown and Bridge Materials. D.C. WATTS\* and S.-H. KIM (*University Dental Hospital of Manchester, UK*).

**Seq#: 152 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Int'l Conf Room**

#### Dental Materials - Biological Response/Cutting/Dentin Properties

**Chairpersons: S. Tsutsumi and T. Watson**

**1328** 1:45 Histological Evaluation of PDL Cells 3D-cultured on Dental Implants. S. TSUTSUMI\*, C. PENG, K. MATSUMURA, N. NAKAJIMA, and S.-H. HYON (*Institute for Frontier Medical Sciences, Kyoto University, Japan*).

**1329** 2:00 Cytotoxic Effects of New Dental Composites with Simplified Handling Procedures. A. SCHEDLE\*, A. FRANZ, F. KOENIG, X.H. RAUSCH-FAN, and W. SPERR (*School of Dentistry, and Department of Medical Statistics, University of Vienna, Austria*).

**1330** 2:15 Induction of Cytochrome P450-1A1 by Resin Monomer *in vitro*. S. HIKAGE\*, T. KAMATAKI, T. HONGO, and K. SAKAGUCHI (*Health Sciences University of Hokkaido, Hokkaido University, and Tokyo Medical and Dental University, Japan*).

2:30 Discussion

**1332** 2:45 Observing Airbrasive Cutting of Dental Biomaterials Using Confocal Microscopy. T.F. WATSON\*, R.J. COOK, and A. AZZPOARDI (*Conservative Dentistry, Guy's, King's & St. Thomas' Dental Institute, KCL, Guy's Hospital, London, UK*).

**1333** 3:00 Newly Developed Diamond Points for Conservative Operative Procedures. Y. KATOH, M. SUNICO, K. SHINKAI\*, and V. MEDINA, III (*Nippon Dental University School of Dentistry at Niigata, Japan; and Manila College of Dentistry, University of the Philippines*).

**1334** 3:15 Dentin Erosion Simulation by Cantilever Beam Stress Test. M. STANINEC\*, T.M. BREUNIG, J.H. KINNEY, M.K. PUGACH, L.G. WATANABE, G.W. MARSHALL, and S.J. MARSHALL (*University of California, San Francisco, USA*).

**1335** 3:30 Hardness and Elasticity of Carious and Sound Primary Dentin. Y. HOSOYA\* and G. GOTO (*Nagasaki University, Japan*).

**Seq#: 153 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 201 A**

#### Diagnostic Systems - Imaging

**Chairpersons: L. Otis and Y. Guan**

**1336** 1:45 Application of Digital Three-dimensional Facial Reconstruction and Morphometric System. Y.X. BAI\*, H.M. GUO, B.K. WANG, and S.J. LUO (*Capital University of Medical Sciences, Beijing, PR China*).

**1337** 2:00 The Effect of Source Power on Image Clarity in Optical Coherence Tomography. L. OTIS\*, D. PIAO, Q. ZHU, N. DUTTA, and S. YAN (*University of Connecticut, Storrs, and University of Pennsylvania, Philadelphia, USA*).

**1338** 2:15 Automated Quantification of Plaque Accumulation Using Digital Image Analysis. K. CARTER\*, G. LANDINI, and A.D. WALMSLEY (*School of Dentistry, University of Birmingham, UK*).

**1339** 2:30 Tooth Whiteness Measurement Using a Novel Digital Camera System. Y.H. GUAN\*, D.L. LATH, T.H. LILLEY, and A.H. BROOK (*School of Clinical Dentistry, University of Sheffield, UK*).

**1340** 2:45 Use of Clinical and Photographic Methods to Measure Erosion in Primary Teeth in Children in Saudi Arabia. M. AL-MALIK\*, R.D. HOLT, and R. BEDI (*Eastman Dental Institute, University College London, UK; and KFAFH, Jeddah, Saudi Arabia*).

**1341** 3:00 Comparison of 3-dimensional and 2-dimensional Methods of Space Assessment. T.F. YONG\*, K.W.C. FOONG, J.H. CHUAH, and S.H. ONG (*National University of Singapore*).

**1342** 3:15 Integration of 3-D Shape of Dentition and Face Measured by High-speed Laser Scanner. T. SOHMURA\*, M. NAGAO, T. NAKAMURA, and J. TAKAHASHI (*Graduate School of Dentistry, Osaka University, Japan*).

**1343** 3:30 Influence of Measuring Conditions on Caries Diagnosis by Laser-based Device. Y. IWAMI\*, A. SHIMIZU, Y. KAWAI, H. YAMAMOTO, and S. EBISU (*Graduate School of Dentistry, Osaka University, Japan*).

**Seq#: 154 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 9**

### **Implantology Research - Implant Design - Animal & Clinical Studies**

**Chairpersons: A. Carr and Y. Nosaka**

**1344** 1:45 Comparison of Machined and Roughened Surface Titanium Implants Loaded at 2, 4, and 6 Weeks. A.B. CARR\*, L. KNOBLOCH, P.E. LARSEN, and J. KELLER (*Mayo Clinic, Rochester, MN, Ohio State University, Columbus, and University of Iowa, Iowa City, USA*).

**1345** 2:00 Modulated Gene Expression by Implant Placement and its Surface Modification. T. OGAWA\*, C. SUKOTJO, K. IIDA, and I. NISHIMURA (*Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, USA*).

**1346** 2:15 HA- and TPS-coated Implants in the Sheep Mandible. W.J. DUNCAN\*, A.R.C. PACK, and T.B. KARDOS (*Otago University, Dunedin, New Zealand*).

**1347** 2:30 Endosseous Implants in Horizontal Alveolar Ridge Distraction Osteogenesis. Y. NOSAKA\*, S. KITANO, K. WADA, C. NISHI, Y. NISHIYAMA, M. KOBAYASHI, J. ISHII, R. ADACHI, and T. KOMORI (*Kobe Nishi City Hospital, and School of Medicine, Kobe University, Japan*).

**1348** 2:45 Randomized Comparisons of Macro and Micro Designs of Surface Structure. M. YONG\*, J. MAU, G. GOMEZ-ROMAN, A. BEHNEKE, N. BEHNEKE, and B. D'HOEDT (*Heinrich Heine University, Duesseldorf, and Universities of Duesseldorf, Tuebingen, Mainz, Germany*).

**1349** 3:00 Comparison of Peri-implant Bone Reactions in Two Edentulous Mandible Implantations. J. MAU\*, M. YONG, and H. SPIEKERMANN (*University of Duesseldorf, Aachen, Germany*).

**1350** 3:15 Influence of Extraction Socket Coverage on Osseointegration of Immediate Implants. D. WENG\*, P. DIAZ, S. AL-MOUSLLIE, E.J. RICHTER, and R.G. CAFFESSE (*University of Würzburg, Germany; and University of Texas at Houston, USA*).

**1351** 3:30 Bone Regeneration in Peri-implant Bone Defects by Means of a Synthetic Polymer Resorbable Membrane vs. an Organic Polymer Resorbable Membrane. L. KOSTOPOULOS\*, N. MARDAS, A. STAVROPOULOS, and T. KARRING (*Royal Dental College, University of Aarhus, Denmark*).

**Seq#: 155 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 8**

### **Microbiology/Immunology & Infection Control - Control of Oral Biofilms**

**Chairpersons: R. Marquis and C. Walker**

**1352** 1:45 Enhancement of Oxidative Stress in Oral Streptococci by 8-hydroxyquinoline. P.T.M. NGUYEN and R.E. MARQUIS\* (*University of Rochester, NY, USA*).

**1353** 2:00 An Oral Biofilm Model for the Study of Antibiotic Susceptibilities. C. WALKER\*, M. SEDLACEK, S. NANGÓ, J. GOLLWITZER, and S. MICHALSKI (*University of Florida, Gainesville, USA*).

**1354** 2:15 *In vitro* Susceptibility to Penicillin of  $\beta$ -lactamase-producing *Fusobacterium nucleatum* of the Developing Oral Microflora. S. NYFORS\*, H. JOUSIMIES-SOMER, R. SYRJÄNEN, E. KOMULAINEN, and E. KÖNÖNEN (*National Public Health Institute, and University of Helsinki, Finland*).

**1355** 2:30 Assessment of the Antimicrobial Nature of Electrochemically Activated Water. S. GHORI, K. GULABIVALA, and D.A. SPRATT\* (*Eastman Dental Institute for Oral Healthcare Sciences, UCL, London, UK*).

**1356** 2:45 Serum Antibody Specificity against *Streptococci* *milleri* Antigens Following Periodontal Therapy. T. BEIKLER\*, G. ABDEEN, B. EHMKE, and T.F. FLEMMIG (*Clinic of Periodontology, Westfalian-Wilhelms University, Muenster, Germany*).

**1357** 3:00 Substantivity of Toothpaste Slurries and Their Effect on Plaque Regrowth. N. ARWEILER\*, L. NETUSCHIL, and E. REICH (*Dental School, University of the Saarland, Germany*).

3:15 Discussion

**Seq#: 156 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 4**

### **Mineralized Tissue - Bone and Cartilage Regulation**

**Chairpersons: D. Pavlin and J. Duke**

**1358** 1:45 Extracellular High-calcium Environment Affects Osteoclastogenesis *in vitro*. E. TAKAHASHI\*, H. MUKOHYAMA, K. AOKI, W.R. DUARTE, S. ENOMOTO, K. OHYA, and S. KASUGAI (*Tokyo Medical and Dental University, Japan*).

**1359** 2:00 RANK Ligand Elevates  $[Ca^{2+}]_i$  and Activates  $K^+$  Current in Osteoclasts. M.F. PILKINGTON, L.N. NAEMSCH, S.V. KOMAROVA, S.J. DIXON, and S.M. SIMS\* (*University of Western Ontario, London, Canada*).

**1360** 2:15 Effects of RANKL Overexpression in Cbfa-1-deficient Mice. S. SHIOJIRI\*, H. ENOMOTO, A. MIZUNO, K. TAKADA, and T. KOMORI (*Department of Molecular Medicine, Osaka University Medical School, Department of Orthodontics, Osaka University Faculty of Dentistry, and Research Institute of Life Science, Snow Brand Milk Products, Co., Ltd., Japan*).

**1361** 2:30 Macrophage Colony-stimulating Factor Promotes Osteoclast Precursor Survival through Up-regulating Bcl-X<sub>L</sub>. K.M. WOO, H.-M. KIM, and J.S. KO\* (*Seoul National University, and Kangnung National University, Korea*).

**1362** 2:45 Effect of Aging on Mechanical Stimulation of Osteoblast-characteristic Genes. D. PAVLIN\*, E. GOLDMAN, and J. GLUHAK-HEINRICH (*University of Texas Health Science Center, San Antonio, USA*).

**1363** 3:00 Culture of Human Costochondral Chondrocytes in a Three-dimensional System. P.J. DUKE\*, D. MONTUFAR-SOLIS, N. WILLIAMS, and J.T. HECHT (*University of Texas Health Science Center at Houston, USA*).

**1364** 3:15 Alterations of Collagen in Rat Tibiae Induced by Skeletal Unloading. M. SHIIBA, G.S. CHANDLER\*, H. TANZAWA, E. KITAMURA, and M. YAMAUCHI (*University of North Carolina, Chapel Hill, USA; and Chiba University, Japan*).

**1365** 3:30 The Regulation of Cell Motility by Integrins in Osteoblastic Cells. J.H. BENNETT\*, S. MOFFATT, and M. HORTON (*Eastman Dental Institute, and Bone and Mineral Centre, University College London, UK*).

**Seq#: 157 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 301 B**

**Neuroscience/TMJ - Muscle Activity, Pain, Sleep Disorders, and Bruxism**

**Chairpersons: T. Arima and T. Kato**

**1366** 1:45 Sequence of EEG and Cardiac Activation in Relation to Sleep Bruxism: A Controlled Study. T. KATO\*, J.Y. MONT-PLAISIR, P.H. ROMPRÉ, and G.J. LAVIGNE (*Centre d'Étude du Sommeil, Hôpital du Sacré-Cœur, Université de Montréal, Canada*).

**1367** 2:00 Effect of Pre-sleep Painful Stimulus on Sleep Orofacial Motor Activity. T. ARIMA\*, L. ARENDT-NIELSEN, and P. SVENSSON (*University of Aalborg, Denmark*).

**1368** 2:15 Analysis of Predictability of Nocturnal Bruxism Based on Common Clinical Findings. T. HAKETA\*, K. BABA, S. AKISHIGE, K. FUEKI, K. KINO, and T. OHYAMA (*Tokyo Medical and Dental University, Japan*).

**1369** 2:30 Assessment of Acute Oral Pains by Comparison with Electrical Stimuli. J. FÖRSTRÖM\* and P. ALSTERGREN (*Institute of Odontology, Karolinska Institutet, Stockholm, Sweden*).

**1370** 2:45 Relationship between Emotional Stress and Pain Level in TMD Patients. Y. KOBAYASHI, T. ISHIKAWA\*, and H. SHIGA (*Nippon Dental University, Tokyo, Japan*).

**1371** 3:00 EMG Parameters Suitable for Biofeedback Training to Patients with Clenching Behavior. M. FUJISAWA\*, Y. OGAWA, and K. ISHIBASHI (*Iwate Medical University, Morioka, Japan*).

**1372** 3:15 An Over-jet and Over-bite Comparison in Bruxism, Malocclusion Population, and University Students. M.Q. WANG\*, X.F. YAO, C.Y. YAN, M. ZHANG, Y. ZHANG, C.W. HUANG, D.D. LIU, and T. SHIBATA (*Stomatological College, Fourth Military Medical University, Xi'an, China*).

3:30 Discussion

**Seq#: 158 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 10**

**Oral & Maxillofacial Surgery - Wound Healing/Wound Infection**

**Chairpersons: J. McQuirter and A. Le**

**1373** 1:45 Hypoxia-induced Up-regulation of PAI-1 Expression. A.D. LE\*, H.S. DUONG, Y.D. WU, P.A. KELLY, T.L. TUAN, D.V. MESSADI, and C.N. BERTOLAMI (*Charles R. Drew University of Medicine and Science, Children's Hospital of Los Angeles, School of Dentistry, University of California at Los Angeles, and School of Dentistry, University of California at San Francisco, USA*).

**1374** 2:00 Differential Expression of VEGF in Human Dermal and Oral Mucosal Fibroblasts. T. AGHALOO\*, Y.D. WU, H.S. DUONG, D.V. MESSADI, and A.D. LE (*School of Dentistry, University of California, Los Angeles, and Charles R. Drew University of Medicine and Science, CA, USA*).

**1375** 2:15 Regulation of MMP-1 Expression in Cyclosporin-induced Gingival Overgrowth. C. CALHOUN\*, H.S. DUONG, D.V. MESSADI, T. AGHALOO, P. CAMARGO, E. BLACK, R.D. LEATHERS, J.L. MCQUIRTER, R. CHIU, and A.D. LE (*Charles R. Drew University of Medicine and Science, and School of Dentistry, University of California, Los Angeles, USA*).

**1376** 2:30 Ontogenetic Transition in Fetal Wound TGF- $\beta$  Regulation Correlates with Collagen Organization. F.Y. HU\*, X. ZHANG, B. SOO, and K. TING (*University of California, Los Angeles, USA*).

**1377** 2:45 The Role of Fibromodulin, a TGF- $\beta$  Modulator, in Fetal Skin Development and Scarless Wound Healing. B. SOO\*, X. ZHANG, H.F. LEE, F.Y. HU, and K. TING (*University of California, Los Angeles, USA*).

**1378** 3:00 Replantation of Primary Teeth: Histologic Study in Dogs. F.A.C. BOER\* and C. PERCINOTO (*School of Dentistry of Araçatuba, UNESP, Brazil*).

**1379** 3:15 Vacuum-sealing Technique in the Treatment of Odontogenous Abscesses. M. KELKER\*, K. SCHULTE, J. PIFFKO, and U. JOOS (*Westfälische Wilhelms-Universität, Münster, Germany*).

3:30 Discussion

**Seq#: 159 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 301 A**

**Oral Medicine & Pathology - Oral Cancer/Molecular Oncology: in vitro Studies**

**Chairpersons: M. Tavassoli and A. Tanaka**

**1380** 1:45 Aberrations in the MTS1 Tumor Suppressor Locus in Oral Squamous Cell Carcinoma Lines Preferentially Affect the INK4A Gene and Result in Increased cdk6 Activity. S. PIBOONNIYOM\*, S. TIMMERMANN, P.W. HINDS, and K. MÜNGER (*Harvard Medical School, Boston, MA, USA*).

**1381** 2:00 Invasive Character of Oral Cancer Cells Suppressed by nm23-H1 Protein. M.H. KHAN\*, M. YASUDA, and M. NAKAMURA (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**1382** 2:15 Ornithine Decarboxylase Antizyme Mediates DNA Demethylation in Human Oral Cancer. T. TSUJI\*, H. MESE, A. SASAKI, T. MATSUMURA, and D.T.W. WONG (*Harvard School of Dental Medicine, Boston, MA, USA; and Okayama University Dental School, Japan*).

**1383** 2:30 Use of the Two-hybrid System to Search for p12<sup>DOC-1</sup> Interacting Proteins. W. BUJEEB\*, H. OHYAMA, X. ZHANG, R. SURARIT, and D. WONG (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand; and Harvard School of Dental Medicine, Boston, MA, USA*).

**1384** 2:45 p12<sup>DOC-1</sup> is a Nuclear Protein; Expression Peaks in S Phase. T. MURAMATSU\*, T. TSUJI, Y. KOHNO, R. TODD, H. OHYAMA, and D.T.W. WONG (*Harvard School of Dental Medicine, Boston, MA, USA*).

**1385** 3:00 p12<sup>DOC-1</sup>-mediated Cell Death Requires Interaction with CDK2. Y. KOHNO\*, S. SHINTANI, H. OHYAMA, R. TODD, C.-Y. WANG, and D.T.W. WONG (*Harvard School of Dental Medicine, Boston, MA, and University of Michigan, Ann Arbor, USA*).

**1386** 3:15 Evidence of a Dimeric Form of the Growth Suppressor p12<sup>DOC-1</sup>. H. OHYAMA\*, V. PATAL, T. MURAMATSU, Y. KIM, Y. KOHNO, R. TODD, T. TSUJI, and D.T.W. WONG (*Harvard School of Dental Medicine, Boston, MA, USA*).

**1387** 3:30 Tamoxifen Synergizes with Cisplatin to Induce Apoptosis in HNSCC. M. TAVASSOLI\*, J. SOLTANINIA, and N.W. JOHNSON (*Guy's, King's & St. Thomas' School of Dentistry, London, UK*).

**Seq#: 160 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Room 302**

**Periodontal Research - Microbial and Host Markers of Periodontal Disease**

**Chairpersons: A. Mombelli and E. Könönen**

**1388** 1:45 Amphichiral Nature of Chronic Periodontitis. A. MOMBELLI\* and C. MEYER (*Schools of Dental Medicine, Universities of Geneva and Bern, Switzerland*).

**1389** 2:00 Periodontal Pathogens and Periodontal Diseases in an Elderly Population 70+. R.J. WEYANT, W.A. BRETZ, P.M.A. CORBY\*, N. MARKOVIC, V. ZAJACK, S. KRITCHEVSKY, and A. NEWMAN (*University of Pittsburgh, USA*).

**1390** 2:15 Salivary Carriage of Main Periodontal Pathogens in Adult Helsinki Citizens in Relation to Age and Gender. E. KÖNÖNEN\*, P. Di TELLA, V. TANSKANEN, and H. JOUSIMIES-SOMER (*National Public Health Institute, Helsinki, Finland*).

**1391** 2:30 Soluble CD14 in Gingival Crevicular Fluid. L.J. JIN\*, R.P. DARVEAU, W.K. LEUNG, and E.F. CORBET (*University of Hong Kong; and University of Washington, Seattle, USA*).

**1392** 2:45 Analysis of IL-1 Polymorphisms in Japanese Patients with Early-onset Periodontitis. H. TAI\*, M. ENDO, Y. SHIMADA, E. GO, K. ORIMA, T. KOBAYASHI, K. YAMAZAKI, and H. YOSHIE (*Department of Periodontology, Faculty of Dentistry, Niigata University, Japan*).

**1393** 3:00 Vitamin D Receptor Gene Polymorphism in Patients with Periodontitis. H.X. MENG\*, J.L. SUN, C.F. CAO, Z.B. CHEN, Y. TACHI, M. SHINOHARA, M. UEDA, H. IMAI, and K. OHURA (*School of Stomatology, Peking University, China; and Osaka Dental University, Japan*).

**1394** 3:15 Analysis of the Vitamin D and Fcγ Receptor Polymorphism in Generalized Early-onset Periodontitis. A. YOSHIIHARA\*, N. SUGITA, K. YAMAMOTO, T. KOBAYASHI, Y. ANDO, H. MIYAZAKI, and H. YOSHIE (*Niigata University, Niigata City, Japan*).

**1395** 3:30 Analysis of TNF-α Polymorphisms in Japanese Patients with Early-onset Periodontitis. M. ENDO\*, H. TAI, K. TABETA, T. KOBAYASHI, K. YAMAZAKI, and H. YOSHIE (*Department of Periodontology, Faculty of Dentistry, Niigata University, Japan*).

**Seq#: 161 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Makuhari Messe: Conv Hall B**

**Periodontal Research - Regenerative Therapy**

**Chairpersons: E. Machtei and J. Needleman**

**1396** 1:45 Presence of EMDOGAIN® on Human Teeth Following Periodontal Surgery. A. SCULEAN\*, P. WINDISCH, T. KEGLEVICH, and S.P. LYGSTADAAS (*University of Saarland, Germany; Semmelweis University, Budapest, Hungary; and University of Oslo, Norway*).

**1397** 2:00 Long-term Evaluation Following Treatment with Enamel Matrix Proteins of GTR. A. SCULEAN, N. DONOS, N. ARWEILER, A. MILIAUSKATE, and M. BRECX\* (*University of Saarland, Homburg, Germany; and University of Berne, Switzerland*).

**1398** 2:15 Evaluation of a Bioresorbable Space-providing Macro-porous Membrane with rhBMP-2. U.M.E. WIKESJÖ, W.H. LIM\*, R.C. THOMSON, A. COOK, J.M. WOZNEY, and W.R. HARDWICK (*Temple University, Genetics Institute, Inc., and W.L. Gore & Associates, Inc., USA*).

**1399** 2:30 Space-providing ePTFE Devices Increase rhBMP-2-induced Bone Formation. U.M.E. WIKESJÖ, A. XIROPAIDIS\*, A. COOK, R.C. THOMSON, K.A. SELVIG, J.M. WOZNEY, and W.R. HARDWICK (*Temple University, Genetics Institute, Inc., Bergen University (Norway), and W.L. Gore & Associates, Inc., USA*).

**1400** 2:45 Utilization of BMP-7 (OP-1) for the Treatment of Class II Furcation Defects. H.-L. WANG\*, P. BUNYARATAVEJ, M.G. LAYHER, P. WEST, J. CONNOR, and S. PAADRE (*School of Dentistry, University of Michigan, Ann Arbor, and Stryker Biotech, Hopkinton, MA, USA*).

**1401** 3:00 The Effect of Membrane Exposure on the Outcome of Regenerative Procedures in Humans: A Meta-analysis. E.E. MACHTEI\* and M. PELED (*Rambam Medical Center and Faculty of Medicine, Technion-IIT, Haifa, Israel*).

**1402** 3:15 A Systematic Review of Guided Tissue Regeneration for Periodontal Infrabony Defects. I. NEEDLEMAN, R. TUCKER\*, E. GIEDRYS-LEEPER, and H. WORTHINGTON (*Eastman Dental Institute, UCL, and Cochrane Collaboration, Oral Health Group, Manchester, UK*).

**1403** 3:30 Bio-Oss® and Biogran® Interfere with Bone Formation by GTR. A. STAVROPOULOS\*, L. KOSTOPOULOS, J.R. NYENGAARD, and T. KARRING (*Royal Dental College, University of Aarhus, Denmark*).

**Seq#: 162 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 2**

**Pharmacology, Therapeutics, & Toxicology - Effects of Medications**

**Chairpersons: S. Helal and P. Phantumvanit**

**1404** 1:45 Medications during Pregnancy and Delayed Eruption/Defective Formation of Infants' Deciduous Dentition. S. HELAL\* (*Alexandria Dental Research Center, Egypt*).

**1405** 2:00 Effects of Fluoride and Arsenic on Bone Density and Strength of Femur Bone in Mice. N. SHIMIZU\*, T. SATO, T. TANAKA, and M. NIWA (*Department of Preventive and Community Dentistry, School of Dentistry at Tokyo, Nippon Dental University, Japan*).

**1406** 2:15 Relationship between Urinary F Levels of Post-menopausal Women and Decrease in Bone Mineral Density. T. SATO\*, T. TANAKA, and M. NIWA (*Department of Preventive and Community Dentistry, School of Dentistry at Tokyo, Nippon Dental University, Japan*).

**1407** 2:30 Apoptosis by Curcumin via Reactive Oxygen Species. T. ATSUMI\*, I. IWAKURA, S. FUJISAWA, and T. UEHA (*School of Dentistry, Meikai University, Sakado, Saitama, Japan*).

**1408** 2:45 Evaluation of Estrogenic Substances in Denture Soft Liners. Y. HASHIMOTO\*, M. KAWAGUCHI, K. MIYAZAKI, and M. NAKAMURA (*Osaka Dental University, and Fukuoka Dental College, Japan*).

**1409** 3:00 Trabecular Bone Area of Mandible in Osteoporotic Rats. G. JIANG\*, H. MATSUMOTO, and A. FUJII (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

3:15 Discussion

**Seq#: 163 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 5**

**Prosthodontics Research - Removable Prosthodontics: Denture Experiences, Food Preferences, Occlusion, Soft Liners**

**Chairpersons: N. Garrett and G. Carlsson**

- 1410** 1:45 Prior Denture Experience and Patient Evaluations. S. OCHI\*, H.F. MORRIS, and N.D. GLASSCOCK (*Department of Veterans Affairs Medical Center, Ann Arbor, MI, USA*).
- 1411** 2:00 Food Preference Comparisons between Dentates and Denture Wearers. N. GARRETT\*, M. HAMADA, E. ROUMANAS, and K. KAPUR (*UCLA School of Dentistry, VA GLAHS, Weintraub Center, Los Angeles, USA*).
- 1412** 2:15 Interrelationships between Patient Satisfaction and Food Preference Variables. K. KAPUR\*, N. GARRETT, M. HAMADA, and E. ROUMANAS (*UCLA School of Dentistry, VA GLAHS, Weintraub Center, Los Angeles, USA*).
- 1413** 2:30 Posterior Mandibular Ridge Height in Denture Wearers with Diabetes. E. CHUNG\*, N. GARRETT, M. HAMADA, E. ROUMANAS, and K. KAPUR (*UCLA School of Dentistry, VA GLAHS, Weintraub Center, Los Angeles, CA, USA*).
- 1414** 2:45 Occlusion of Mandibular Implant-supported Fixed Prostheses Opposing Maxillary Complete Dentures. A. WENNERBERG, G.E. CARLSSON\*, and T. JEMT (*Göteborg University, Sweden*).
- 1415** 3:00 A One-year in vivo Evaluation of the Silicone Soft Liner—Sofreliner MS. J.D. JONES\*, W. GARDNER, and J. GEERTSEMA (*University of Texas Dental School at San Antonio, USA*).
- 1416** 3:15 Bond Strength of Soft Relining Materials after Replacing. R. LANG\*, M. ROSENTRITT, M. BEHR, G. HANDEL, and P. TAUBENHANS (Department of Prosthetic Dentistry, University of Regensburg, Germany).
- 1417** 3:30 A Clinical Study Evaluating Compliance of Resilient Denture Liners. I.J. PESUN\*, A. VILLAR, J.S. HODGES, L. ISON, C. DOYEN, M.E. BROSKY, J.H. LAI, D. SCHNEIDER, and M. NOBLE (*School of Dentistry, University of Minnesota, Minneapolis, and LAI Laboratories, Inc., Burnsville, MN, USA*).

**Seq#: 164 Friday, June 29, 1:45 pm - 3:45 pm**  
**Oral Session, Prince Hotel: Hall 11**

**Pulp Biology - Dentin Hypersensitivity**

**Chairpersons: M. Wolff and C. Cox**

- 1418** 1:45 Effectiveness of Two Arginine-containing Toothpastes in Reducing Dentinal Hypersensitivity. M.S. WOLFF\*, H. KAUFMAN, and I. KLEINBERG (*State University of New York, Stony Brook, USA*).
- 1419** 2:00 Hydrodynamic Evaluation of the Ability of a Calcium Arginine Bicarbonate/Carbonate Complex (SensiStat™) to Plug Patent Dentinal Tubules. I. KLEINBERG\*, R. CHATTERJEE, and M.S. WOLFF (*State University of New York, Stony Brook, USA*).
- 1420** 2:15 Comparison of Hemostatic Agents on Vital Pulp. A.A. HAFEZ\*, A.H. HAFEZ, J.H. BAILEY, J.D. RUBY, H. KOPEL, B. TARIM, and C.F. COX (*UAB, Birmingham, AL, USA; Ulm University, Germany; Istanbul, Turkey; and UCLA, Los Angeles, CA, USA*).
- 1421** 2:30 Biological Success with Pulp Capping: Comparative Factors of Technique Sensitivity. C.F. COX\*, A.A. HAFEZ, J.H. BAILEY, J.D. RUBY, B. TARIM, H. KOPEL, and Y.-T. HSU (*UAB, Birmingham, AL, USA; Istanbul, Turkey; and UCLA, Los Angeles, CA, USA*).

- 1422** 2:45 Influences of Aqueous Organic Solutions on the Dentin/Pulp Complex. S. MIYAKOSHI\*, T. INOUE, S. MURAKAMI, K. MATSUZAKA, and M. SHIMONO (*Department of Pathology, O.H.S.C., Tokyo Dental College, Chiba, Japan*).
- 1423** 3:00 Configuration of C-shaped Canals in Mandibular Molars in the Chinese Population. B. FAN\*, W.X. CHEN, M.W. FAN, and Z. BIAN (*College & Hospital of Stomatology, Wuhan University, PR China*).
- 1424** 3:15 SEM Study of Dentinal Development in the NOS-3 Knockout Mouse. T. KRAGE\*, K. ZANGER, and W.H.-M. RAAB (*Heinrich-Heine-University, Duesseldorf, Germany*).
- 1425** 3:30 Scanning Electron and Light Microscopic Study of Enamel, Dentin, and Cementum in Vitamin-D-resistant Rickets. R.S. FULTON\* and A.B. CARTER (*University of Texas Health Science Center, Houston, and Texas Children's Hospital, USA*).

**Seq#: 165 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Prosthodontics Research - Fixed Prosthodontics: Interfacial Bond Strengths, Dowel and Core**

- 1426** Effect of Gold Intermediate Layer on Bond Strength of PFM. Y.N. WANG\* and Z. WANG (*College & Hospital of Stomatology, Wuhan University, PR China*).
- 1427** Bond Strength and Characteristics of (Ti,Al)N Coating on Dental Alloys. K.H. CHUNG\*, J.G. DUH, D. SHIN, and R.J. CRONIN (*National Yang Ming University, and National Tsing Hua University, Taiwan; and Department of Prosthodontics, Health Science Center, University of Texas, San Antonio, USA*).
- 1428** Application of a Preliminary Photo-curing Unit to Enhance Composite-to-Metal Bonding. N. TANOUE\*, S. SHIMOE, M. ATSUTA, and H. MATSUMURA (*Hospital of Dentistry, and School of Dentistry, Nagasaki University, Japan*).
- 1429** Tensile Strengths of New 4-META Cement and Crown Materials. J.C. CHANG\*, S.H. KOH, D.G. VAUGHN, J.C. STEWART, and D.P. WARREN (*Houston Biomaterials Research Center, University of Texas-Houston Dental Branch, USA*).
- 1430** Bond Strength of Composite Resin to Zirconia Ceramics. S. INO\*, M. ATSUMI, N. HAMANO, T. TAMURA, T. FUJITA, and M. TOYODA (*Department of Prosthodontics, Kanagawa Dental College, Yokosuka, Japan*).
- 1431** Cyclic Loading of Incisors Restored with Different Post Systems. A. RATHKE\*, S.D. HEINTZE, and G. ZAPPINI (*Ivoclar-Vivadent AG, Schaan, Liechtenstein*).
- 1432** Determining the Effect of the Post on Corono-radicular Reconstruction. T. OSADA\*, S. HU, K. WARITA, and T. KAWAWA (*School of Dentistry, Showa University, Tokyo, Japan*).
- 1433** Finishing Line Location of Preparation for Post and Core Restoration. P. AIMJIRAKUL\*, T. MASUDA, D. OKADA, and H. MIURA (*Graduate School, Tokyo Medical and Dental University, Japan*).
- 1434** Fatigue Resistance of Fiber Posts: A Comparative Study. P. BALDISSARA\*, F. PIERI, and A. ARCIDIACONO (*Department of Prosthodontics, University of Bologna, Italy*).
- 1435** The Effects of Cements on the Coronal Microleakage of Parallel-sided Posts. E. PAMUK\* and N. CABIOĞLU (*Faculty of Dentistry, University of Istanbul, Turkey*).
- 1436** Evaluation of the Fracture Resistance of Zirconia Posts in All-ceramic Post and Core Restorations. S.M. JEONG\*, J.H. JEONG, D.W. KANG, K. LUDWIG, and M. KERN (*Department of Prosthodontics, School of Dentistry, University of Chosun, Kwang-Ju, Korea; and Department of Prosthodontics, Christian-Albrechts University, Kiel, Germany*).

**1437** The Effects of Various Cements on the Coronal Microleakage of Screw Posts. N. CABIOĞLU\* and E. PAMUK (*Faculty of Dentistry, University of Istanbul, Turkey*).

**1438** Fracture Strength of Restorations with All-ceramic Posts and Cores. W. FRIEDEL\* and M. KERN (*Christian-Albrechts University at Kiel, Germany*).

**1439** Tensile Bond Strength of New Panavia F to Tooth Structure. E. FRENZEL\* and M. KERN (*Christian-Albrechts University at Kiel, Germany*).

**Seq#: 166 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Adhesion of Antibacterial and Fluoride-containing Materials**

**1440** Bonding Durability and Fluoride Uptake to Dentin of a New All-in-One Adhesive. K. IKEMURA, K. SHINNO\*, A. FUJII, K. KIMOTO, Y. KOURO, and N. NEGORO (*Department of Research and Development, Shofu Inc., Kyoto, Japan*).

**1441** Factors That Influence the Long-term Bond Strength of Current Adhesives. Y. WANG\*, M. HEISS, and B.I. SUH (*Bisco, Inc., Schaumburg, IL, USA*).

**1442** Long-term Durability of Two Adhesive Systems *in vivo*. A. TAKAHASHI\*, C. KAWAMOTO, S. INOUE, R. OMINATO, Y. SATO, T. TANAKA, S. UNO, and H. SANO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**1443** Long-term Durability of Dentin Bonds Using a Fluoride-releasing Resin-adhesive System. M. NAKAJIMA\*, M. OKUDA, M. OGATA, P.N.R. PEREIRA, J. TAGAMI, and D.H. PASHLEY (*Tokyo Medical and Dental University, Japan; University of North Carolina, and Medical College of Georgia, USA*).

**1444** Bond Strength and Microleakage of a New F-releasing Adhesive System. K. YAMAMOTO\*, H. TANIMOTO, K. NARIKAWA, and M. INOUE (*Department of Operative Dentistry, Osaka Dental University, Japan*).

**1445** Characteristics of a New Antibacterial Self-etching Primer "ABP". K. NAKATSUKA\*, M. KAWASHIMA, and J. YAMAUCHI (*Kuraray Co., Ltd., Kurashiki, Okayama, Japan*).

**Seq#: 167 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Cement Properties**

**1446** Assessment of Cement Space Associated with CEREC-manufactured Crowns. R. AMREIN\*, H.C. NGO, and M. FRASER (*Dental School, Adelaide University, South Australia*).

**1447** Mechanical Properties of Luting Cements during Hardening in Layers with High C-factor. N. DE JAGER\*, M.P. AARNTS, and A.J. FEILZER (*Department of Dental Materials Science, ACTA, The Netherlands*).

**1448** Depth-of-Cure Study of a New Veneer Cement. M.S. KONINGS\*, A. TUMEY, J.L. GALLARDO, and A. VERSLUIS (*3M Dental Products, St. Paul, and MDRCBB-University of Minnesota, Minneapolis, USA*).

**1449** IR Analysis on Curing Behavior of Resin-modified Glass-ionomer Cements. K. IKEDA\*, A. FUJISHIMA, M. YAMAMOTO, M. INOUE, M. SUZUKI, T. MIYAZAKI, and R. SASA (*School of Dentistry, College of Arts and Sciences, Showa University, Tokyo, Japan*).

**1450** Physical Properties from Various Changes in the Manufacturing Conditions of F-PRG. Y. UEMURA\*, S. TAKANO, T. KITAMURA, and K. MIYAI (*Research and Development, Shofu Inc., Kyoto, Japan*).

**1451** Properties of Resin-modified Glass-ionomer Cement Containing Bioactive Glasses. I.D. ANA\*, S. MATSUYA, and M. OHTA (*Kyushu University, Fukuoka, Japan*).

**1452** Erosion of Water-based Cements Evaluated by Volumetric and Gravimetric Methods. R. NOMOTO\*, K. UCHIDA, Y. MOMOI, and J.F. McCABE (*Tsurumi University, Yokohama, Japan; and University of Newcastle upon Tyne, UK*).

**1453** Properties of Calcium Phosphate Cements Containing Tristrontium Phosphate. A. MORIYAMA\*, Y. HIBINO, T. HOSHINO, K. KURAMOCHI, T. YAMAGA, and H. NAKAJIMA (*Meikai University School of Dentistry, Sakado, Saitama, Japan*).

**1454** Influence of Staphylococci and Streptococci on the Dissolution of Hydroxyapatite and Tricalcium Phosphate. I. ATASICAKIR KURKCUOGLU, R.L. SAMMONS\*, and S.J. WILSON (*University of Birmingham, UK*).

**1455** Improvement of Mechanical Degradation after Steam Sterilization in Dental Stone. Y.U. KIM\*, Y.-K. LEE, K.M. KIM, and K.N. KIM (*College of Dentistry, Yonsei University, Seoul, Korea*).

**1456** *In vitro* Dissolution Rates of Various Bone Graft Materials. S. TAKAGI\*, L.C. CHOW, C. KAMPRAD, S. FRUKHTBYEN, and M. MARKOVIC (*ADAHF Paffenbarger Research Center, NIST, Gaithersburg, MD, USA*).

**1457** Flexural Fatigue Strength of CAD/CAM Composite and Resin Cements. K. YOSHIDA\*, J.R. CONDON, M. ATSUTA, and J.L. FERRACANE (*Nagasaki University, Japan; and Oregon Health Sciences University, Portland, USA*).

**Seq#: 168 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Glass Ionomers, Compomers, Orthodontic Materials, and General Interest**

**1458** Evaluation of Two Years of Atraumatic Restorative Treatment in Babies. M.S. SAMPAIO\*, M.C. FIGUEIREDO, and D.B. ROSITO (*Baby Clinic, School of Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil*).

**1459** Clinical Performance of Glass-ionomer Restorations in Posterior Teeth. H. KOMATSU\*, Y. KOBAYASHI, N. YAMAGAMI, and H. SANO (*Graduate School of Dental Medicine, Hokkaido University, Japan*).

**1460** Clinical Performance of an RMGI Adhesive System—24-month Results. H.C. NGO, M. FRASER, V. BURGESS\*, and R.J. SMALES (*Dental School, Adelaide University, South Australia*).

**1461** Results of a Clinical Examination of Compomers after 18 Months. K.H. KUNZELMANN, K.C. HUTH, A. RENCZ\*, and R. HICKEL (*University of Munich, Germany*).

**1462** Dyract AP as a Class IV Restorative—One-year Evaluation. B.Y.Y. MOK\*, J. NEO, and C.L. CHEW (*National University of Singapore*).

**1463** One-year Clinical Evaluation of Dyract Flowable Compomer. E.I. ADACHI\*, D.M. BARNES, and E. ROMBERG (*University of Maryland Dental School, Baltimore, USA*).

**1464** Failure of Brackets and Fluoride Release from Different Bonding Systems. A. PERMPIBOON, P. NISALAK, R. SURARIT\*, P. JAOCHAKARASIRI, and C. KAEWSURI-YATHUMRONG (*Mahidol University, Bangkok, Thailand*).

**1465** Fluoride-containing Cement for Bracket Bonding: Clinical Trial. J.M. BUJALDON\*, R. RODRIGUEZ, M. TOLEDANO, and R. OSORIO (*University of Granada, Spain*).

**1466** Changes in Occupational Health Problems and Adverse Patient Reactions in Orthodontics. N. JACOBSEN\* and A. HENSTEN-PETTERSEN (*University of Oslo, and Scandinavian Institute of Dental Materials, NIOM, Haslum, Norway*).

**1467** Complete Retention of Dual-cure Sealant with Bonding Primer. J.M. SOH\*, I.C. PUNWANI, N. SOH, C.Y. HA, and A. KOERBER (*University of Illinois at Chicago, USA*).

**1468** Polymer-coated Enamel Plaque Accumulation and Caries in Orthodontic Patients. F. BERGSTRAND\*, A.-C. FORNELL, K. SKÖLD-LARSSON, A. HALLGREN, and S. TWETMAN (*3M Unitek, Dental Center, Halmstad, and Umeå University, Sweden*).

**1469** Gingival Reactions around and Plaque Formation on an Experimental Ceramic Filling Material. K. KONRADSSON\*, J.W.V. van DIJKEN, and K. SUNNEGÅRDH-GRÖNBERG (*Department of Odontology, Dental School Umeå, Sweden*).

**1470** Intracoronal Bleaching of Discolored Nonvital Teeth. M. BIZHANG\*, A. HEIDEN, U. BLUNCK, S. ZIMMER, R. SEEMANN, and J.-F. ROULET (*Department of Operative and Preventive Dentistry, Charité Berlin, Germany*).

**1471** Clinical Efficacy of a New Carbamide Peroxide Bleaching Agent—A Pilot Study. C.-P. ERNST, T. WIECHERS\*, and B. WILLERSHAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**1472** Miniature Extractor for Fractured Endodontic Instruments. K. HASEGAWA\*, M. HATTORI, M. YOSHINARI, E. KAWADA, and Y. ODA (*Tokyo Dental College, Chiba, Japan*).

**1473** Application of Magnetic Attachments as Retainers for Denture-type Appliances. A. TSUNEOKA\*, S. FUKUMOTO, K. KUBOTA, Y. KAMASAKI, H. HIROTA, Y. HOSOYA, and G. GOTO (*Nagasaki University, Japan*).

**Seq#: 169 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Mechanical Properties**

**1474** Dynamic and Static Indentation Creep of Tooth-colored Restorative Materials. T. MAEDA, F. AGARIE\*, T. EGURO, K. TAKAHASHI, and H. TANAKA (*Nippon Dental University, Tokyo, Japan*).

**1475** Evaluation of Fracture Toughness of 13 Hybrid Composite Resins. J. MANHART\*, N. ILIE, H.Y. CHEN, K.H. KUNZELMANN, and R. HICKEL (*Department of Restorative Dentistry, Dental School of the LMU, Munich, Germany*).

**1476** Shear Punch Strength and Flexural Strength of Model Composites. I. IKEJIMA\*, R. NOMOTO, A. KOHNO, and J.F. McCABE (*Newcastle University, UK; and Tsurumi University, Japan*).

**1477** Flexural Strength Evaluation of Selected Restorative Materials. M.V. FUENTES, L. CEBALLOS, J.M. RUIZ\*, M. TOLEDANO, R. OSORIO, and F. GARCÍA-GODOY (*University of Granada, Spain; and Tufts University, Boston, USA*).

**1478** Strengthening a Conventional Glass-ionomer Cement Using Hydroxyapatite. M.E. LUCAS\*, K. ARITA, and M. NISHINO (*University of Tokushima, Japan*).

**1479** Influence of Silane Concentration for Filler Silanization on the Tensile Strength of Composites. K.S. LEE\*, S.J. PARK, B.B. CHOI, and H.N. LIM (*College of Dentistry, Kyung Hee University, Seoul, Korea*).

**1480** Strength Effects for Composite when in Contact with Eugenol vs. Epoxy-resin. B.L. MUSIKANT\*, B.I. COHEN, Y. VOLOVICH, and A.S. DEUTSCH (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**1481** Development of Resin Composite Including Organic Mili-fillers. N. INAI\*, K. HASHIMOTO, N. KATAHIRA, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**1482** Bioresorbable Poly-L-lactide Composites Under Optimized Preparation for Possible Plastic/Maxillofacial Surgery Applications. Y.-C. HUANG\*, S.-Y. LEE, C.-T. LIN, C.-C. CHEN, and H. TSENG (*Taipei Medical University, Taiwan*).

**Seq#: 170 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Dental Alloys, Amalgam, Dental Magnet**

**1483** Corrosion Behavior of Amorphous Co-Fe-Cr Alloy in Saline Solution. K. ENDO\*, I. KAWASHIMA, H. OHNO, K. YOKOYAMA, and K. ASAOKA (*Health Sciences University of Hokkaido, Ishikari-Tobetsu, and Tokushima University, Japan*).

**1484** Corrosion of Non-precious Type III Casting Alloys. L. RECLARU\*, H. LÜTHY, C.P. MARINELLO, P.Y. ESCHLER, C. SUSZ, and D. BRATU (*PX Tech S.A., la Chaux-de-Fonds, Qualident S.A. Geneva, University of Zürich, and University of Basel, Switzerland; and University of Timisoara, Romania*).

**1485** Effect of Ga Addition on Mechanical Properties of 35Ag-30Pd-20Au-15Cu Alloy. S. GOTO\*, P. CHURNJITAPIROM, Y. MIYAGAWA, and H. OGURA (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**1486** Dental Line Cleanser Effect on Sieved Amalgam Fractions. E.D. PEDERSON\*, J.C. RAGAIN, M.E. STONE, R. AUXER, R.S. KARAWAY, and S. DAVIS (*Naval Dental Research Institute, Great Lakes, IL, USA*).

**1487** Urinary Mercury Excretion in Guatemalan Dental Students and Teachers. E. MILIÁN, R.A. CARRILLO\*, R.A. SÁNCHEZ, and M.A. CHAVEZ (*School of Dentistry, School of Pharmacy, University of San Carlos, Guatemala*).

**1488** Effect of Palladium on Hardness and Microstructure of High-copper Amalgam. E. MIURA\*, K. HISATSUNE, and T. OKABE (*School of Dentistry, Nagasaki University, Japan; and Baylor College of Dentistry, Dallas, USA*).

**1489** Development of the Removable Prosthetic Appliance Using Pt-Fe Magnetic Alloys. T. KANNO\*, K. HAOKA, O. OKUNO, and K. KIMURA (*Tohoku University, Japan*).

**1490** Finite Element Modeling Design of a Thin Dental Magnetic Attachment. L. TIAN\*, A. WATARAI, K. ARAI, and Y. HONKURA (*Aichi Steel Corp., Tokai, and Tokyo Medical and Dental University, Japan*).

**1491** Attractive Force of Magnetic Attachment Influenced by its Separated Direction. M. YATABE\*, H. MIZUTANI, A. NISHIYAMA, T. HAKETA, M. KOTAKE, X. KIM, and T. OHYAMA (*Tokyo Medical and Dental University, Japan*).

**1492** Development of a Thin-type Dental Magnetic Attachment. K. ARAI\*, T. NAGAO, L. TIAN, and Y. HONKURA (*Aichi Steel Corp., Tokai, and Tokyo Medical and Dental University, Japan*).

**1493** Minimizing Dental Alloy Artifacts in MR Imaging. F. SHAFIEI\*, E. HONDA, H. TAKAHASHI, F. NISHIMURA, and T. SASAKI (*Tokyo Medical and Dental University, Japan*).

**Seq#: 171 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Orthodontics/Impression Materials/Curing Light/Biological Response**

**1494** Biomechanics of the Multiloop Edgewise Archwire with Class III Elastics. S. MATSUI\*, A.A. CAPUTO, S. KOBAYASHI, and H. KANEGAE (*School of Dentistry, Meikai University, Saitama, Japan; and School of Dentistry, UCLA, USA*).

**1495** Laboratory Evaluation of Orthodontic Band Cements. D.T. MILLETT\*, S. DUFF, L. MORRISON, A. CUMMINGS, and W.H. GILMOUR (*University of Glasgow, UK*).

**1496** Bracket Designed for the Use of Esthetic Orthodontic Wires. M. UGA\*, F. WATARI, M. KOBAYASHI, S. YAMAGATA, N. SUWA, and J. IIDA (*Hokkaido University, Sapporo, Japan*).

- 1497** Evaluation of the Dimensional Stability of Polyvinylsiloxane for Monophase Technique. A. SCRASCIA\*, F. Di CARLO, A. SCARANO, R. SCARINGI, and N. NOROUZI (University of Rome "La Sapienza", and University of Chieti, Italy).
- 1498** Dimensional Behavior of Class IV Gypsum with Polyvinylsiloxane Impressions. A. SCRASCIA, G. POMPA, L. MALCHIODI, C. BOTTOS\*, and A. QUARANTA (University of Rome "La Sapienza", and University of Chieti, Italy).
- 1499** Dimensional Accuracy of Dies Made from Fixed Agar/Alginate Impressions. H. UCHIDA\*, H. HIRAGUCHI, H. NAKAGAWA, N. TANABE, and H. HABU (Nihon University School of Dentistry, Tokyo, Japan).
- 1500** Effects of Irradiation Time and Intensity of High-intensity Light. K. HASHIMOTO\*, N. KATAHIRA, N. INAI, and J. TAGAMI (Tokyo Medical and Dental University, Japan).
- 1501** Depth of Cure of a New Blue LED Light-curing Device. C.-P. ERNST, M. SCHEIBLICH\*, A. VICTOR, and B. WILLERS-HAUSEN (Johannes Gutenberg-University, Mainz, Germany).
- 1502** Depth of Cure of a New Soft-start Polymerization Unit. C.-P. ERNST, B. ZIEGER\*, A. VICTOR, and B. WILLERS-HAUSEN (Johannes Gutenberg-University, Mainz, Germany).
- 1503** Antibacterial Activity of DNA-Artificial Lipid Complexes. Y. INOUE\*, T. HAYAKAWA, T. FUKUSHIMA, H. TAKEUCHI, H. KANIMISHI, K. MIYAZAKI, and Y. OKAHATA (Fukuoka College of Health Sciences, Nihon University School of Dentistry at Matsudo, Chiba, Fukuoka Dental College, and Tokyo Institute of Technology, Kanagawa, Japan).
- 1504** Durability of Bactericidal Activity in Electrolyzed Acid Water by Storage. Y. NAGAMATSU\*, K. TAJIMA, H. KAKIGAWA, and Y. KOZONO (Kyushu Dental College, Kitakyushu, Japan).
- 1505** Osteogenic Effect *in vitro* by a Composite of Bioglass and Polymer. M. JAMALIBEH\*, B. WU, D. NATHANSON, D. COTTRELL, and L. CHOU (Goldman School of Dental Medicine, Boston University, MA, USA).
- 1506** Biodegradation Behavior of RF Magnetron-sputtered Hydroxyapatite/Titanium Coatings. S.J. DING\*, C.P. JU, and J.H. CHERN LIN (Chung-Shan Medical & Dental College, Taichung, and National Cheng-Kung University, Tainan, Taiwan).

**Seq#: 172 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Diagnostic Systems - Robots/Tests**

- 1507** Human Papillomavirus Type 38 Infection in Oral Squamous Cell Carcinomas. A. KOJIMA\*, Y. SUGITA, S. TANAKA, H. MAEDA, and Y. KAMEYAMA (School of Dentistry and Research Institute of Advanced Oral Science, Aichi-Gakuin University, Nagoya, Japan).
- 1508** Methods of Assessing Oral Malodor: Variability, Similarity, and Measurement Levels. G.J. MAJERUS\*, P.A. LENTON, J.S. HODGES, B.L. PIHLSTROM, and M.D. LEVITT (University of Minnesota, and Veterans Administration Hospital, Minneapolis, MN, USA).
- 1509** Measurement of Masseter Muscle Oxygenation Using Near-infrared Spectroscopy. A. KONDO\*, H. ISHIKAWA, Y. SATO, and J. IIDA (Hokkaido University, Sapporo, and Fukuoka Dental College, Japan).
- 1510** Occlusal Contacts and Function of the Masseter and Temporalis Muscles. S.V. HÜNING\* and M.L.F. CHAVES (Univ. Fed. Rio Grande do Sul, Porto Alegre, Brazil).
- 1511** Hypersensitivity to Dental Materials in Patients with Oral Mucosal Lesions. H.S. JEON\*, S.J. MIN, M.Y. KO, and J.S. PARK (Pusan National University, Korea).

- 1512** Multiplex PCR for the Simultaneous Detection of *Actinobacillus actinomycetemcomitans*, *Bacteroides forsythus*, and *Porphyromonas gingivalis* from Saliva. P. Di TELLA\*, E. KÖNÖNEN, and H. JOUSIMIES-SOMER (National Public Health Institute, Helsinki, Finland; and CEMIC, Argentina).
- 1513** Tele-operated Dental Robot—Results of the First Prototype Tests. A. OKON\* and M. GANOWICZ (Department of Conservative Dentistry, Warsaw Medical University, Poland).
- 1514** Developmental Research on a Robot System that Simulates Mandibular Movement. M. KIKUCHI\*, N. KAWAHATA, K. YUI, H. YOSHIDA, Y. ARAI, I. NAKAJIMA, and M. AKASAKA (Nihon University, Tokyo, Japan).
- 1515** Wavelet Transforms of TMJ Vibrations for Detection of Internal Derangements. J. RADKE\*, R. KETCHAM, R. GARCIA, C. STEVENS, and B. GLASSMAN (BioResearch Associates, Inc., Milwaukee, WI, USA).
- 1516** The Use of Ultrasonic Waves for Diagnosing Tooth Cracks or Fracture. M. IGARASHI\*, T. OHIRA, and K. KAWASAKI (School of Dentistry at Niigata, Nippon Dental University, Japan).
- 1517** PCR-based Typing from the DNA of Severely Burned Tooth for Sex Identification. NUGROHOWATI\* (Faculty of Dentistry, University of Prof. Dr. Moestopo, Indonesia).
- 1518** The Pain Perception Scale to Nd-YAG Laser Stimulation and Keratinization Rate of Oral Mucosa in Burning Mouth Syndrome Patients. J.-Y. KIM and B.-G. KIM\* (Department of Oral Medicine, School of Dentistry, Chonnam National University, and CNUDSRI, Korea).

**Seq#: 173 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Behavioral Sciences/Health Services Research - Health Care Delivery, Health Promotion**

- 1519** The Role of Mass Media on Betel-quid Chewing Habit. J.S. HUANG\*, C.H. LEU, S.M. LI, S.T. WANG, and S.C. HU (National Cheng Kung University, Tainan, Taiwan).
- 1520** Dental Health Status of Thai Adolescents Living in Low- and High-fluoride Areas. S. JIENMANEECHOTCHAI, S. DALODOM\*, W. VEJVITHI, W. KAEWPINTA, and T. TAWANWONG (Ministry of Public Health, Thailand).
- 1521** Oral Health Care Delivery Models for Schoolchildren in Southern Thailand. W. EUNGPOONSAWAT\* and P.E. PETERSEN (Prince of Songkla University, Thailand; and University of Copenhagen, Denmark).
- 1522** Effectiveness of Worksite Dental Health Promotion Activities. T. ICHIHASHI\* and T. MUTO (The Lion Foundation for Dental Health, and Department of Public Health, School of Medicine, Juntendo University, Tokyo, Japan).
- 1523** Oral Hygiene of Preschool Children and Practice Support by Caretakers. S. TIANVIWAT\*, J. PATTARA-ARCHACHAI, C. KIATIPRAJUK, and D. KAEWKHUNTEE (Prince of Songkla University, Mahidol University, and Ministry of Public Health, Thailand).
- 1524** Maternal and Child Oral Health Promotion Program at Health Center. C. HAKUTA\*, M. KAWAGISHI, and Y. KAWAGUCHI (Tokyo Nakano Health Center Nanbu Branch, and Tokyo Medical and Dental University, Japan).
- 1525** Risk Indicators of Tooth Loss: Tobacco Smoking and Oral Diseases. S. CHATRCHAIWIWATANA\* (Khon Kaen University, Thailand).
- 1526** Oral Health Score and Tooth Loss Prediction in Residents. N. KUMAGAI\*, I. MORITA, A. TOYAMA, and H. NAKAGAKI (Department of Preventive Dentistry and Dental Public Health, School of Dentistry, Aichi-Gakuin University, Japan).

**Seq#: 174 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Cariology Research - Plaque, Caries Pathology, Quantitative Techniques, Diagnosis, Remineralization, Demineralization, Studies**

**1527** Biochemical Composition of Dental Plaque Formed in the Presence of Different Frequencies of Sucrose and Use of Fluoridated Dentifrice. A.F. PAES LEME\*, C.M. TABCHOURY, A.A. DEL BEL CURY, and J.A. CURY (*FOP-UNICAMP, Brazil*).

**1528** Effect of Erythrose on Adherence and Enamel Demineralization by *S. sobrinus*. S. GOTOH\*, T. KAMODA, M. NIWA, T. NISIZAWA, N. HANADA, and S. IMAI (*National Institute of Infectious Diseases, Tokyo, Bio Science Laboratories, Meiji Seika LTD., Saitama, and Nippon Dental University at Tokyo, Japan*).

**1529** Site-Specific Relationship among Ca, PO<sub>4</sub>, F Contents in Dental Plaque. M. HIROSE\*, S. YAHATA, D. MATSUMOTO, S. IGARASHI, and H.C. MARGOLIS (*Department of Pediatric Dentistry, Health Sciences University of Hokkaido, Japan; and Forsyth Institute, Boston, MA, USA*).

**1530** Ultrastructural Analysis of Dental Plaque on Synthetic Carbonate Apatite Applied to Human Teeth Surfaces. S. SAKU\*, S. YAMAMOTO, T. YAMADA, H. TAKEUCHI, and Y. YAMAMOTO (*University of Asahi, Gifu, Japan*).

**1531** Thin Acetate Peel Sections of Dental Caries: A New Technique. F. ÖZER, Ş. KARAKAYA, S. BELLİ, and F. AKGÜNLÜ\* (*University of Selçuk, Konya, Turkey*).

**1532** Direct Observation of Demineralization of Teeth by Polarized Microscopy. Y. SATO\*, H. AOKI, T. SATO, M. NIWA, and F. HIROTA (*Nippon Dental University, Tokyo, Japan*).

**1533** Observation of Early Caries Lesion Formation of Deciduous Enamel *in vitro*. M. UEMURA\*, T. DOI, M. MOTOYAMA, and M. KAMBARA (*Osaka Dental University, Japan*).

**1534** Surface Analysis of Active and Arrested Caries Using pH-imaging Microscope. Y. KITASAKO\*, N. HIRAIISHI, M. NAKAJIMA, T. NIKAIIDO, J. TAGAMI, and S. NOMURA (*Tokyo Medical and Dental University, and Horiba Ltd., Japan*).

**1535** Effects of Cationic Cellulose on Lesion Remineralization Measured by QLF. E. NISHINAGA\*, H. SANO, S. NAKASHIMA, and K. KANEKO (*Lion Corporation, Tokyo, Japan*).

**1536** Effect of Dehydration on White-spot Quantification with QLF *in vitro*. M. ANDO\*, D.T. ZERO, G.J. ECKERT, and G.K. STOOKEY (*Indiana University School of Dentistry, Indianapolis, USA*).

**1537** Roughness of Enamel Surface—Quantitative and Qualitative Profilometric Studies. T. MATTHEWS-BRZOZOWSKA\* (*Karol Marcinkowski University of Medical Sciences, Poznań, and Wrocław Medical University, Poland*).

**1538** The Effects of the Degree of Saturation of Acidulated Buffer Solutions in Enamel and Dentin Remineralization. J.W. PARK\* and C.Y. LEE (*Kyungpook National University, Taegu, and Yonsei University, Seoul, South Korea*).

**1539** *In situ* Remineralization of Artificial Enamel Lesions with Synthetic Hydroxyapatite. A. SURDACKA\* and T. MATTHEWS-BRZOZOWSKA (*University of Medical Sciences, Poznań, Poland*).

**Seq#: 175 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Implantology Research - Biomechanics - In vitro Studies**

**1540** Intentionally Inclined Implant Installation in Mandibular Posterior Region. T. SATOH\*, Y. MAEDA, M. SOGO, Y. KOMIYAMA, and T. SHIMIZU (*Osaka University, and Brånemark Osseointegration Center, Tokyo, Japan*).

**1541** Effects of Splinting Prosthesis of Different Materials on Peri-implant Bone Strain under Dynamic Load. M.S. LEE\*, S.H. KOK, L.-D. LIN, and J.S. WANG (*School of Dentistry, National Taiwan University, Taipei*).

**1542** Peri-implant Bone Stress under Dynamic Loading. T.M. WANG\*, L.-D. LIN, J.S. WANG, and L.J. LEU (*School of Dentistry and Department of Civil Engineering, National Taiwan University*).

**1543** Effects of Implant Elastic Modulus on Peri-implant Bone Stress Distribution. L.-D. LIN\*, T.M. WANG, and J.S. WANG (*School of Dentistry, National Taiwan University, Taipei*).

**1544** 3D FEM Analysis of Bone-surrounding Osseointegrated Dental Implant. J. SHIMADA\*, K. TAJIMA, Y. NAGAMATSU, H. KAKIGAWA, and Y. KOZONO (*Materials Science, Kyushu Dental College, Japan*).

**1545** Interactions among Implant Diameter, Length, Threads, and Load Transfer. H. ITOH\*, S. MURAYAMA, H. NAKAHARA, T. KUROE, and A.A. CAPUTO (*Tohoku University, Miyagi National Hospital, and Hokkaido University, Japan; and UCLA, USA*).

**1546** Scanning Electron Fractography of Fractured Dental Implants. M. PIOMBINO\*, A. SCARANO, T. TRAINI, S. CAPUTI, G. IEZZI, G. PETRONE, and G. ORSINI (*Dental School, University of Chieti, Italy*).

**1547** Photoelastic Analysis of a Dry Greyhound Skull under Simulated Masticatory Load. R.B. JUDGE\*, J.E.A. PALAMARA, H.M.S. DAVIES, R. TAYLOR, and J.C. CLEMENT (*School of Dental Medicine, University of Melbourne, Victoria, Australia*).

**1548** Influence of Primary Stability of Implants in Sinus Graft Models. M.I. FANUSCU, L. HO, G. FERSZTMAN\*, and A.A. CAPUTO (*UCLA School of Dentistry, USA*).

**1549** Vibration Analysis for the Implant-Abutment Interface. S. TANAKA\*, Y. HAGIWARA, N. HINOKIYAMA, M. KOIZUMI, and T. IGARASHI (*School of Dentistry, Nihon University, Tokyo, Japan*).

**Seq#: 176 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral Health Research - Oral Health Needs, Dental Services Utilization, Oral Age Index**

**1550** Comparison of Oral Health Status/Needs of Hispanic and Asian Women. A.A. CHOAYEB\* and A.R. VOLPE (*Howard University, Washington, DC, and Colgate Palmolive, Piscataway, NJ, USA*).

**1551** Clinical Evaluation of the Status of Dentition in Polish Children Aged 7 and 12 in East Poland. M. MIELNIK-BŁASZCZAK and K. FETKOWSKA-MIELNIK\* (*Medical University of Lublin, Poland*).

**1552** Use of Dental Services by Patients with Rheumatoid and Osteoarthritis. V. POKRAJAC-ZIROJEVIC\*, D.R. BOOTH, and L.M. SLACK-SMITH (*School of Dentistry, University of Western Australia*).

**1553** Dental Services and Periodontal Health Needs for People with Diabetes. A.L. SAINT\*, D.R. BOOTH, J. SWAIN, and L.M. SLACK-SMITH (*School of Dentistry, University of Western Australia*).

**1554** The Factors That Promote the Dental Health Consultation of Adults. Y. HINO\*, Y. MISHIGE, H.-O. ITO, and M. INOUE (*Department of Preventive Dentistry, Kagoshima University Dental School, Japan*).

**1555** Application of a New Index, Oral Age, for Oral Health. M. KAMBARA\*, T. INOUE, M. UENE, M. UEMURA, T. MIYAKE, and K. KAWASAKI (*Osaka Dental University, Japan*).

**Seq#: 177 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Mineralized Tissue - BMP's and Regeneration**

**1556** Gene Expressions of BMP-2 and BMP-1B in Vertebra. M. ONO\*, T. SEKIWA, F. KUWATA, S. OIDA, and T. INAGE (*Nihon University School of Dentistry, and Tsurumi University, Japan*).

**1557** Pleiotrophin Regulates BMP-induced Ectopic Osteogenesis. Y. SATO\*, H. TAKITA, N. OHATA, and Y. KUBOKI (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**1558** Different Induction of Tissue Non-specific ALPases by BMP2. T.T. BABA\* and S. OIDA (*Nagasaki University, and Tsurumi University, Yokohama, Japan*).

**1559** Chemotactic Responses of Periodontal Ligament Fibroblasts toward rhBMP-2. T. UKEGAWA\*, K. UNO, N. SATO, N. OHATA, H. TAKITA, M. MIZUNO, and Y. KUBOKI (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**1560** Chondrogenic or Osteogenic Differentiation of a Cell Line by rhBMP-2. Y. UYAMA\*, K. YAGAMI, K. OTA, S. KAKUTA, and M. NAGUMO (*Showa University, Tokyo, Japan*).

**1561** Titanium Wires in Feasible Geometry Induce Bone When Combined with BMP. Y. KUBOKI\*, K. TSUJI, G.-X. ZHANG, T. KAMEYAMA, S. HIGASHIKAWA, K. NIIMI, Y. SATOH, Y. OJIMA, and H. TAKITA (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**1562** An Anti-angiogenic Agent Enhances Chondrogenesis in BMP-induced Ectopic Bone Formation. H. TAKITA\*, M. KIKUCHI, Y. SATO, and Y. KUBOKI (*Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).

**Seq#: 178 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Microbiology/Immunology & Infection Control - Antimicrobials**

**1563** A Novel Mechanism for Oral Malodor Inhibition by Glucose. N. STERER\* and M. ROSENBERG (*Goldschleger School of Dental Medicine, Tel Aviv University, Israel*).

**1564** A Pilot Study of Denture Stomatitis Treatment in Nursing Home Residents. B.C. WEBB\* and C.J. THOMAS (*Faculty of Dentistry, University of Sydney, Australia*).

**1565** Antimicrobial Effects of Low Concentrations of Chlorhexidine and Sodium Hypochlorite. W. KLIMM\*, W. PFISTER, S. EICK, and R. KOCH (*University of Dresden, and Friedrich Schiller University of Jena, Germany*).

**1566** Turbidometric Evaluation of Polyene-azole Antagonism in *C. albicans*. Y.H. SAMARANAYAKE, L.P. SAMARANAYAKE\*, and S.K.W. YEUNG (*Oral Bio-Sciences, Faculty of Dentistry, University of Hong Kong, SAR, China*).

**1567** pH-dependent Xylitol Uptake and Subsequent Glycolysis Inhibition in *Streptococcus mutans*. H. MIYASAWA\*, Y. IWAMI, T. SATO, H. MAYANAGI, and N. TAKAHASHI (*Divisions of Pediatric Dentistry and Oral Biochemistry, Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**1568** Rapid Identification of Oral Mutans Streptococci by 16S rRNA Genes PCR-RFLP. T. SATO\*, J. MATSUYAMA, and N. TAKAHASHI (*Oral Biochemistry, Graduate School of Dentistry, Tohoku University, Sendai, and Pediatric Dentistry, Graduate School of Dentistry, Niigata University, Japan*).

**1569** Xylitol Inhibition of Acid Production from Various Sugars by *Streptococcus mutans*. H. KAKUTA\*, Y. IWAMI, H. MAYANAGI, and N. TAKAHASHI (*Divisions of Pediatric Dentistry and Oral Biochemistry, Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**1570** Antibacterial Effects of Berberine on Antibiotic-resistant *Staphylococcus aureus*. H.K. KIM, J.D. CHA, Y.S. KIM, Y.O. YOU\*, and K.J. KIM (*Department of Oral Biochemistry, and Department of Oral Microbiology, School of Dentistry, Wonkwang University, Iksan, Chonbuk, Korea*).

**1571** Growth of Gram-negative Periodontal Pathogenic Bacteria is Inhibited by EMDOGAIN®. S.P. LYGSTADAAS\*, A. SPAHR, and C. ANDERSSON (*University of Oslo, Norway; University of Ulm, Germany; and Biora AB, Malmö, Sweden*).

**1572** Effect of Chinese Herb Toothpaste on Oral Malodor and Bacteria. M. ZHU\* and Z. LIU (*School of Stomatology, Shanghai Second Medical University, China*).

**1573** Clinical Evaluation of LSTR 3Mix-MP Therapy for Perforated Roots. T. TAKUSHIGE\* and E. HOSHINO (*Niigata University, Japan*).

**1574** Microbiologic Assessment of "Dentafrício" on Biofilm of Patients with Denture Stomatitis. A.M. AGOSTINHO\*, C.B. PONTES, K.M. FREITAS, C.H. LOVATO, H.F.O. PARANHOS, H. PANZERI, I.Y. ITO, and E.H.G. LARA (*FORP and FCFRP, USP, São Paulo, Brazil*).

**1575** Mastic Gum as an Adjunctive Tool for Oral Prophylaxis. M. FUKAZAWA\*, K. TAKAHASHI, K. WATANABE, S. AMANO, H. OCHIAI, and T. MIYATA (*Departments of Periodontology and Microbiology, Meikai University School of Dentistry, Saitama, Japan*).

**1576** Salivary Microbiota Levels of Adult Sudanese Habitual Miswak and Toothbrush Users. N. SKAUG\*, I.A. DAROUT, and J.M. ALBANDAR (*Schools of Dentistry, University of Bergen, Norway; and Temple University, Philadelphia, USA*).

**1577** Coating Denture Surfaces with a Substantive Polymer Reduces Denture Stomatitis. W.A. COULTER, C.E. SHELBURNE\*, Z.N. AL-DWAIRI, and S.B. MITRA (*Queen's University of Belfast, Northern Ireland; and 3M, St. Paul, MN, USA*).

**Seq#: 179 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Microbiology/Immunology & Infection Control - Antimicrobials**

**1578** Antimicrobial Activities of Trifluoromethionine on Methyl Mercaptan-producing Bacteria. M. YOSHIMURA\*, Y. NAKANO, and T. KOGA (*Department of Preventive Dentistry, Faculty of Dental Science, Kyushu University, Fukuoka, Japan*).

**1579** Effects of *Chrysanthemum boreale* Volatile Substances on Oral Pathogenic Micro-organisms. H.K. KIM, J.D. CHA\*, Y.S. KIM, Y.O. YOU, and K.J. KIM (*Department of Oral Biochemistry, and Department of Oral Microbiology, School of Dentistry, Wonkwang University, Iksan, Chonbuk, Korea*).

**1580** Effect of *Phyllanthus emblica* Linn. on Adherence of *C. albicans*. S. THAWEBON\* and B. THAWEBON (*Mahidol University, Bangkok, Thailand*).

**1581** Comparison of Green Tea Polyphenol and Fluoride on *Streptococcus mutans*. M.Y. LI\* and Z. LIU (*Shanghai Research Institute of Stomatology, Shanghai Second Medical University, PR China*).

**1582** Antimicrobial Action of Propolis against Oral and Oropharyngeal Microflora. S.R. BRAILSFORD\*, E. SORENSEN, and D. BEIGHTON (*GKT Dental Institute, London, UK; and Dandy A/S, Vejle, Denmark*).

**1583** Inhibitory Effects of Some Herbal Extracts on Adherence of *Streptococcus mutans*. J. LIMSONG and E. BEN-JAVONGKULCHAI\* (Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand).

**1584** Antimicrobial Effects of Phenolic Compounds Derived from Perilla Seed. H. YAMAMOTO\* and T. OGAWA (School of Dentistry, Asahi University, Gifu, Japan).

**1585** Inhibitory Effects of Cranberry Juice on Adhesion of Oral Bacterial Species. A. YAMANAKA\*, R. KIMIZUKA, T. MIURA, T. KATO, and K. OKUDA (Tokyo Dental College, Chiba, Japan).

**1586** Impact of Lysozyme and Lactoferrin on *Candida* spp. Pre-exposed to Antimycotics. S. ANIL\*, A.N.B. ELLEPOLA, and L.P. SAMARANAYAKE (Faculty of Dentistry, University of Hong Kong).

**1587** Effect of Bovine Lactoferrin on Saliva-induced Aggregation of *Streptococcus mutans*. M. MITOMA\*, T. OHO, Y. SHIMAZAKI, and T. KOGA (Kyushu University Faculty of Dental Science, Fukuoka, Japan).

**1588** Killing of Anaerobic Oral Pathogens by a Small Antimicrobial Peptide. S.P. CONCANNON\* (US Army Dental Research Detachment-Walter Reed Army Institute of Research, Great Lakes, IL, USA).

**1589** Fungicidal Activity of Histatin-5 against *Candida* Species. H. NIKAWA\*, C. JIN, H. FUKUSHIMA, S. MAKIHIRA, T. HAMADA, and L.P. SAMARANAYAKE (Hiroshima University, Japan; and Hong Kong University, China).

**1590** *In vitro* Antimicrobial Activity of Chitooligosaccharide against *Actinobacillus actinomycetemcomitans* and *Streptococcus mutans*. B.K. CHOI\*, Y.J. YOO, K.Y. KIM, J.H. CHOI, and C.Y. KIM (Yonsei University, Seoul, and Ecobio Inc., Kwangju, Korea).

**1591** The Antimicrobial Activities of Low-molecular-weight Chitosan. Y.M. KO\* and S.W. HONG (Chosun University, Kwang-Ju, Korea).

**1592** Complex Glycans Inhibit Dental Decay in Gnotobiotic Rats. R. SEEMANN\*, T. KERSTEN, N.-C. JUHR, S. ZIMMER, and A. KAGE (Charité, Humboldt-University, Robert Koch-Institute, and Free University, Berlin, Germany).

**Seq#: 180 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Oral & Maxillofacial Surgery - Dento-alveolar, Orthognathic Surgery/Surgical Pathology**

**1593** A Retrospective Study of Trigeminal Abnormal Sensation after Dental Treatment. S. ABE\*, K. SUNADA, M. YAMASHIRO, and H. FURUYA (Department of Anesthesiology, Nippon Dental University at Tokyo, Japan).

**1594** Innervations in the Tongue. Y. TAMATSU\* and K. SHIMADA (Kagoshima University Dental School, Japan).

**1595** Age Changes in 3D Structure of Lingual Papillae and Their Connective Tissue Cores in the Human Tongue. K. KOBAYASHI\*, M. KUMAKURA, and K. YOSHIMURA (Department of Anatomy, Nippon Dental University at Niigata, Japan).

**1596** Experiences of an Interdisciplinary Study Group Using an Intra-operative Navigation System. M. SIESSEGER\*, R. MISCHKOWSKI, B. KLESPER, B. KRUG, and J.E. ZÖLLER (Department of Oral and Maxillofacial Surgery, University of Cologne, Germany).

**1597** Circulatory Dynamics during Dental Extractions in Normal, Cardiac, and Transplant Subjects. L. MONTEBUGNOLI, M. COZZI\*, D. SERVIDIO, and C. PRATI (University of Bologna, Italy).

**1598** Saliva in Patients with Different Rheumatic Diseases. M. HELENIUS\*, J.H. MEURMAN, I. HELENIUS, K. KARI, R. SUURONEN, M. LEIRISALO-REPO, and C. LINDQVIST (Department of Oral and Maxillofacial Diseases, and Medical Division of Rheum., Helsinki University Central Hospital, and Institute of Dentistry, University of Helsinki, Finland).

**1599** Relationship between the Maxillary Sinus and Teeth Apices among Japanese. T. NAKAMURA\*, H. ODA, T. NAGAO, E. ARIJI, S. TSUBOI, and H. NAKAGAKI (Aichi-Gakuin University, and Brother Hospital, Nagoya, Japan).

**1600** Histological Aspects of Maxillary Sinus Lifting with Beta-tricalcium-phosphate (CERASORB). G. PERFETTI\*, G. PODDA, F. RIPARI, S. ANNIBALI, G. IEZZI, and A. SCARANO (Dental School, University of Chieti, and Dental School, University of Rome, Italy).

**1601** Methods of Improving Alveolar Ridge Maintenance Following Tooth Extraction. D.K. HWANG\*, D. RAJSHANKAR, S.A.F. PEEL, and C.M.L. CLOKIE (Orthobiologics Research Group, Oral and Maxillofacial Surgery, University of Toronto, Canada).

**1602** Analysis of Mandibular Movements in Mandibular Asymmetries after Orthognathic Surgery. K. SUGA\*, C. SAITO, and T. UCHIYAMA (Tokyo Dental College, Chiba, Japan).

**1603** Soft Tissue Changes after Double Jaw Surgery in Skeletal Class III Malocclusion. E.J. CHO\* and W.S. YANG (Department of Orthodontics, College of Dentistry, Seoul National University, Korea).

**1604** The Conventional and Robotic Orthognathic Model Surgery Techniques. M.A. BAMBER\*, T. THEODOSSY, R. RICHARDS, St.-J. CREAN, and M. HARRIS (Eastman Dental Institute, University College London, UK).

**1605** Polygenic Determinants of Maxillofacial Discrepancies and Deformities. I. NISHIMURA, J. NADEAU, and J.H. ZERNIK\* (University of California, Los Angeles, Case Western Reserve University, and University of Southern California, Los Angeles, USA).

**1606** Prevalence of Early-onset Periodontitis and Risk Indicators. F. HERRERA\*, M. ZAZUETA, and G. JIMENEZ (Faculty of Dentistry, Autonomous University of Campeche, Mexico).

**1607** Detection of Sulfur in Melanosome of Melanomas and Melanosis. Y.J. LEE\*, N. NAGAOKA, K. NAKANO, Y. KITAMURA, C.H. SIAR, M.K. AHSON, A. IAMAROON, H.G. LIU, J.K. LEE, and N. NAGAI (Okayama University, Japan; University of Malaya, Malaysia; Bangladesh Institute of Research and Rehabilitation, Bangladesh; Chiang Mai University, Thailand; Capital Medical University, China; and Ajou University, Korea).

**Seq#: 181 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Periodontal Research - Genetic and Local Inflammatory Markers**

**1608** Association of Interleukin-1 Genotypes with Periodontal Status in Chinese Individuals. P. HUANG\*, H. HUANG, R. PANG, H. LIU, and J. ZHANG (West China College of Stomatology, Chengdu, China; and Health Care Research Center, Procter & Gamble, Ohio, USA).

**1609** Interleukin-10 Gene Promoter Polymorphism in Japanese Patients with Periodontitis. K. TABETA\*, T. NAKAJIMA, Y. OHSAWA, K. UEKI, H. ITOH, H. YOSHIE, and K. YAMAZAKI (Niigata University, Japan).

**1610** The Polymorphisms of Fcγ RIIA, FcγR IIIB, and TNF A-308 in Chinese Patients with Advanced Periodontitis. J. ZHANG\*, W. QIAN, R. PANG, P. HUANG, and Y. ZHANG (West China College of Stomatology, Sichuan University, Chengdu, China).

**1611** Polymorphism in the Osteocalcin Gene and Adult Periodontitis. Y. TACHI\*, H. SHIMPUKU, M. SHINOHARA, Y. NOSAKA, T. KAWAMURA, M. UEDA, H. IMAI, and K. OHURA (*Departments of Pharmacology and Periodontology, Osaka Dental University, Kobe Nishi City Hospital, and Kawamura Dental Clinic, Japan*).

**1612** Telomere Length as a Novel Risk Marker for Early-onset Periodontitis. H. NISHIDA\*, K. TAKAHASHI, H. TAKEDA, T. AZUMA, H. MOTOHIRA, K. SHIN, and T. MIYATA (*Department of Periodontology, Meikai University School of Dentistry, Saitama, Japan*).

**1613** Comparison of IL-6 in GCF between Active and Non-active Periodontitis Sites. Y. WU\*, C. ZHAO, and J. ZHANG (*College of Stomatology, West China University of Medical Sciences, Chengdu, Sichuan, PR China*).

**1614** Analysis of Matrix Metalloproteinase-3 in Human Gingival Crevicular Fluid. J. OKAZAKI\*, A. KAMADA, A. KAWAMOTO, and G. EMBERY (*Osaka Dental University, Japan; and University of Liverpool, UK*).

**1615** Anti-inflammatory Medication, MMP-8 Levels, and Proteolytic Enzyme Activities in Saliva. K. LIEDE\*, P. MÄNTYLÄ, J. HAUUKA, H. RÖNKÄ, and T. SORSA (*University of Helsinki, Finland*).

**1616** Cleavage of Osteopontin (OPN) by Matrix Metalloproteinases (MMPs). Y. MIYAKAWA\*, T. KUBOTA, F. RAHEMTULLA, and S. SATO (*Kanagawa Dental College, Japan; and School of Dentistry, University of Alabama, USA*).

**1617** Characterization of a Protease from Bovine Periodontal Ligament. Y. MIYAKAWA, T. KUBOTA, F. RAHEMTULLA, and S. SATO\* (*Kanagawa Dental College, Japan; and School of Dentistry, University of Alabama, USA*).

**1618** Nitric Oxide Synthase Activity in Neutrophils from LJP Patients. K. SHIBATA\*, N. MIZUNO, H. YOSHINO, T.E. VAN DYKE, and H. KURIHARA (*Faculty of Dentistry, Hiroshima, Japan; and Goldman School of Dental Medicine, Boston University, USA*).

**1619** Collection Methodology for Subgingival Fluid Samples in Periodontal Pockets. K.T. UNDERWOOD\*, M.R. JOHNSON, C. BALTUCK, K. ORTBLAD, and B. HENCH (*Philips Oral Healthcare, Inc., Snoqualmie, WA, USA*).

**1620** Expression of Decorin mRNA in Inflamed Human Gingival Tissue. A. KAWAMOTO\*, A. KAMADA, J. OKAZAKI, Y. HIGUCHI, N. SASAKI, and G. EMBERY (*Osaka Dental University, Japan; and University of Liverpool, UK*).

**1621** Identification and Characterization of Cultured Human Periodontal Ligament Cell-specific cDNAs. K.Y. HAN\*, H.S. KIM, H.J. KIM, B.O. KIM, and J.C. PARK (*Chosun University, Kwang-Ju, Korea*).

**1622** Comparison of Interleukin-4 Genotypes in Two Populations with Aggressive Periodontitis. J. MEYLE\*, J. MICHEL, A. KOTHE, R.H. BOEDEKER, and J.R. GONZALES (*Justus Liebig Universität, Giessen, Germany*).

**Seq#: 182 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Periodontal Research - Periodontal Ligament

**1623** Expression Profile of Active Genes in Human Periodontal Ligament. S. YAMADA\*, S. MURAKAMI, Y. OZAWA, Y. NAKAHIRA, T. YOKOKOJI, S. TAKAYAMA, K. IKEZAWA, R. MATOBA, K. MATSUBARA, and H. OKADA (*Graduate School of Dentistry, Osaka University, Japan*).

**1624** VEGF-enhanced Expression by Periodontal Pathogens on Gingival and Ligament Fibroblasts. K. SUTHIN\*, K. MATSUSHITA, M. MACHIGASHIRA, M. TORII, and Y. IZUMI (*Kagoshima University Dental School, Japan*).

**1625** The Effect of Nicotine on Periodontal Ligament Cells. H.-K. KIM\* and J.-Y. SUH (*National University of Kyungpook, Taegu, South Korea*).

**1626** The Expression of OPG/OCIF in Human Periodontal Ligament Cells. N. WADA\*, H. MAEDA, E. TSUDA, K. YANO, H. NAKAMUTA, K. TANABE, and A. AKAMINE (*Department of Endodontology and Operative Dentistry, Faculty of Dental Science, Kyushu University, Fukuoka, and Research Institute of Life Science, Snow Brand Milk Products Co., Ltd., Tochigi, Japan*).

**1627** bFGF Enhances Expression and Production of MMP-3 in Human Periodontal Ligament Cells. A. SHIMAZU\* and M. MORISHITA (*Hiroshima University, Japan*).

**1628** Constitutive Expression of Stem Cell Factor in Human Gingival Fibroblasts. E. GAGARI\*, M. RAND, D.E. YUNIS, P. KAR, and P.D. DAMOULIS (*Tufts University, Boston, MA, USA*).

**1629** Actions of Extracellular Matrix Proteins in Human Gingival Epithelial Cells. T. TAMURA\*, J. ARAI, S. USUI, T. TACHIKAWA, and K. HASEGAWA (*Showa University Dental School, Tokyo, Japan*).

**1630** Fibronectin-generated Signals Induce Apoptosis via the  $\alpha 4$  Integrin and Involve JNK. Y.L. KAPILA\* and S. WANG (*University of California, San Francisco, USA*).

**1631** Functions of Nerve Growth Factor in Cultured Periodontal Ligament Cells. H. SHINOHARA\*, H. YOSHINO, D. FUJIOKA, T. SHINDOH, N. SHIBA, and H. KURIHARA (*Hiroshima University, Japan*).

**1632** Distribution of Peptidergic Nerve Fibers in Human Periodontal Tissue. A. SUGAYA\*, H. SUGIMOTO, N. MOGI, H. TSUJIGAMI, and S. DEGUCHI (*Department of Periodontology, Kanagawa Dental College, Yokosuka, Japan*).

**1633** Fibrillins and Tropoelastin Expression of Gingival and Periodontal Ligament Fibroblasts. E. TSURUGA\*, K. IRIE, Y. SAKAKURA, and T. YAJIMA (*Department of Oral Anatomy, School of Dentistry, Health Sciences University, Hokkaido, Japan*).

**1634** Expression of Endothelins in Cultured Cells from Periodontal Tissue. D. FUJIOKA\*, H. YOSHINO, S. NAKAMURA, H. SHINOHARA, N. SHINDOH, H. SHIBA, Y. UCHIDA, K. SHIBATA, and H. KURIHARA (*Hiroshima University, Japan*).

**Seq#: 183 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Periodontal Research - Laser, Rinses, Dentifrice, Chewing Gum

**1635** Desensitizing Effects of an Er:YAG Laser on Hypersensitive Dentin. F. SCHWARZ\*, N. ARWEILER, T. GEORG, and E. REICH (*Dental School, University of the Saarland, Homburg, Germany*).

**1636** Bactericidal Action of Nd:YAG Laser Radiation in Periodontal Pocket. Y. DING\*, J. ZHOU, and L. HU (*College of Stomatology, West China University of Medical Sciences, Chengdu, PR China*).

**1637** Root Surface Roughness Following Treatment with 2.94- $\mu$ m Er:YAG Laser Radiation under Different Radiation Angles. L. THIELE\*, G. GEORGE, M. FOLWACZNY, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, Ludwig-Maximilians-University, Munich, Germany*).

**1638** In vitro Comparison of Manual and Laser Er:YAG Root Planing. S.C. GOMES\*, E. PURICELLI, and R.V. OPPER-MANN (*PPG Odontologia, UFRGS, Brazil*).

**1639** A Triclosan/Copolymer Dentifrice Slows the Progression of Periodontal Disease in At-risk Sites. M.P. CULLINAN\*, B. WESTERMAN, S.M. HAMLET, J.E. PALMER, M.J. FADDY, and G.J. SEYMOUR (*University of Queensland, Australia; and University of Birmingham, UK*).

**1640** The Effect of a Triclosan Copolymer Dentifrice on the Progression of Periodontal Disease. B. WESTERMAN\*, M.P. CULLINAN, J.E. PALMER, and G.J. SEYMOUR (*Oral Care Research Programme, University of Queensland, Australia*).

**1641** Effects of Amine Fluoride/Stannous Fluoride, Triclosan, and ASS on an Established Gingivitis. L. FLORES-DE-JACOBY\* and R. MENGEL (*Philipps University Marburg, Germany*).

**1642** The Effect of Dextranase-containing Mouthwash in Human Experimental Gingivitis. E.J. SON, Y.J. KIM, O.S. KIM, and H.J. CHUNG\* (*Chonnam National University, Gwangju, South Korea*).

**1643** Effect of Mouthrinse Containing *Streblus asper* Leaf Extract on Gingivitis. S. TAWEECHAISUPAPONG\*, S. WONGKHAM, A. RATTANATHONGKOM, S. SINGHARA, T. CHOOPAN, and S. SUPAREE (*Khon Kaen University, Thailand*).

**1644** Ulmus Extract Inhibits Human Collagenase-1. W.K. KIM-PARK\*, L.J. WINDSOR, K.K. PARK, S.S. ROH, S.N. KIM, and H.J. AHN (*Indiana University School of Dentistry, Indianapolis; College of Oriental Medicine, Taejon University, and LG Chemical Ltd./Research Park, Taejon, Korea*).

**1645** Identification of Procyanidin Oligomer as a Matrix Metalloproteinase Inhibitor. S.N. KIM\*, M.M. KIM, S.K. PARK, H.J. AHN, W.K. KIM-PARK, L.J. WINDSOR, K.K. PARK, C.K. KIM, and B.K. CHOI (*LG Chemical Ltd./Research Park, Korea; School of Dentistry, Indiana University, Indianapolis, USA; and College of Dentistry, Yonsei University, Korea*).

**1646** Effects of Novel MMP Inhibitor on Experimental Periodontitis in Hamsters. A. TAKEMURA\*, M. NINOMIYA, T. OHBA, K. KUNIKIYO, H. AZUMA, H. HAMA, SURYONO, H. SHINOHARA, J. KIDO, and T. NAGATA (*Sunstar Inc., Osaka, and Tokushima University, Japan*).

**1647** Chlorhexidine Acetate/Xylitol Chewing Gum and Elderly People's Gingival Health. D. SIMONS\*, S.R. BRAILSFORD, E.A.M. KIDD, and D. BEIGHTON (*Cariology Research Group, GKT Dental Institute, London, UK*).

**1648** Effect of Chewing Gum on Periodontal Blood Flow. I.V. ZAITSEVA\* and N.K. LOGINOVA (*Central Research Institute for Stomatology, Moscow, Russia*).

**Seq#: 184 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Neuroscience/TMJ - Sensory and Motor Functions: Human Studies**

**1649** Head Movements and Neck Muscle Activities during Mastication in Humans. Y. ARAI\*, M. TAKEMASA, and S. KOHNO (*Faculty of Dentistry, Niigata University, Japan*).

**1650** Functional Aspects of Implant-supported Mandibular Overdentures: A Prospective 5-year Study. M. BAKKE\*, B. HOLM, and K. GOTFREDSSEN (*Faculty of Health Sciences, School of Dentistry, University of Copenhagen, Denmark*).

**1651** Relationship between Occlusal Force and Masticatory Efficiency Chewing Gumi-jelly. Y. KOBAYASHI, Y. SHONAI\*, and H. SHIGA (*Nippon Dental University, Tokyo, Japan*).

**1652** Movement of the Human Mandibular Condyle during Unilateral Chewing. S. MIYAWAKI\*, Y. TANIMOTO, A. KATAYAMA, T. KAWAKAMI, M. SUGIMURA, and T. TAKANO-YAMAMOTO (*Okayama University Dental School, Japan*).

**1653** Movement-related Magnetic Fields Associated with the Tongue's Protrusion and Retraction. M. KONISHI\*, H. ITOH, H. NAKAHARA, N. NAKAZATO, K. HATANAKA, and Y. KIKUCHI (*School of Dentistry, Tohoku University, Miyagi National Hospital, Kohnan Hospital, and Elekta.K.K, Japan*).

**1654** Texture of Food Bolus Related to Swallowing Threshold in Humans. K. SHIOZAWA\* and K. YANAGISAWA (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1655** Oral Perception/Motor Ability in Edentulous Patients with Stroke and Parkinsonism. K.C.M. LEUNG\*, E.H.N. POW, A.S. McMILLAN, M.C.M. WONG, L.S.W. LI, and S.L. HO (*University of Hong Kong, HKSAR, China*).

**1656** Effect of Periodontal Afferent on Neck Muscle Activities in Humans. T. TORISU\*, N. HASHIMOTO, H. SUENAGA, R. KANAOKA, T. YOSHIMATSU, and H. FUJII (*School of Dentistry, Nagasaki University, Japan*).

**1657** Quantitative Determination of Auditory Evoked Response by Means of Whole-scalp 306-channel Magnetoencephalography. T. MATSUKUBO\*, Y. KOBAYASHI, T. SATO, H. NAGASAKA, M. YUMOTO, Y. TAKAESU, and T. ISHIKAWA (*Laboratory of Brain Research, Oral Health Science Center, Tokyo Dental College, Chiba, and School of Medicine, University of Tokyo, Japan*).

**Seq#: 185 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Oral Medicine & Pathology - Oral and Maxillofacial Pathology: Animal Studies**

**1658** Pre-clinical Studies of a Recombinant Adeno-associated Virus Encoding IL-10. S. YAMANO\*, D.E. SCOTT, L.-Y. HUANG, J.A. CHIORINI, S.R. PILLEMER, B. GOLDING, and B.J. BAUM (*NIDCR/NIH, and CBER/FDA, Bethesda, MD, USA*).

**1659** Effect of a Combination of DL-lysine and Alloxan on Submandibular Glands and Pancreas. J.D. MÉNDEZ\* (*Mexican Institute of Social Security, Mexico*).

**1660** Responses of H/W and L-E Rat Incisors to 2, 3, 7,8-tetrachlorodibenzo-p-dioxin. A.P. KIUKKONEN\*, M. VILUKSELA, S. ALALUUSUA, C. SAHLBERG, J.T. TUOMISTO, and J. TUOMISTO (*Institute of Dentistry, University of Helsinki, and National Public Health Institute, Kuopio, Finland*).

**1661** Effects of Long-term Blockage/Resumption of Rat Incisor Eruption on Tooth Formation. K. SATO\*, H. YAGISHITA, R. ENARI, Y. SHIMAZU, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**1662** SAMP2/Iw as Animal Model of Spontaneous Tooth Fracture with Age. M. SASHIMA\* and M. SATOH (*Iwate Medical University, Morioka, Japan*).

**1663** Effects of Bisphosphonates on the Healing Process of a Tooth Extraction Wound. N. SAHEKI\*, T. IIZUKA, H. AITA, T. KOHGO, and N. OHATA (*Hokkaido University, Sapporo, Japan*).

**1664** Inhibitory Effect of Incadronate on Periapical Bone Destruction. N. TANI-ISHII\*, D. SAITOH, G. MINAMIDA, H. OMURO, A. SUGAYA, N. HAMADA, Y. TAKAHASHI, A. TSUNODA, K. CHIEDA, S. KIYOHARA, I. KASHIMA, T. TERANAKA, and T. UMEMOTO (*Kanagawa Dental College, Japan*).

**1665** Effects of Bisphenol A on the Bone Metabolism of Ovariectomized Rats. H. MOTOHIRA\*, K. TAKAHASHI, S. YOKOSE, H. TAJIMA, T. KATAYAMA, and T. MIYATA (*Department of Periodontology, Conservative Dentistry, Meikai University School of Dentistry, Saitama, Japan*).

**1666** Biomechanical Acceleration of Experimental Tooth Movement by Ultrasonic Vibration. M. OHMAE\*, S. SAITO, T. MOROHASHI, H. KURABAYASHI, K. SEKI, K. YAMASAKI, S. YAMADA, T. OKANO, and Y. SHIBASAKI (*Showa University, Tokyo, Japan*).

**1667** Roles of Epithelial Cell Rests of Malassez during Cementum Repair. N. HASEGAWA\*, H. KAWAGUCHI, T. OGAWA, A. HIRACHI, T. UCHIDA, and H. KURIHARA (*Hiroshima University, Japan*).

**1668** Experimental Study on Growth of Costochondral Graft in Growing Rabbits. Y. TSUYAMA\*, T. TAKATO, T. SUSAMI, H. HIKIJI, and K. TOMIZUKA (*University of Tokyo, Japan*).

**1669** Oral Candidiasis—Associated Factors Evaluation. F.R. ZANIN, R.V.P. AZEVEDO, and M.C. KOMESU\* (*Faculdade de Odontologia de Ribeirão Preto, USP, Brazil*).

**Seq#: 186 Friday, June 29, 3:45 pm - 5:00 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Craniofacial Biology - Developmental Biology: Mandible Muscles**

**1670** Estrogen and Estrogen Receptor Changes of Condylar Cartilage after Mandibular Advancement. Y.X. BAI, S.J. LUO\*, and X.Y. YAO (*Capital University of Medical Sciences, Beijing, PR China*).

**1671** Detection of Differentially Expressed Genes in Murine Embryonic Mandibles. K. MATSUO\*, I. KOBAYASHI, T. KIYOSHIMA, and H. SAKAI (*University of Kyushu, Fukuoka, Japan*).

**1672** WITHDRAWN

**1673** Essential Role of ET-1 in Mandibular Differentiation. S. WATATANI\*, T. SUSAMI, K. TOMIZUKA, and T. TAKATO (*University of Tokyo, Japan*).

**1674** Temporo-Spatial Patterns of Tissue-marker Expression in Developing Mouse Temporomandibular Joints. Y. KANRI\*, Y. TAYA, R. ENARI, Y. SHIMAZU, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**1675** Developmental Changes of Respiratory Chain of Rat Masseter Muscle Mitochondria. I. SATO\* and K. KONISHI (*Nippon Dental University, Tokyo, Japan*).

**1676** Effects of Diet Consistency on the Fiber Phenotypes of Rat Masseter Muscle during Development. T. SAITO\*, Y. OHNUKI, Y. SAEKI, A. YAMANE, K. YANAGISAWA, and K. ISIBASHI (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1677** Effects of Bite Opening on the mRNA Levels of Insulin-like Growth Factors and Their Receptors in Rat Masseter Muscle. Y. OHNUKI\*, A. YAMANE, Y. SAEKI, and K. YANAGISAWA (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1678** HGF is Essential for Tongue Myogenesis and Morphogenesis in Mouse Embryos. O. AMANO\*, M. SHIMADA, and A. YAMANE (*Kanazawa University, and Tsurumi University, Yokohama, Japan*).

**Seq#: 187 Saturday, June 30, 8:00 am - 8:45 am**  
**Plenary, Makuhari Messe: Conv Hall B**

**Plenary - A Challenging Role of Medical and Biological Engineering in the 21st Century—Physiome Project**

**1679** 8:00 A Challenging Role of Medical and Biological Engineering in the 21st Century—Physiome Project. F. KAJIYA\* (*Okayama University Medical School, and Osaka University, Japan*).

**Seq#: 188 Saturday, June 30, 9:00 am - 11:00 am**  
**Symposium, Makuhari Messe: Room 304**

**Microbiology/Immunology and Salivary Research - Saliva-Pellicle-Bacterium Interactions: The Initial Dynamics of Oral Biofilm Formation**

[Supported by Warner-Lambert]

**Chairperson: R.J. Palmer, Jr.**

**1680** 9:00 Saliva-Pellicle-Bacterium Interactions: The Initial Dynamics of Oral Biofilm Formation. R.J. PALMER, Jr.\*, J.A. BEELEY, M. RYKKE, F. SCANNAPIECO, and P. KOLENBRANDER (*NIDCR/NIH, USA; University of Glasgow, UK; University of Oslo, Norway; and SUNY Buffalo, USA*).

9:05 Binding of Human Salivary Proteins in the Oral Cavity. J. BEELEY (*University of Glasgow, Scotland*).

9:30 Salivary Protein Aggregates and the Acquired Enamel Pellicle. M. RYKKE (*University of Oslo, Norway*).

9:55 Interactions of Bacteria with Saliva. F. SCANNAPIECO (*State University of New York, Buffalo, US*).

10:20 Saliva-induced Gene Expression in Oral Bacteria. P. KOLENBRANDER (*NIDCR/NIH, Bethesda, MD, US*).

10:45 Discussion

**Seq#: 189 Saturday, June 30, 9:00 am - 11:00 am**  
**Symposium, Prince Hotel: Hall 1**

**IADR Mineralized Tissue, Oral and Maxillofacial Surgery, and Implantology Research Groups and the American and Japanese Societies of Oral Biologists - Tissue Engineering and Oral Health [Supported by the American and Japanese Societies of Oral Biologists]**

**Chairpersons: A.I. Spielman and Y. Kuboki**

**1681** 9:00 Tissue Engineering and Oral Health. A.I. SPIELMAN\*, Y. KUBOKI, U.M.E. WIKESJÖ, M. UEDA, B.J. BAUM, and L. TERRACIO (*New York University, USA; Hokkaido University; Temple University, USA; Nagoya University; NIH, and New York University, USA*).

9:05 BMP Technology for Periodontal and Alveolar Reconstruction. U. WIKESJÖ (*Temple University, Philadelphia, PA, US*).

9:30 Application of Tissue Engineering in Oral Surgery, Mucosal and Skin Reconstruction. M. UEDA (*Nagoya School of Medicine, Nagoya, Japan*).

9:55 Re-engineering Salivary Gland Function. B. BAUM (*NIDCR/NIH, Bethesda, MD, US*).

10:20 Tissue Engineering of Artificial Muscle. L. TERRACIO (*New York University, NY, US*).

10:45 Discussion

**Seq#: 190 Saturday, June 30, 9:00 am - 11:00 am**  
**Hands-on Workshop, Makuhari Messe: Room 301 A**

**Educational Research - Special-needs Dentistry Within the Dental Curriculum**

[Supported by the British Society for Disability and Oral Health]

**Chairperson: R. Bedi**

**1682** 9:00 Special Needs Dentistry within the Dental Curriculum. R. BEDI\*, D. O'DONNELL, and M. ALSARHEED (*Eastman Dental Institute, University College London, UK; and University of Hong Kong*).

9:05 Special-needs Dentistry within the Dental Curriculum—An Overview. R. BEDI (*Eastman Dental Institute, London, UK*).

9:35 Special-needs Dentistry in Both Undergraduate and Post-graduate Curricula—Hong Kong Experience. D. O'CONNELL (*Prince Philip Dental Hospital, Hong Kong, China*).

10:05 Attitudes of General Dental Practitioners with Regard to their Undergraduate Experiences in Special-needs Dentistry. M. AISARHEED (*Eastman Dental Institute, London, UK*).

10:35 Discussion

**Seq#: 191 Saturday, June 30, 9:00 am - 11:00 am**  
**Poster Discussion Session, Makuhari Messe:**  
**Room 303**

**Cariology Research - Caries Microbiology, *S. mutans* Inhibition, Plaque Fluoride, Plaque Removal, Transillumination, Composite Marginal Adaptation**

**Chairperson: C. Hsu**

9:00 Poster Viewing

**1683** 9:30 Micro-organisms in Mañoco That Inhibit *S. mutans* Growth. R.A. GONÇALVES, A. MARTINEZ, and A.M. ACEVEDO\* (*Faculty of Science and Institute of Dental Research, Central University of Venezuela, Caracas*).

**1684** 9:40 Attenuation of 1310-nm and 1550-nm Laser Light through Dental Enamel. R.S. JONES\* and D. FRIED (*University of California, San Francisco, USA*).

**1685** 9:50 Secondary White-spot Lesions Affect *in vitro* Composite Marginal Adaptation. G.L. GALVANI, S. CHERSONI\*, M. ZANARINI, R. MONGIORGI, L. MONTEBUGNOLI, and C. PRATI (*School of Dentistry, and Department of Environmental Sciences, University of Bologna, Italy*).

**1686** 10:00 Fluoride Concentration in Normal and Mouthrinsed Plaque *in vivo*. S. TSUBOI\*, S.R. WOOD, B. NATTRESS, H. NAKAGAKI, J. KIRKHAM, and C. ROBINSON (*Aichi-Gakuin University, Japan; and University of Leeds, UK*).

**1687** 10:10 Aciduric Microflora in Dentin Caries Lesions. A. LAGER\*, G. SVENSÅTER, and D. ERICSON (*Faculty of Dentistry, Malmö University, Sweden*).

**1688** WITHDRAWN

**1689** 10:20 Effects of Novel Mutanase and Dextranase on Plaque Removal. M. HIRANO\*, Y. TAKINO, M. OHDERA, and K. KANEKO (*Lion Corporation, Kanagawa, Japan*).

10:30 Discussion

**Seq#: 192 Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 B**

**Craniofacial Biology - Cell/Tissue Biology**

**Chairpersons: M. Cui and N. Suda**

**1690** 9:00 Accumulation of Phagocytosed Collagen in Periodontal Ligament Fibroblasts of MT1-MMP-deficient Mice. W. BEERTSEN\*, K. HOLMBECK, P. BIANCO, K. CHRYSOVERGIS, H. BIRKEDAL-HANSEN, and V. EVERTS (*ACTA, Amsterdam, The Netherlands; and NIDCR, Bethesda, MD, USA*).

**1691** 9:15 A Truncated Receptor Blocks rhBMP-2-induced Signal Transduction in NIH3T3 Fibroblasts. Y. JIN, Y. LIU\*, G.L. TIPOE, F. SUWA, and Y.R. FANG (*Stomatological College, 4th Military Medical University, Xi'an, China; Faculty of Medicine, University of Hong Kong; and Osaka Dental University, Japan*).

**1692** 9:30 Intercellular Mechanotransduction through Adherens Junctions in Fibroblasts. K.S. KO\* and C.A.G. McCULLOCH (*University of Toronto, Ontario, Canada*).

**1693** 9:45 Cytokine Expression as a Consequence of Orthodontic Tooth Movement and/or Root Resorption. J. REYNA\*, E. GRAGEDA, H.B. MOON, E. LI, F. YACAMAN-VIDJAK, and M. ZEICHNER-DAVID (*CCMB, USCSD, Los Angeles, CA, USA*).

**1694** 10:00 The Effect of Periostin on Osteoclast Differentiation and Activation. J. WILDE\*, K. HIURA, M. YOKOZEKI, S. KIDO, D. INOUE, T. MATSUMOTO, A. KUDO, and K. MORIYAMA (*University of Tokushima, and Tokyo Institute of Technology, Yokohama, Japan*).

**1695** 10:15 Down-regulation of RANKL in the Alveolar Bone of PTHrP-knockout Mice. N. SUDA\*, Y. KITAHARA, K. FUKADA, T. KURODA, P. SENIOR, F. BECK, and V.E. HAMMOND (*Tokyo Medical and Dental University, Japan; and University of Melbourne, Australia*).

**1696** 10:30 Roles of Insulin-like Growth Factors and Their Binding Proteins in Myogenesis of the Mouse Tongue. A. YAMANE\*, Y. OHNUKI, Y. SAEKI, and M. CHIBA (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**1697** 10:45 TGF- $\beta$ 3 Intracellular Signaling is Required for Inhibition of MEE Proliferation. X.-M. CUI\*, J. CHEN, T. YAMAMOTO, M. MOGASS, Y. CHAI, and C.F. SHULER (*School of Dentistry, University of Southern California, USA*).

**Seq#: 193 Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 2**

**Dental Materials - Adhesion: Ultrastructural Studies**

**Chairpersons: S. Wei and R. Carvalho**

**1698** 9:00 Ultrastructural Study of an All-in-One Adhesive Containing Pre-reacted Glass-ionomer Fillers. C.K.Y. YIU\*, F.R. TAY, H. SANO, J. TAGAMI, M. HASHIMOTO, and D.H. PASHLEY (*University of Hong Kong; Hokkaido University, and Tokyo Medical and Dental University, Japan; and Medical College of Georgia, Augusta, USA*).

**1699** 9:15 The Glass-ionomer Phase in Resin-based Restorative Materials. F.R. TAY, E.L. PASHLEY\*, C. HUANG, M. HASHIMOTO, H. SANO, R.J. SMALES, and D.H. PASHLEY (*University of Hong Kong; Medical College of GA, Augusta, USA; Hokkaido University, Japan; and University of Adelaide, Australia*).

**1700** 9:30 Ultrastructure and Bonding of High-strength GIC to Dentin. S.H.Y. WEI\*, F.R. TAY, H.C. NGO, R.J. SMALES, and D.H. PASHLEY (*University of Hong Kong; University of Adelaide, Australia; and Medical College of Georgia, Augusta, USA*).

**1701** 9:45 Interfacial Characterization of Resin-modified Glass Ionomers Bonded to Dentin. B. VAN MEERBEEK\*, Y. YOSHIDA, S. INOUE, R. FUKUDA, M. OKAZAKI, P. LAMBRECHTS, and G. VANHERLE (*Catholic University of Leuven, Belgium; Hiroshima University, and Hokkaido University, Japan*).

**1702** 10:00 Adhesion/Decalcification Mechanisms of Acid Interactions with Human Hard Tissues. M. YOSHIOKA\*, Y. YOSHIDA, B. VAN MEERBEEK, P. LAMBRECHTS, G. VANHERLE, M. OKAZAKI, and H. SHINTANI (*Hiroshima University, Japan; and Catholic University, Leuven, Belgium*).

**1703** 10:15 Submicron Hiati in Acid-etched Dentin are Iatrogenic Artifacts. K.A. AGE\*, E.L. PASHLEY, A. ITTHAGARUN, F.R. TAY, and D.H. PASHLEY (*Medical College of Georgia, Augusta, USA; and University of Hong Kong, HKSAR, China*).

**1704** 10:30 Nanoleakage Patterns of Caries-affected Dentin of Three Adhesive Systems. S. KUBO\*, H. LI, M.F. BURROW, and M.J. TYAS (*School of Dentistry, Nagasaki University, Japan; and University of Melbourne, Australia*).

**1705** 10:45 The Use of Oxalate to Reduce Dentin Permeability under Adhesive Restorations. D.H. PASHLEY, R.M. CARVALHO\*, J.C. PEREIRA, and F.R. TAY (*Medical College of GA, Augusta, USA; FOB USP, Brazil; and Prince Philip Hospital, Hong Kong, China*).

**Seq#: 194 Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Conv Hall B**

**Dental Materials - Dentin/Enamel Adhesives, Resin-based Cements, and Bleaching**

**Chairpersons: M. Tyas and C. Toh**

**1706** 9:00 Clinical Evaluation of the Role of Glutardialdehyde in One-bottle Adhesives. W.J. FINGER\*, G. DONDI dall'OROLOGIO, and A. LONE (*University of Cologne, Germany; University of Bologna, Italy; and Private Practice, Abu Dhabi, United Arab Emirates*).

**1707** 9:15 Clinical Evaluation of EBS Resin Bonding System: 3-year Results. M.J. TYAS\* and M.F. BURROW (*University of Melbourne, Australia*).

**1708** 9:30 Two-year Clinical Evaluation of a 3-step Conventional Dentin Bonding System. M.F. BURROW\* and M.J. TYAS (*School of Dental Medicine, Melbourne University, Australia*).

**1709** 9:45 The Short-term Clinical Observation on the Newly Designed Adhesive Resin Cement, "XENO CEM". M. MORIGAMI\*, J. SUGIZAKI, S. IGARASHI, S. HORIGUCHI, M. KATSUMI, H. HASHIMOTO, and T. YAMADA (*Toranomon Hospital Dental Clinic, Tokyo, Japan*).

**1710** 10:00 Pulp Capping with a Resin-based Ca-PO<sub>4</sub> Cement. S.H. DICKENS\*, G.E. SCHUMACHER, G.M. FLAIM, and D.R. SCHAFER (*ADAHF PRC, NIST, Gaithersburg, MD, and US Navy Dental Corps, Bethesda, MD, USA*).

**1711** 10:15 Nine-month Evaluation of Bleaching Agents in Patients with Tetracycline Staining. B.A. MATIS\*, Y.N. WANG, T. JIANG, G.J. ECKERT, and M.A. COCHRAN (*School of Dentistry, Indiana University, Indianapolis, USA; and Stomatology College & Hospital, Wuhan, PR China*).

**1712** 10:30 Clinical Evaluation of a High-concentration At-home Bleaching Agent. X. YU\*, D. OUELLET, and R. IBSEN (*Den-Mat, Santa Maria, CA, USA*).

**1713** 10:45 Clinical Evaluation of a Home Bleaching System Using Three Progressive Strengths of Carbamide Peroxide—1-year Results. C.G. TOH\* (*Faculty of Dentistry, University of Malaya, Kuala Lumpur, Malaysia*).

**Seq#: 195 Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 3**

**Dental Materials - Endodontics**

**Chairpersons: B. Marroquin and E. Medioni**

**1714** 9:00 Dimensional Stability of Tapered Gutta-percha Points. B. BRISEÑO MARROQUIN\*, B. HAGEDORN, and B. WILLERSHAUSEN (*Department of Conservative Dentistry, Johannes Gutenberg University, Mainz, Germany*).

**1715** 9:15 Cytotoxicity of Root Canal Sealers on Different Culture Systems. F.M. HUANG\*, M.Y. CHOU, K.W. TAI, and Y.C. CHANG (*School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan*).

**1716** 9:30 Cytotoxicity and Genotoxicity Evaluation of Root Canal Sealers. K.W. TAI\*, F.M. HUANG, M.H. HUANG, and Y.C. CHANG (*School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan*).

**1717** 9:45 Apical Leakage of a New Polydimethylsiloxane-based Root Canal Sealer. S. BARTUSKOVA\* and L. PERINKA (*1st Stomatological Clinic, Charles University, Prague, Czech Republic*).

**1718** 10:00 Apical Microleakage of Three Root Canal Filling Techniques. E. MEDIONI\*, S. FARHANG, and C. RICCI (*Biomaterials and Experimental Odontology Laboratory, Dental University of Nice-Sophia-Antipolis, France*).

**1719** 10:15 SEM Study of Smear Layer Removal with Different EDTA Solutions. M.A. ARAIZA\*, H. ARENAS-ALATORRE, F. BARCELO, J. ARENAS-ALATORRE, R. RODRIGUEZ-TALavera, and V.M. CASTAÑO (*Fac. de Odontología, UNAM, Escuela Militar de Odontología, Ins. Nac. de Invest. Nucleares (ININ), and DFATA, Instituto de Física UNAM, Mexico*).

10:30 Discussion

**Seq#: 196 Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 301 B**

**Neuroscience/TMJ - Motor Activity, Force, Movement, and Muscle Organization**

**Chairpersons: Y. Shiao and S. Uchida**

**1720** 9:00 Property of Masseter Motor Units Related to 3-D Bite Force. T. OGAWA\*, T. KAWATA, K. SASAKI, A. TUBOI, Y. HATTORI, and M. WATANABE (*Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**1721** 9:15 Evidence for Functional Partitioning of the Rabbit Digastric Muscle. K. TSURUYAMA\*, G. SCOTT, C.G. WIDMER, and J.P. LUND (*McGill University, Montreal, Quebec, Canada; Nihon University, Matsudo, Chiba, Japan; and University of Florida, Gainesville, USA*).

**1722** 9:30 Functional Heterogeneity in the Human Lateral Pterygoid Muscle. I. PHANACHET\*, T. WHITTLE, K. WANIGARATNE, and G.M. MURRAY (*University of Sydney, Australia*).

**1723** 9:45 SMU Recording from the IHLP with Horizontal Isometric Mandibular Force. S. UCHIDA\*, T. WHITTLE, K. WANIGARATNE, and G.M. MURRAY (*Department of Removable Prosthodontics and Occlusion, Osaka Dental University, Japan; and Faculty of Dentistry, University of Sydney, Westmead Hospital, NSW, Australia*).

**1724** 10:00 Influence of Occlusal Alteration on Jaw Muscles during Horizontal Movements. B.Y. HUANG\*, C.W.L. JOHNSON, T. WHITTLE, K. WANIGARATNE, and G.M. MURRAY (*Faculty of Dentistry, University of Sydney, Westmead Hospital, NSW, Australia*).

**1725** 10:15 Masseter Muscle Activity and Chewing Efficiency. Y.-Y. SHIAU\*, C.-W. KAO, and C.M. WANG (*Graduate Institute of Oral Biology, College of Medicine, National Taiwan University, Taipei*).

**1726** 10:30 Modulation of Swallowing Reflex by Stimulation of Cortical Masticatory Area. J.K.C. AMARASENA\*, S. OOTAKI, K. YAMAMURA, H. HIRANO, and Y. YAMADA (*University of Niigata, Japan*).

**1727** 10:45 Movement-related Cortical Potentials Preceding Jaw Excursions in Oromandibular Dystonia. K. YOSHIDA\*, R. KAJI, N. MURASE, H. SHIBASAKI, and T. IIZUKA (*Kyoto University, Japan*).

**Seq#: 197**    **Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 201 A**

**Oral Health Research - Dental Services Utilization, Oral Hygiene, Plaque Control Devices, Powered Toothbrushes, Plaque Control in Babies, Mouthrinses, Oral Cancer Detection, Cleft Palate**

**Chairpersons: L. Slack-Smith and M. T. Rota**

- 1728** 9:00 Dental Visits by Young Australians—Some Important Differences. L.M. SLACK-SMITH\* (*School of Dentistry, and Department of Public Health, University of Western Australia*).
- 1729** 9:15 Oral Dysplasia and Cancer: Parameters Affecting Accurate Clinical Diagnosis. E. GAGARI, A.I. ZAVRAS\*, and M.J. CLARK (*Tufts University and Harvard University, Boston, MA, USA*).
- 1730** 9:30 Parental Perception of Feeding Difficulties in Infants with Cleft Lip and/or Palate. N. KILPATRICK\*, J. REID, S. STEPHEN, S. LIVESEY, and S. REILLY (*Royal Children's Hospital, and La Trobe University, Melbourne, Australia*).
- 1731** 9:45 Evaluation of the Effectiveness of Dental Plaque Removal Using Different Methods in Babies. A.L.F. VIEIRA\*, E. BRESCIANI, and M.A.A.M. MACHADO (*Bauru Dental School-USP, Brazil*).
- 1732** 10:00 Survey on Oral Hygiene Practices of Japanese People. S. ABE\*, M. ARIAKE, K. SHINADA, and Y. KAWAGUCHI (*Tokyo Medical and Dental University, Japan*).
- 1733** 10:15 New Plaque Removal Device with Cellulose Powder. S. HORIGUCHI\*, T. YAMADA, and T. KURIYAGAWA (*Toranomon Hospital, Tokyo, and Tohoku University, Sendai, Japan*).
- 1734** 10:30 Approximal Brushhead Used on a Powered Toothbrush. M.M. DANSER\*, M.F. TIMMERMAN, Y. IJZERMAN, M. PISCAER, U. van der VELDEN, and G.A. van der WEIJDEN (*Department of Periodontology, ACTA, Amsterdam, The Netherlands*).
- 1735** 10:45 Acetaldehyde Produced by Alcohol-containing Mouthrinse Affects HGF Cytoskeleton. M.T. ROTA\*, P. POGGI R. RIZZO, S. RODRIGUEZ, Y. BAENA, and R. BORATTO (*Faculty of Medicine and Dentistry, University of Pavia, Italy*).

**Seq#: 198**    **Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Makuhari Messe: Room 302**

**Periodontal Research - Periodontitis and Systemic Conditions**

**Chairpersons: R. Persson and U. Skalerič**

- 1736** 9:00 Diabetic Periodontitis: Synergy of AGEs and P.g. LPS-induced NF- $\kappa$ B Activation. J.H. SOUTHERLAND\*, M. HOLMES-McNARY, C.L. DOWNEY, A.S. BALDWIN, Jr., and S. OFFENBACHER (*University of North Carolina at Chapel Hill, USA*).
- 1737** 9:15 Inducible Nitric Oxide Synthase (iNOS) in Gingiva of Diabetic Patients. U. SKALERIČ\*, B. GAŠPIRC, A. STANČIČ, and A. MAŠERA (*Department of Oral Medicine and Periodontology, and Department of Pathology, Faculty of Medicine, University of Ljubljana, Slovenia*).
- 1738** 9:30 Effects of Dietary Calcium and Pregnancy on Alveolar Bone Loss. K. SHOJI\*, M. OHTSUKA-Isoya, H. SHI-MAUCHI, and H. SHINODA (*Tohoku University, Sendai, Japan*).
- 1739** 9:45 Plasma, Saliva, and Crevicular Fluid Levels of Calprotectin in HIV Infection. A. VOGANATSI\*, M. STELZEL, and L. FLORES-DE-JACOBY (*Philipps University of Marburg, Germany*).
- 1740** 10:00 Aberrant Distribution of Leukocytes in Periodontal Lesions of HIV+ Patients. S. STEINSVOLL\*, M.M. MYINT, K. HELGELAND, and K. SCHENCK (*University of Oslo, Norway*).
- 10:15 Discussion

**Seq#: 199**    **Saturday, June 30, 9:00 am - 11:00 am**  
**Oral Session, Prince Hotel: Hall 5**

**Prosthodontics Research - General: Removable Prosthodontics, Maxillofacial Prosthetics**

**Chairpersons: R. Rached and S. Kiat-Amnuay**

- 1741** 9:00 Correlation of Maxillary Central Incisor Shape with Face Form. H.-B. LINDEMANN\*, P. PFEIFFER, and C. KNAUER (*School of Oral Medicine, University of Cologne, and Institute of Computer Science, University of Berlin, Germany*).
- 1742** 9:15 Denture Repair Technique Using Microwave Acrylic Resin and Silicone Mold. R.N. RACHED\*, J.M. POWERS, and A.A. DEL BEL CURY (*UNICAMP-Piracicaba Dental School, and PUCPR-Curitiba Dental School, Brazil; and University of Texas-Houston Dental Branch, USA*).
- 1743** 9:30 A New Technique for Measuring Space between Tissue and Denture: Evidence of Validity. Y.-T. HSU\* and M.K. JEFFCOAT (*University of Alabama at Birmingham, USA*).
- 1744** 9:45 Patient Satisfaction in Treated Head Cancer Patients with Maxillofacial Prostheses. A.E. SCHMIDT\*, B.K. REITE-MEIER, and A. HOEHLEIN (*Department of Prosthetic Dentistry, Technical University, Dresden, Germany*).
- 1745** 10:00 Opacifiers and Pigments Affect Color Stability of Maxillofacial Elastomers. S. KIAT-AMNUAY\*, J.C. LEMON, T. MEKAYARAJJANANONTH, and J.M. POWERS (*MD Anderson Cancer Center, University of Texas, and UT-Houston Dental Branch, USA*).
- 1746** 10:15 Evaluation of Chewing Ability in the Elderly with Energy Expression. K. OKIMOTO\*, N. ENOKI, K. MATSUO, and Y. TERADA (*Faculty of Dentistry, Kyushu University, Fukuoka, Japan*).
- 1747** 10:30 Evaluation of Fitting of Edentulous Obturator Prosthesis. H. MUKOHYAMA\*, SHWE HLAING, M. HARAGUCHI, and H. TANIGUCHI (*Tokyo Medical and Dental University, Japan*).
- 10:45 Discussion

**Seq#: 200**    **Saturday, June 30, 9:00 am - 12:45 pm**  
**GC-sponsored Symposium, Makuhari Messe: Conv Hall A**

**GC International - State of the Art of CAD/CAM in Dentistry [Supported by the IADR and GC International]**

**Chairperson: A. Kohno**

- 1748** 9:00 Opening Comments.
- 9:40 Present Status in US. D. NATHANSON (*Boston University, MA, US*).
- 10:25 Present Status in Japan. K. HIKITA (*University of Hokkaido, Japan*).
- 11:10 Present Status in Europe. F. DURET (*Fleury D'Aude, France*).
- 11:55 Discussion

**Seq#: 201**    **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**IADR Hatton Competition - IADR/Unilever Hatton Competition**

- 1749** Modulation of Tissue Factor by Endothelial Cells during Heat Shock. D.L. BASI\*, K.F. ROSS, J. HODGES, and M.C. HERZBERG (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

- 1750** Anabolic Effects of PTH in Bone are Dependent on *c-fos*. B. DEMIRALP\*, H. CHEN, A.J. KOH, E.T. KELLER, and L.K. McCAULEY (University of Michigan, Ann Arbor, USA).
- 1751** Proper Enamel Formation Requires the Presence of Functional SATB1 Protein. G. GLAYZER\*, R. MARCUCIO, T. KOHWI-SHIGEMATSU, and J.A. HELMS (University of California at San Francisco, USA).
- 1752** PTH-dependent Inhibition of Mineralization in Osteoblasts is Mediated by MGP. R. GOPALAKRISHNAN\*, H.J. OUYANG, M.J. SOMERAN, L.K. McCAULEY, and R.T. FRANCESCHI (Dental School, University of Michigan, Ann Arbor, USA).
- 1753** Soluble Fibrin-related Factors Induce Angiogenic Factor Expression in Oral Tumors. R.V. LALLA\*, M.I. TANZER, and D.L. KREUTZER (University of Connecticut, Farmington, USA).
- 1754** Somatostatin Inhibits RhoA Activation and Assembly of Actin Stress Fibers. C.Y. LIN\* and D.L. BARBER (University of California, San Francisco, USA).
- 1755** Dura Mater Controls Calvarial Suture Patency and Fusion. C.M. PATRIANAKOS\*, G.S. KANG, J.L. DREIER, and M.A. IGNELEZI, Jr. (Department of Orthodontics and Pediatric Dentistry, School of Dentistry, University of Michigan, Ann Arbor, USA).
- 1756** *alk8* Patterning of CNC-derived Craniofacial Cartilages in Zebrafish. T.L. PAYNE\* and P.C. YELICK (The Forsyth Institute, Boston, MA, USA).
- 1757** Immunohistochemical Identification of Antigen-presenting Cells (APC) in Rat Salivary Ducts. C.A. STASULIS\* and A.R. HAND (School of Dental Medicine, University of Connecticut, Farmington, USA).
- 1758** Titanium Transport through the Blood Stream. D. OLMEDO\*, D. TASAT, M.B. GUGLIELMOTTI, and R.L. CABRINI (Faculty of Dentistry, University of Buenos Aires, and National Atomic Energy Commission, Argentina).
- 1759** Residual Antimicrobial Effects of Endodontic Filling Materials. A. LA ROSA\*, S.B. PEREZ, D.P. TEJERINA, M. PICCA, J.F. LEWCOWICZ, A.E. KAPLAN, and S.L. MOLGATINI (School of Dentistry, University of Buenos Aires, Argentina).
- 1760** *Fusobacterium nucleatum* Provides Anti-oxidant Protection to *Porphyromonas gingivalis* Grown in Continuous Co-culture. P.I. DIAZ\*, P.S. ZILM, and A.H. ROGERS (University of Adelaide, South Australia).
- 1761** Outer Membrane Proteomics of the Periodontopathogen, *Porphyromonas gingivalis*. P.D. VEITH\*, G.H. TALBO, and E.C. REYNOLDS (School of Dental Science, University of Melbourne, Victoria, Australia).
- 1762** Mononuclear Cell Apoptosis in Adult Periodontitis of HIV<sup>-</sup> and HIV<sup>+</sup> Patients. F.M. AARESTRUP\*, B.J. VIEIRA, R.R.P. MACHADO, A.R. DE SOUZA, and F.F. CALDONCELLI (Lab. Imunologia ICB/UFJF(MG), Brazil).
- 1763** Mdm2 Gene Expression in Salivary Gland Neoplasms. A. MANTESSO\*, S.V. LODUCCA, I. BENDIT, B. GARICOHEA, and V.C. ARAÚJO (Faculdade de Odontologia—USP—Patologia Bucal—Hemocentro de São Paulo—Laboratório de Biologia Tumoral, Brazil).
- 1764** Conservation of *wingless/hedgehog* Interactions in Ectodermal Boundary Formation during Early Mammalian Tooth Development. M.T. COBOURNE\*, L. SARKAR, S. NAYLOR, M. SMALLEY, T. DALE, and P.T. SHARPE (Department of Craniofacial Development, GKT Dental Institute, King's College London, and Institute of Cancer Research, London, UK).
- 1765** An Evaluation of Patient-controlled Pharmacological Sedation with Propofol. D.J. RYNN\*, N.M. GIRDLER, and C. REID (University of Newcastle Dental Hospital and School, UK).
- 1766** Identification of Genes Deleted from Melibiose-negative *Streptococcus mutans*. W.G. ROBINSON\* and R.R.B. RUSSELL (University of Newcastle, UK).
- 1767** Effectiveness of Antifungal Agents in Tissue Conditioners over Time. C.K.W. CHOW\*, D.W. MATEAR, H.P. LAWRENCE, and H. GRAD (University of Toronto, ON, Canada).
- 1768** P2X<sub>7</sub> Nucleotide Receptors Mediate Calcium Entry into Osteoclasts. L.N. NAEMSCH\*, S.J. DIXON, and S.M. SIMS (University of Western Ontario, London, Canada).
- 1769** Sealing and Micro-tensile Dentin Bond Strength in Selected Areas of Perfused Teeth. N. ESCRIBANO\*, M.O. DEL-NERO, and J.C. de la MACORRA (Department of Conservative Dentistry, Complutense University, Madrid, Spain).
- 1770** The Efficacy of Two Caries-preventive Programs in Romanian Schoolchildren. I. DANILA, M. PARUS\*, C. HANGANU, and I. SAVEANU (University "Gr. T. Popa" Iasi, Romania).
- 1771** Analysis of Urinary Fluorides in Small Children for Fluorine Prophylaxis. E. KACZMAREK\*, E. GROMADZIŃSKA-ZAPŁATA, M. BORYSEWICZ-LEWICKA, and A. RYDZEWSKA (Department of Pediatric Dentistry, Department of Medical Informatics and Statistics, and Department of Environment Protecting, University of Medical Sciences, Poznań, Poland).
- 1772** The Analysis of the Influence of Different Factors on Patients' Behavior and Degree of Confidence. I. OLSZEWSKA\* (Department of Propedeutic Conservative Dentistry, Medical Faculty of Jagiellonian University, Cracow, Poland).
- 1773** The *in vitro* Adhesion of *Candida albicans* to Buccal Epithelial Cells from Edentulous Late-onset Diabetic Patients. Z.N. AL-DWAIRI\*, W.A. COULTER, C.R. FULTON, A.M. WILLIS, and I.C. BENINGTON (School of Dentistry, Queen's University of Belfast; and Faculty of Dentistry, J.U.S.T., Irbid, Jordan).
- 1774** Pain Perception in Patients with Schizophrenia. D. RINGLER\*, I. ELI, and R. BLUMENSOHN (School of Dental Medicine, Tel Aviv University, and Ness-Ziona Psychiatric Hospital, Israel).
- 1775** Basic Fibroblast Growth Factor Enhances Hyaluronan Synthesis. S. TAKAYAMA\*, S. MURAKAMI, M. NAKAJIMA, and H. OKADA (Graduate School of Dentistry, Osaka University, Japan).
- 1776** Expression of Cathepsin K and MMP-9 during Deciduous Tooth Resorption. B. LINSUWANONT\*, Y. TAKAGI, K. OHYA, and H. SHIMOKAWA (Graduate School, Tokyo Medical and Dental University, Japan).
- 1777** PGE<sub>2</sub> Down-regulates LPS-induced IL-12 Production via EP<sub>4</sub> in Monocytes. K. IWASAKI\*, K. NOGUCHI, and I. ISHIKAWA (Tokyo Medical and Dental University, Japan).
- 1778** Pathogenicity of *Porphyromonas gingivalis* and Protective Role of Salivary Proteins. T. IMATANI\*, T. MIURA, K. ISHIHARA, T. KATO, and K. OKUDA (Tokyo Dental College, Chiba, Japan).
- 1779** Expression of GD3 Synthase Gene in Ameloblasts during Mouse Tooth Development. S. FUKUMOTO\*, K. FURUKAWA, and G. GOTO (Nagasaki University, and Nagoya University, Japan).
- 1780** Bone Healing around Thermally Oxidized Dental Implant. Y.H. KIM\*, S.J. HEO, J.P. CHUNG, I.C. RHYU, J.I. LEE, C.H. HAN, H.K. BAIK, and A. WENNERBERG (Seoul National University, and Yonsei University, Seoul, Korea; and Gothenburg University, Sweden).

**1781** Expression and Regulation of Two Ectodermal-dysplasia-associated Genes, *tabby* and *downless*, during Mouse Tooth Development. J. LAURIKKALA\*, M. MIKKOLA, T. MUSTONEN, and I. THESLEFF (*Developmental Biology Program, Viikki Biocenter, University of Helsinki, Finland*).

**1782** Streptococcal Antigen I/II: Expression and Adhesive Functions in *Streptococcus intermedius*. F.C. PETERSEN\*, S. STIG, H. WEIDEMANN, S. ASSEV, J. OGIER, and A.Aa. SCHEIE (*University of Oslo, Norway; and INSERM U424, Strasbourg, France*).

**1783** Evaluation of the Fit of Two Implant-superstructure Designs. I.C. GOOSSENS\* (*University of Pretoria, South Africa*).

**1784** Evaluation of Cell Permeability of Guided Tissue Regeneration Membranes *in vitro* (II). W.-J. CHANG\*, C.-Y. WANG, H.-M. HUANG, C.-H. WU, S.-Y. LEE, C.-T. LIN, and K.-J. HSIEH (*School of Dentistry and Graduate Institute of Oral Rehabilitation, and Department of Microbiology and Immunology, Taipei Medical College, Taiwan*).

**1785** Adverse Effects of Arecoline and Nicotine on Human Periodontal Ligament Fibroblasts. Y.C. CHANG\*, K.W. TAI, and M.Y. CHOU (*School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan*).

**Seq#: 202 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Pulp Biology - Dentin/Pulp Complex**

**1786** Effects of Ammonium Hexafluorosilicate on Occlusion of Dentinal Tubules. A. KAWASAKI\*, T. SUGE, K. ISHIKAWA, K. SUZUKI, T. MATSUO, and S. EBISU (*Tokushima University, Okayama University, and Osaka University, Japan*).

**1787** CaCl<sub>2</sub> Increases Dentinal Tubule Occlusion Ability of Potassium Oxalate Treatment. T. SUGE\*, K. ISHIKAWA, A. KAWASAKI, K. SUZUKI, T. MATSUO, and S. EBISU (*Tokushima University, Okayama University, and Osaka University, Japan*).

**1788** Efficacy and Mechanism of a Fluoridated Occluding Agent for the Treatment of Dentin Hypersensitivity. W.J. ROU\*, R.T. ROAN, C.H. CHEN, F.H. CHUANG, C.N. HUANG, P.L. YEN, and P.I. CHANG (*Department of Conservative Dentistry, School of Dentistry, Kaohsiung Medical University, Taiwan; and Tokyo Medical and Dental University, Japan*).

**1789** Characteristic Thermal Parameters of Hypersensitive Teeth. S. RUETTERMANN\* and W.H.-M. RAAB (*Heinrich-Heine-University, Düsseldorf, Germany*).

**1790** Root Surface Temperature during the Use of a Probe from Heat Source Machine. S. TIMPAWAT\* and N. VONGSAVAN (*Department of Operative Dentistry, and Physiology and Biochemistry, Faculty of Dentistry, Mahidol University, Thailand*).

**1791** Lack of Correlation between Microleakage Organisms and Pulp Lesions. H.R. STANLEY, C.H. PAMEIJER, and S.R. JEFFERIES\* (*University of Florida, Gainesville, University of Connecticut, Farmington, and Dentsply Intl., York, PA, USA*).

**1792** Adhesive Hybridization: Bacteriometric Sealing of Human Vital Dentin. B. TARIM\*, E.C. SAY, A.A. HAFEZ, and C.F. COX (*Department of Conservative Dentistry, Istanbul University, and Yeditepe University, Istanbul, Turkey; and UAB, Birmingham, AL, USA*).

**1793** Pulpal Response of a Fluoride-releasing One-step Bonding Resin. Y. SASAFUCHI\*, H. SONODA, Y. KITASAKO, M. OTSUKI, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**1794** The Effects of Restorative Materials on L-strain Cell Proliferation *in vitro*. M. KAZAK\*, Y. BENDERLI, N. TURAN, F. ONCU, and A. BILIR (*University of Istanbul, Turkey*).

**1795** Cryomicroscopy and Ultrastructure of Cryopreserved Human Pulp and Periodontal Ligament. I. LAMBRICHTS\*, J. CREEMERS, C. POLITIS, S. SCHEPERS, F. VANDENABEELE, and L. VRIELINCK (*Basic Medical Sciences, Limburgs University Ctr, Diepenbeek, and Max-fac Surg., ZOL, Gent, Belgium*).

**1796** Age Changes in Human Tooth Odontoblast Density and Dentin Thickness. P.E. MURRAY\*, A.J. SMITH, J.B. MATTHEWS, A.J. SLOAN, and H.R. STANLEY (*University of Birmingham, UK; and University of Florida, Gainesville, USA*).

**1797** Location of the Apical Foramen in C-shaped Mandibular Second Molars. F.H. CHUANG\*, R.T. ROAN, W.J. ROU, M.H. DIAU, and C.H. CHEN (*Kaohsiung Medical University, Taiwan*).

**1798** Modulation of Odontoblast-Predentin-Dentin Organization of Rat Molars after Tooth Replantation. Y. SHIMAZU\*, S. SATO, R. ENARI, and T. AOBA (*Nippon Dental University, Tokyo, Japan*).

**Seq#: 203 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Prosthodontics Research - Removable Prosthodontics**

**1799** Shock-absorbing Behavior of Posterior Artificial Teeth. F. KAWANO\*, O. ISHIDA, T. ICHIKAWA, I. MIZUNO, and A. HASEGAWA (*University of Tokushima, and GC Dental Products Co., Aichi, Japan*).

**1800** *In vitro* Evaluation of Selected Topical Fluorides on Overdenture Abutments. L. HONG, R.L. ETTINGER\*, J.S. WEFEL, and C.A. WATKINS (*University of Iowa, Iowa City, USA*).

**1801** Prosthetic Aspect on Oral Environment and Missing Teeth in Elderly. J. TANAKA\*, T. KAWAZOE, M. TANAKA, and K. KASHIWAGI (*Osaka Dental University, Japan*).

**1802** Usage of Removable Prosthodontics Increases the Amount of Salivary Secretion. A. NOMURA\*, R.U. MEDINA, and S. KOHNO (*Faculty of Dentistry, Niigata University, Niigata City, Japan; and Autonomous University of Coahuila, Faculty of Dentistry, Mexico*).

**1803** Outcomes of Complete Denture Treatment Provided by Undergraduate Dental Students. Z.M. ISA\* and Z. HARUN (*Faculty of Dentistry, University of Malaya, Kuala Lumpur, Malaysia*).

**1804** Bonding Strengths of Denture Base Resin to Silanized Titanium Alloys. T. AOKI\*, C. OHKUBO, T. HOSOI, I. WATANABE, H. SHIMIZU, and T. OKABE (*Tsurumi University, Yokohama, Nagasaki University, and Fukuoka Dental College, Japan; and Baylor College of Dentistry, TX A&M Univ. HSC, Dallas, USA*).

**1805** Mandibular Ridge Height Effect on Performance with Conventional and Overdentures. K. KIMOTO\*, N. GARRETT, M. HAMADA, E. ROUMANAS, and K. KAPUR (*UCLA School of Dentistry, VA GLAHS, Weintraub Center, Los Angeles, CA, USA*).

**1806** SEM Observation of Metal-Resin Bond in Removable Partial Dentures. V. VALENTINI\*, S. CATAPANO, M. AUGELLO, and M. FRANCHI (*University of Ferrara, Italy*).

**1807** Investigation of Peel Bond Strength of Soft-lining Material to Various Denture Base Treatments. C.C. HSU, C.C. CHU\*, and M.S. HUANG (*Institute of Dental Materials, Chung Shan Medical & Dental College, Taichung, Taiwan*).

**1808** Biomechanical Comparison of Konus Krone and Pallarelo Konus Denture Systems. T. SASAKI\*, H. ITOH, S. MURAYAMA, K. AWATANI, H. NAKAHARA, and T. AOKI (*School of Dentistry, Tohoku University, Miyagi National Hospital, and Modern Dental Lab, Japan*).

**1809** Stress Transfer Characteristics of Various Retainer Designs in Unilateral Distal Extension Cases. S. MURAYAMA\*, H. ITOH, T. SASAKI, K. AWATANI, H. NAKAHARA, and T. AOKI (School of Dentistry, Tohoku University, Miyagi National Hospital, and Modern Dental Lab, Japan).

**1810** Effect of Magnetic Attachment with Stress Breaker under Overdenture. T. GONDA\*, M. KIBI, Y. FUKUI, I. OKUNO, Y. TAKEMURA, and T. NOKUBI (Graduate School of Dentistry, Osaka University, Japan).

**1811** Prescription of Removable Partial Denture Design in General Dental Practice. L. VAN ZEGHBROECK\* and E. DEPAEPE (Dental School, University of Gent, Belgium).

**1812** Improvement of Polishing Efficiency by Centrifugal Shooting-type Polishing System. K. ISHIKAWA\*, O. YAMABA, S. YASUI, K. IKEBE, and T. NOKUBI (Graduate School of Dentistry, Osaka University, Japan).

**1813** Stress Distribution of Removable Partial Dentures with Four Different Designs. J.H. WU\*, C.H. WANG, H.E. LEE, C.L. LIN, and H.C. CHEN (Graduate Institute of Dental Science, Kaohsiung Medical University, Taiwan).

**Seq#: 204 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Effects of Application Techniques on Adhesion**

**1814** Adhesion Study of Various Self-etching Adhesive Systems. J. SANG\* and L.C. HAYES (DENTSPLY/Caulk, Milford, DE, USA).

**1815** Micro-shear Bond Strengths of Single-step Adhesives to Bovine Dentin. Y. NAKAOKI\*, T. IDE, S. YAMAGUCHI, Y. SHIMADA, T. NIKAIDO, and J. TAGAMI (Tokyo Medical and Dental University, Japan).

**1816** Bond Strength of One-step and Two-step Systems to Cervical Tooth Substance. T. KIMISHIMA\*, S. OSHITA, H. ENOMOTO, T. MASEKI, Y. NARA, H. TANAKA, and I.L. DOGON (Nippon Dental University, Japan; and Forsyth Institute, Harvard School of Dental Medicine, Boston, MA, USA).

**1817** Influence of Bond Agent Application Duration on Dentin-Resin Bond. K. TSUBOTA\*, K. IWASAKI, M. MIYAZAKI, H. ONOSE, and B.K. MOORE (Nihon University, Tokyo, Japan; and Indiana University, Indianapolis, USA).

**1818** Micro-tensile Bond Strengths of Resin Cement to Dentin Using Resin-coating Technique. P.R. JAYASOORIYA\*, P.N.R. PEREIRA, T. NIKAIDO, and J. TAGAMI (Tokyo Medical and Dental University, Japan; and University of North Carolina, Chapel Hill, USA).

**1819** Effects of Application Technique and Dentin Bonding Agent Interaction on Shear Bond Strength. B. BERGER\*, E.D. BONILLA, R. STEVENSON, M. YASHAR, and A.A. CAPUTO (Restorative Dentistry, and Biomaterials Science, UCLA School of Dentistry, USA).

**1820** Dentin Bond Strength of Resin Systems Depending on Curing Method. W. BUTDEE\*, K. HASHIMOTO, T. TAKADA, N. INAI, and J. TAGAMI (Khon Kaen University, Thailand; and Tokyo Medical and Dental University, Japan).

**Seq#: 205 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Adhesion: Metals/Other Interfaces/Microleakage**

**1821** Influence of Titanium Alloy and Bonder on the Adhesion of Porcelain. N. SUANSUWAN, T. SUMII\*, K. YAMADA, and M.V. SWAIN (Biomaterials Science Research Unit, University of Sydney, Australia).

**1822** Adhesive Bonding of Super-elastic Titanium-Nickel Alloy Castings. H. MATSUMURA\*, N. TANOUE, H. YANAGIDA, M. ATSUTA, and T. YONEYAMA (Nagasaki University, and Tokyo Medical and Dental University, Japan).

**1823** Bonding Methacrylic Resins to Ti-6Al-7Nb Alloy with Acidic Metal Conditioners. H. YANAGIDA\*, Y. TAIRA, N. TANOUE, M. ATSUTA, and H. MATSUMURA (School of Dentistry, Nagasaki University, Japan).

**1824** Novel Adhesion Promoters as Metal Primers for Dental Alloys. A.P. MANANI\* and R. VAN NOORT (Department of Restorative Dentistry, University of Sheffield, England, UK).

**1825** An IR Study on Adsorption Behavior of a Primer on Au, Ag, Cu, and Cr. M. YAMAMOTO\*, M. SUZUKI, A. FUJISHIMA, T. MIYAZAKI, H. HISAMITSU, K. KOJIMA, and Y. KADOMA (Showa University, and Tokyo Medical and Dental University, Japan).

**1826** The Effects of Bonding Resins on Shear Strength of Laminates. D. ŞEN\* and E. PAMUK (Faculty of Dentistry, University of Istanbul, Turkey).

**1827** Alkaline Treatment of Titanium for Bonding to Resin. S. BAN\* and J. HASEGAWA (School of Dentistry, Aichi-Gakuin University, Nagoya, Japan).

**1828** Adhesion of Resin Cement to Saliva-contaminated Titanium Plates Glow Discharge Treatment. F. HIROSHIMA\*, A. FUJISHIMA, and T. MIYAZAKI (School of Dentistry, Showa University, Tokyo, Japan).

**1829** Efficacy of Separating Substances for Intra-oral Use. P. KÜHN\* and W. NIEDERMEIER (Department of Prosthetic Dentistry, University of Cologne, Germany).

**1830** Surface Energy of Resin-based Dental Materials. N. ILIE\*, K.H. KUNZELMANN, K. FELTEN, and R. HICKEL (Department of Restorative Dentistry, Dental School of the LMU, Munich, Germany).

**1831** Margin Integrity of Bonded and Non-bonded Amalgams. Z. MACH\*, J.C. SETCOS, and M. STANINEC (Institute for Dental Research-General Faculty Hospital, Prague, Czech Republic; Dental School at University of Manchester, UK; and Dental School at University of California, San Francisco, USA).

**1832** The Microleakage of Bonded Amalgams. I.C. du PREEZ\*, C.T. BOTHA, and J.J.C. van ROOYEN (Department of Operative Dentistry, MEDUNSA, Pretoria, South Africa).

**1833** Influence of Simulated Pulpal Pressure on Marginal Leakage. R. JENATSCHKE\*, S. RINKE, and K. DERMAN (Private Practice, Hanau, and Freie Universität, Berlin, Germany).

**1834** Efficacy of a Sonic Preparation Device in Finishing Box Preparations. N.J.M. OPDAM, F.J.M. ROETERS, A. JEURISSEN\*, and E. BRONKHORST (Department of Cariology and Endodontology, University of Nijmegen, The Netherlands).

**1835** Microleakage of Class II Composite Restoration Lined with Various Materials. S.F. CHUANG\* and Y.T. JIN (National Cheng Kung University Hospital, Tainan, Taiwan).

**Seq#: 206 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Resin Curing/Chemistry**

**1836** Effects of Total Light Energy on Polymerization of Light-cured Filling Materials. K.L. HWANG\*, Y.K. LEE, B.S. LIM, and C.W. KIM (College of Dentistry, Seoul National University, Korea).

**1837** Degree of Polymerization of Resin Composites by Different Light Sources. T.H. YOON\*, Y.K. LEE, B.S. LIM, and C.W. KIM (College of Dentistry, Seoul National University, Korea).

**1838** Effect of Light Energy on Cure Depth of Resin Composites. Y.K. LEE\*, T.H. YOON, B.S. LIM, and C.W. KIM (*College of Dentistry, Seoul National University, Korea*).

**1839** Influence of Three Polymerization Systems on the Released Components of Composite Resins. H.J. MOON\*, Y.K. LEE, B.S. LIM, and C.W. KIM (*College of Dentistry, Seoul National University, Korea*).

**1840** Organic Leachables from Four Polymer-based Dental Filling Materials. V.B. MICHELSEN\*, H. LYGRE, A.B. TVEIT, and E. SOLHEIM (*Department of Odontology-Cariology, Department of Odontology-Oral Pharmacology, and Department of Pharmacology, University of Bergen, Norway*).

**1841** Identification of Organic Substances Released from Composite Resin Materials. U. ÖRTENGREN\*, A. HANSSON, T. LUNDGREN, and S. KARLSSON (*Faculty of Odontology, Göteborg University, Sweden*).

**1842** A New Method to Evaluate the Conversion of a Composite Resin into the Root Canal: HPLC. L. BOSCHIAN\*, G. GALIMBERTI, L. FADINI, and M. GAGLIANI (*Department of Restorative Dentistry, University of Milan, Italy*).

**1843** Biological Clearance of HEMA in Guinea Pigs. F.X. REICHL\*, J. DURNER, K.H. KUNZELMANN, R. HICKEL, J. MANHART, W.R. HUME, K. KEHE, U.I. WALTHER, and W. FORTH (*University of Munich, Germany*).

**1844** Filler and Matrix Resin Relationship and Properties of Uncured Composite Pastes. T. TAKAMATA\*, S. KALACHANDRA, and M.S. PANDIAN (*Matsumoto Dental University, Japan; Eastman Dental Institute, UK; COSD, UNC, Chapel Hill, and Virginia Tech, Blacksburg, USA*).

**1845** Polymerization Mechanism of Methylmethacrylate with Barbituric Acid Derivatives Using Spin Trapping Technique. A. HASEGAWA\*, T. HAMANO, M. MIWA, and S. NAGASAKA (*GC Dental Products, Kasugai, and Gifu University, Japan*).

**1846** Characteristic of Tributylborane Initiator Used in the MMA-based Adhesive Resin. Y. IMAI\* and C. HIRABAYASHI (*Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

**1847** Mechanistic Studies on Eugenol-related Compounds as Radical Scavengers Active against Methacrylate Polymerization. S. FUJISAWA\*, T. ATSUMI, and Y. KADOMA (*Meikai University School of Dentistry, and Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan*).

**1848** Grafting of MMA Monomer onto Collagen by Ceric Ion. S. KONDO\*, S. OHKAWA, M. UO, T. SUGAWARA, and F. WATARI (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**1849** Development of Novel Silanes with Phenyl Group and Double Bond. T. NIHEI\*, S. KURATA, Y. KONDO, K. UMEMOTO, N. YOSHINO, and T. TERANAKA (*Kanagawa Dental College, Yokusuka, and Science University of Tokyo, Japan*).

**1850** Enamel Loss after Bonding/Debonding a Series of Orthodontic Brackets. J.P. BEYER, M.R. PINTADO\*, R. DeLONG, and W.H. DOUGLAS (*MN Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, USA*).

**Seq#: 207** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Dental Materials - Impressions, Dentures, Fiber Reinforcement, Provisionals**

**1851** Fracture Strength of Long-term Temporary Bridges. L. GRUBE\* and P. PFEIFFER (*School of Oral Medicine, University at Cologne, Germany*).

**1852** Effects of Addition of Titania and Zirconia Mixtures on Some Mechanical and Physical Properties of Acrylic Resins for Provisional Fixed Restorations. W. PANYAYONG\*, Y. OSHIDA, and C.J. ANDRES (*Prince of Songkhla University, Thailand; and Indiana University, Indianapolis, USA*).

**1853** *In vitro* Completion and Repair of Provisional Crown and Bridge Materials. M. ROSENTRITT\*, M. BEHR, R. LANG, and G. HANDEL (*Department of Prosthetic Dentistry, University of Regensburg, Germany*).

**1854** Fracture Resistance of Targis-Vectris FPDs after Accelerated Aging. M. FEBBRARI\*, P. BALDISSARA, and A. ARCIDIACONO (*Department of Prosthodontics, University of Bologna, Italy*).

**1855** Reinforcement of Acrylic Resin by Incorporation of Fiber and Fillers. S.Y. CHEN\*, W.M. LIANG, and C.C. CHEN (*China Medical College, Taiwan, ROC*).

**1856** Flexural Strength of Fiber-reinforced Composite Systems. D. RIZZA\* and P. PFEIFFER (*School of Oral Medicine, University at Cologne, Germany*).

**1857** Smart Denture. K. HAMADA\*, F. KAWANO, and K. ASAOKA (*Tokushima University, Japan*).

**1858** Flexural Properties of Acrylic Denture Base Resins after Artificial Aging. M. TIZZANI\*, A. ARCIDIACONO, and P. BALDISSARA (*Department of Prosthodontics, University of Bologna, Italy*).

**1859** Properties of Hypoallergenic Denture Base Materials. E.-U. ROSENBAUER\* and P. PFEIFFER (*School of Oral Medicine, University of Cologne, Germany*).

**1860** Influence of Reinforcement Material on Repair of Denture-base Resin. K. OHTANI\*, E. NAGAI, Y. SATOH, H. TAKIMOTO, and S. SUZUKI (*Nihon University, Tokyo, Japan; and University of Alabama, USA*).

**1861** Evaluation of Setting Behavior of Autopolymerizing Resilient Denture Liners. G. HONG\*, H. MURATA, T. HAMADA, and J.F. McCABE (*Hiroshima University, Japan; and University of Newcastle, UK*).

**1862** Influence of Conventional Luting Materials on Leakage of Gold Crowns. B. WINDMUELLER\* and M. FERRARI (*ESPE Dental AG, Seefeld, Germany; and University of Siena, Italy*).

**1863** 3D Accuracy of One- and Two-stage Impression Techniques. R.G. LUTHARDT\* and M. HOLZHÜTER (*Dresden University of Technology, Germany*).

**1864** A Study of Properties of New Bite Registration Materials. H. DAMRIANANT\*, C. KONGAUM, N. SAELAO, and P. PHANKOSOL (*Chulalongkorn University, Bangkok, Thailand*).

**Seq#: 208** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Behavioral Sciences/Health Services Research - Knowledge, Attitudes, Behaviors: Patient's Perspective**

**1865** Oral-health-related QOL of Patients with Behçet's Disease. H. MIURA\*, E. ISOGAI, S. KOTAKE, Y. FUJINO, and H. KAWASHIMA (*Kyushu University of Health and Welfare, Hokkaido University of Health Sciences, Hokkaido University, Tokyo Kosei-nenkin Hospital, and University of Tokyo, Japan*).

**1866** Development of Dental Fear in University Students. T. ISHIKAWA\* and K. MIURA (*Department of Pediatric Dentistry, Faculty of Dentistry, Hiroshima University, Japan*).

**1867** A Modeling of the Dental Health Behavior. F. AIZAWA\*, A. ABE, M. KISHI, and M. YONEMITSU (*Iwate Medical University, Morioka, Japan*).

**1868** Parent Attitudes toward Behavior Management Techniques in Thailand. S. NUKAW\* and S. KAMOLMATYAKUL (*Prince of Songkla University, Thailand*).

**1869** Latino Immigrants' Rating of Their Oral Health Status. M. MARCUS\*, C. MAIDA, N. GUZMÁN-BECERRA, R. BELLOSO, and L. FIDEL (*School of Dentistry, University of California, Los Angeles, USA*).

**1870** Oral Health Behavior of Schoolchildren and Support by Caretakers in Thailand. J. HUNSRISAKHUN\* and P.E. PETERSEN (*Prince of Songkla University, Thailand; and University of Copenhagen, Denmark*).

**1871** Age's Impact on Dental Attitudes and Behavior of Rural Residents. T.P. RAYBOULD\*, T.A. SMITH, and B.E. QUARLES (*University of Kentucky, Lexington, USA*).

**1872** Views of Caretakers Related to Children's Oral Health from 2 Rural Communities of Puerto Rico: A Qualitative Community-based Study Using Focus Groups. L. LOPEZ\* and P. WEINSTEIN (*School of Dentistry, University of Puerto Rico, San Juan; and School of Dentistry, University of Washington, Seattle, USA*).

**1873** Choice of Dental Provider in Relation to Patient Satisfaction. K. FUKAI\*, Y. MAKI, N. SUGIHARA, and Y. TAKAESU (*Tokyo Dental College, Chiba, Japan*).

**1874** Is ART Still Cost-effective if Cost and Success Rate are Changed? W. PUTTHASRI\* (*Faculty of Dentistry, Khon Kaen University, Thailand*).

**1875** Norwegian Adults' Perceived Need for a Replacement of Extracted Teeth at the Time of Extraction. T.A. TROVIK\*, K.S. KLOCK, and O. HAUGEJORDEN (*Faculty of Dentistry, University of Bergen, Norway*).

**1876** Prevalence and Patterns of Dental Caries and Risk Factors in Pre-school Children of Head Start/Day Care Centers from an Urban Municipality of Puerto Rico. L. LOPEZ, P. WEINSTEIN, and M.C. MACHUCA\* (*School of Dentistry, University of Puerto Rico, San Juan; and School of Dentistry, University of Washington, Seattle, USA*).

**Seq#: 209** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Implantology Research - Prosthodontic Issues**

**1877** Implant-retained Mandibular Overdentures with Immediate Loading: Clinical and Histological Study. G. POMPA\*, M. CASSETTA, I. VOZZA, R. SCARINGI, and M. QUARANTA (*Dental School, La Sapienza University, Rome, Italy*).

**1878** Stress Analysis of an Implant-supported Overdenture in Maxilla. M. TOKUHISA\*, Y. MATSUSHITA, M. OKAMURA, K. NOBAYASHI, and K. KOYANO (*Department of Removable Prosthodontics, Kyushu University, Japan*).

**1879** Retention for Implant-retained Overdentures Using Bar-clip Attachment. E.R. TEIXEIRA\*, C. GALLINA, J.F.M. PACHECO, and N.P. COSTA (*Faculty of Dentistry, Pontificia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil*).

**1880** Effects of Various Implant Prosthodontic Designs on Stress Distribution at Different Crown-Implant Ratios. T. CHANG\*, C. LEE, and A.A. CAPUTO (*UCLA School of Dentistry, USA; and Kyung Pook University, South Korea*).

**1881** Load Transfer of Splinted and Non-splinted Implant Overdentures with No Palatal Coverage. K.T. OCHIAI\*, B.H. WILLIAMS, S. HOJO, R. NISHIMURA, and A.A. CAPUTO (*UCLA School of Dentistry, USA; and Kanagawa Dental College, Japan*).

**1882** Fit of Screw-tightening Implant Frameworks Fabricated by Different Methods. Y.H. SEOL\*, C.M. JEONG, Y.C. JEON, and J.S. LIM (*Pusan National University, Korea*).

**1883** Screw Joint Stability According to Screw Materials. J.H. JEONG\*, Y.T. JEONG, H.C. CHOE, M.J. HAN, and C.I. PARK (*Chosun University, and Kwangyang College, Korea*).

**1884** Effects of Simulated Occlusal Fatigue Loadings on Implant Abutment Screw Loosening. S.C. SON\*, T. CHANG, C.H. LEE, and A.A. CAPUTO (*UCLA School of Dentistry, USA; and Kyung Pook University, South Korea*).

**1885** Accuracy of a New Torque Indicator Design for Implants. J. STANDLEE\* and A.A. CAPUTO (*Restorative Dentistry and Biomaterials Science, UCLA School of Dentistry, USA*).

**1886** Accuracy and Tightening Torque of Magnetic Attachments for Implant Prostheses. M. HORISAKA\*, M. SOGO, Y. MAEDA, and H. OHMASU (*Osaka University, Japan*).

**1887** FEA of Nobel Biocare Standard Abutment with Staged Preload during Applied Axial and Transverse Loads. W.M. CHEONG, K.B.C. TAN\*, S.H. TEOH, and G.R. LIU (*National University of Singapore*).

**1888** Heat Transfer through Implant Fixture during Abutment Preparation. A. AL-KERAIDIS\* and H. MOHAMMED-TAHAWI (*King Saud University, and National Guard Hospital, Riyadh, Saudi Arabia*).

**Seq#: 210** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Mineralized Tissue - Physical/Mechanical Properties of Bones and Teeth**

**1889** Simple Evaluative Method for Acid Resistance of Enamel Surface. T. UCHIYAMA\*, S. HIRAYAMA, Y. KONO, and T. IKEMI (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1890** Evaluation of Young's Modulus of Human Dentin by the Ultra-micro-indentation Method. Y. MATSUSHITA\*, M. KIHARA, M. TOKUHISA, M. HOSHI, and K. KOYANO (*Department of Removable Prosthodontics, Kyushu University, Japan*).

**1891** Mass Spectrometric Analysis of Dental Hard Tissue Ablation. D. FRIED\* and J.Z. XIE (*University of California, San Francisco, USA*).

**1892** Acid and Deproteinization Resistance of the DEJ. T.Q. LE\*, S. HABELITZ, G.W. MARSHALL, M.K. PUGACH, and S.J. MARSHALL (*University of California, San Francisco, USA*).

**1893** DEJ Physical and Optical Properties: AFM and Emission Spectroscopy. M. BALOOCH\*, S. HABELITZ, T.Q. LE, S.J. MARSHALL, S. DEMOS, and G.W. MARSHALL (*University of California, San Francisco, USA*).

**1894** Optical Bone Density of Mandible in Patients after Kidney Transplantation. A. WOJTOWICZ\*, K. CIECHOWICZ, K. GRABOWSKA, H. MARKIEWICZ, P. FIEDOR, and W. ROWIŃSKI (*Medical University, Warsaw, Poland*).

**1895** Elastic Property of Human Dentin and Enamel. M. SAKAMOTO\*, J. SAKAI, T. HARA, Y. MARUYAMA, and H. ITO (*Niigata University, and Tohoku University, Sendai, Japan*).

**1896** Histology and Enamel Composition: Japanese and Thai Deciduous/Permanent Teeth. M. TAKAHASHI\*, S. GOTO, Y. MIYAGAWA, and S. NAKAHARA (*School of Dentistry, Nippon Dental University at Niigata, Japan*).

**1897** The Influence of Micro-CT Threshold Variations on Trabecular Bone Structure. T. HARA\* and Y. IDE (*Tokyo Dental College, Chiba, Japan*).

**1898** Bone Dynamics in Diabetic Denture-supporting Tissue under Intermittent Pressure. T. HARA\*, T. SATO, Y. IMAI, M. OKAMOTO, S. MORI, H. SHIRAI, Y. MARUO, and Y. KINUTA (*Okayama University Dental School, Japan*).

**1899** Re-estimation of Human Tooth Enamel Crystallite Size by XRD. T. SAKAE\* (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1900** Combined Effects of Xylitol, *Gloiopeltis furcata* Extract, and Calcium Hydrogenphosphate on Remineralization. Y. SAEKI\*, M. TAKAHASHI, Y. MIAKE, S. YAMADA, K. OKUDA, and T. YANAGISAWA (*Central Laboratory, Lotte Co., Ltd., Saitama, and Tokyo Dental College, Chiba, Japan*).

**1901** Chemical Composition of the Erosive Enamel after NaF Dentifrice Treatment. T. DOI\*, M. UEMURA, and M. KAMBARA (*Department of Preventive and Community Dentistry, Osaka Dental University, Japan*).

**1902** WITHDRAWN

**1903** Mechanical Stimulation Induces CTGF Expression in Rat Osteocytes. T. FUKUNAGA\*, T. YAMASHIRO, N. KOBASHI, H. KAMIOKA, T. NAKANISHI, M. TAKIGAWA, and T. TAKANO-YAMAMOTO (*Okayama University Dental School, Japan*).

**Seq#: 211** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Salivary Research - Salivary Proteins/Oral Expansion

**1904** Amylase Expression in Granules of Mucous Cells in the Developing Mouse Parotid Gland. K. KOIKE\*, R. IKEDA, and S. AIYAMA (*School of Dentistry at Tokyo, Nippon Dental University, Japan*).

**1905** Promoting Effects for Salivation of N-terminal Portions in NKA Analogues. K. HIGA\*, W. MOTOKAWA, X. NAN, K. ISHIBASHI, T. NISHIURA, and K. ABE (*Fukuoka Dental College, Japan*).

**1906** The Effect of Smoking on Human Salivary Collagenase Activity and MMP-8 Immunoreactivity. K.M. HATAKAKA\*, K. LIEDE, C.A. LASCHINGER, C.A.G. McCULLOCH, and T. SORSA (*Institute of Dentistry, University of Helsinki, Finland; and Faculty of Dentistry, University of Toronto, Canada*).

**1907** Mobilization of Autoantigens in Salivary Gland Cells (HSG) Following Apoptosis. C. McARTHUR\*, Y. WANG, P. VENO, and R. FIORELLA (*School of Dentistry, UMKC, and Pathology Department, Truman Medical Center, Kansas City, MO, USA*).

**1908** Detection of Salivary Peroxidase-specific mRNA Expression in Salivary Glands of Normal and Tumor Patients by *in situ* Hybridization. J. ONOZAKI\*, F. RAHEMTULLA, S. SATO, J.R. McGHEE, H. KIYONO, and K. FUJIIHASHI (*Kanagawa Dental College, Yokosuka, Japan; and University of Alabama at Birmingham, USA*).

**1909** Age-related Gene Expression Profiling in Submandibular Gland Using Oligonucleotide Microarray. K. HIRATSUKA\* and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1910** Naturally Occurring Autoantibodies against Secreted Salivary Proteins. I. AL-HASHIMI\*, N. HAGHIGHAT, and B. HAIDER (*Baylor College of Dentistry, TAMUS, TX, USA; and Guys, Kings and St. Thomas' Schools of Medicine, Dentistry and Biomedical Sciences, London, UK*).

**1911** Polymorphic Basic PRPs Completely Associated with the Ps Protein Polymorphism. K. MINAGUCHI\*, E. SAITOH, and A. BENNICK (*Tokyo Dental College, and Nippon Dental University School of Dentistry at Niigata, Japan; and University of Toronto, Canada*).

**1912** Adherence of Salivary Proteins to Orthodontic Brackets. S.J. AHN, K.S. NAHM\*, and D.S. NAHM (*Department of Orthodontics, College of Dentistry, Seoul National University, Korea*).

**1913** Tissue-specific Protein and Glycosylation Patterns in Human Minor and Major Salivary Gland Secretions. L. ELIASSON, G. ARONSSON, A. CARLÉN\*, D. BIRKHED, and N. STRÖMBERG (*Faculty of Odontology, Göteborg University, and Faculty of Odontology, Umeå University, Sweden*).

**Seq#: 212** **Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### Microbiology/Immunology & Infection Control - Epidemiology & Taxonomy

**1914** Isolation of Subgingival Staphylococci from Periodontal Patients. F.E. MURDOCH\*, R.L. SAMMONS, and I.L.C. CHAPPLE (*University of Birmingham Dental School, UK*).

**1915** WITHDRAWN

**1916** *Candida albicans* in the Dental Plaque of New Zealand Children. D.H. BOYD\*, B.K. DRUMMOND, W.M. THOMSON, and R.D. CANNON (*University of Otago, Dunedin, New Zealand*).

**1917** Comparison between PCR-RFLP and Biochemical Analyses for Identification of *Actinomyces*. J. MATSUYAMA\*, T. SATO, and N. TAKAHASHI (*Pediatric Dentistry, Graduate School of Dentistry, Niigata University, and Oral Biochemistry, Graduate School of Dentistry, Tohoku University, Sendai, Japan*).

**1918** Identification of *Helicobacter pylori* DNA in Dental Plaque of a Venezuelan Population Detected by PCR. A. BERROTERAN, M. PERRONE\*, M. CORRENTI, M. CAVAZZA, C. TOMBAZZI, and R.A. GONÇALVES (*Central University of Venezuela, MSAS, Caracas*).

**1919** Distribution of *Prevotella intermedia* and *Prevotella nigrescens* in Saliva of Periodontally Healthy Children. K. KARI\*, L. NÄSE, J. INKERI, and J.H. MEURMAN (*Institute of Dentistry, University of Helsinki, Finland*).

**1920** Comparison of Caries Status and *Streptococcus mutans* Genotypes between Natural and Adopted Children. I.C. CRUZ, Y. LI, Y.P. PAN, P.W. CAUFIELD, and M.C. FIGUEIREDO\* (*Univale, Brazil; School of Dentistry of University of Alabama, USA; and Federal University of Rio Grande do Sul, Porto Alegre, Brazil*).

**1921** Predominant Cultivable Subgingival Flora of Renal Transplant Recipients. W.K. LEUNG\*, L.J. JIN, J.Y.Y. YAU, A.W.K. CHAN, P.C.S. TSANG, F.C.S. CHU, and T.M. CHAN (*University of Hong Kong, SAR, China*).

**1922** Characterization and Subspeciation of Human Strains of *Fusobacterium necrophorum*. A.J. EWELL\* and W.A. FALKLER, Jr. (*US Army Dental Research Detachment, Great Lakes, IL, and University of Maryland Dental School, Baltimore, USA*).

**1923** Isolation of So-called "Jodococcus" (Miller) from Dental Plaque. M. SATO, F. NAKAZAWA, E.V. CRUZ, and E. HOSHINO\* (*Niigata University, Japan*).

**1924** PCR Detection of *Mogibacterium* from Subgingival Plaque of Humans. S.E. POCO, Jr.\*, F. NAKAZAWA, M. SATO, T. IKEDA, R. TEANPAISAN, and E. HOSHINO (*Faculty of Dentistry, Niigata University, Japan*).

**1925** Molecular Analysis of the Subgingival Microflora in Periodontitis. A. DE LILLO\*, M.A. MUNSON, L. KYRIACOU, F.P. ASHLEY, R.M. PALMER, A.J. WEIGHTMAN, and W.G. WADE (*King's College London, and Cardiff University, UK*).

**1926** Molecular Analysis of Microflora Associated with Endodontic Infections. M.A. MUNSON\*, T. PITT FORD, A. MCNISH, B. CHONG, A.J. WEIGHTMAN, and W.G. WADE (*King's College London, and Cardiff University, UK*).

**Seq#: 213 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral & Maxillofacial Surgery - TMJ Imaging/Disorders**

**1927** Biomechanical Study of Temporomandibular Joint by Finite Element Method. T. MATSUMOTO\*, S. MIYAWAKI, S. FUJIWARA, M. BABA, T. KAWAKAMI, M. SUGIMURA, T. TAKANO, and T. YAMAMOTO (*Kinki University, Wakayama, Okayama University Dental School, Department of Oral and Maxillofacial Surgery, Nara Medical University, Department of Radiology, Nara Hospital, and School of Medicine, Kinki University, Japan*).

**1928** Activation of Synovial Fluid Stromelysin with Temporomandibular Joint Disorders. A. KAMADA\*, K. KAKUDO, T. ARIKA, A. KAWAMOTO, J. OKAZAKI, and G. EMBERY (*Osaka Dental University, Japan; and University of Liverpool, UK*).

**1929** Detection of IL-1 $\beta$  and IL-1 $\beta$ ra in TMJ Intracapsular Irrigation Samples. I. YAMAMORI\*, T. SHIBATA, K. MURAKAMI, E. KUBOTA, and N. YOSHIKAWA (*Department of Dentistry and Oral Surgery, School of Medicine, Yamagata University, Kyoto University, and Kanagawa Dental College, Japan*).

**1930** Detection of Interleukin-6 in the TMJ Intracapsular Irrigation Samples. T. SHIBATA\*, I. YAMAMORI, K. MURAKAMI, E. KUBOTA, and N. YOSHIKAWA (*Department of Dentistry and Oral Surgery, School of Medicine, Yamagata University, Kyoto University, and Kanagawa Dental College, Japan*).

**Seq#: 214 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Periodontal Research - Host Cell Responses to Periodontopathogens**

**1931** Analysis of Cell-death-inducing Factors Isolated from Periodontopathic Bacteria. S. ARAKAWA\*, T. NAKAJIMA, H. ISHIKURA, I. ISHIKAWA, and N. TSUCHIDA (*Tokyo Medical and Dental University, Japan*).

**1932** *Actinobacillus actinomycetemcomitans* Capsular Polysaccharide Inhibits IL-6 and IL-8 Production. Y. OHGUCHI\*, Y. ISHIHARA, M. OHGUCHI, M. KOIDE, Y. MURASE, T. NAGANAWA, T. NISHIHARA, and T. NOGUCHI (*University of Aichi-Gakuin, Nagoya, and Kyushu Dental College, Kitakyushu, Japan*).

**1933** LPS Mediates Osteoclast Differentiation Factor (ODF) Expression in Osteoblasts through TLR. T. KIKUCHI\*, T. MATSUGUCHI, A. MITANI, G. YAMAMOTO, T. NOGUCHI, and Y. YOSHIKAI (*Department of Periodontology, Aichi-Gakuin University, and Laboratory of Host Defense, Nagoya University, Japan*).

**1934** Gene Expression of LPS Receptors in Periapical Periodontitis. T. KUROKAWA\*, T. KAWATO, T. TSURUMACHI, T. IWASE, and I. MORO (*Departments of Endodontics and Pathology, School of Dentistry, Nihon University, Tokyo, Japan*).

**1935** IL-1 $\beta$  Production in Gingival Fibroblasts from Down Syndrome Patients. Y. OTSUKA\*, M. ITO, M. YAMAGUCHI, Y. ABIKO, and J. MEGA (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1936** Roles of CD 14 in LPS-induced Periodontal Tissue Responses. M. MIYAUCHI\*, M. HIRAOKA, S. KITAGAWA, S. SATO, I. OGAWA, and T. TAKATA (*Hiroshima University, Japan*).

**1937** Apoptosis and Necrosis Expression in Crevicular and Salivary PMNs. Y. NUMABE\*, T. OHSAKI, Y. SAITO, and K. KAMOI (*Department of Periodontology, Nippon Dental University, Tokyo, Japan*).

**1938** Smoking Effects on the Elastase of GCF in Periodontitis Patients. L. XU\*, H.X. MENG, and Z.B. CHEN (*School of Stomatology, Peking University, China*).

**1939** The Role of Interleukin-17 in the Progression of Periodontitis. T. AZUMA\*, K. TAKAHASHI, K. MOTOHIRA, H. TAKEDA, J. TATSUMI, and T. MIYATA (*Department of Periodontology, Meikai University, Sakado City, Saitama, Japan*).

**1940** TNF- $\alpha$ - and IL-1 $\beta$ -induced p38 MAP Kinase Activity Has Similar Effects on NF $\kappa$ B Function but Opposing Effects on cEBP $\beta$  Function in Human Osteoblastic Cells. J.R. MCPHERSON\* and S. KOKA (*UNMC College of Dentistry, Lincoln, NE, USA*).

**Seq#: 215 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Periodontal Research - Diseased Periodontal Tissue Responses**

**1941** Evidence for the Role of Poly(ADP-ribose) Polymerase (PARP) Activation in the Pathogenesis of Periodontitis. Z. LOHINAI\*, J.G. MABLEY, E. FEHÉR, A. MÁRTON, L. LIAUDET, A.L. SALZMAN, and C. SZABÓ (*Semmelweis University, Budapest, Hungary; and Inotek Corp, Beverly, MA, USA*).

**1942** *In vitro* 3D Lymphocyte Migration as a Periodontal Healing Model. G. GASSMANN\*, F. ENTSCHLADEN, K.S. ZAENKER, and W.-D. GRIMM (*University of Witten/Herdecke, Germany*).

**1943** Nitric-oxide-mediated Protection of *A. actinomycetemcomitans*-infected Macrophages against Apoptosis. J. TOMIOKA\*, K. NAKASHIMA, S. KATO, T. ITOH, T. NISHIHARA, and Y. KOWASHI (*Health Sciences University of Hokkaido, and Kyushu Dental College, Japan*).

**1944** Hepatocyte Growth Factor (HGF) in Gingival Crevicular Fluid. M. OHSHIMA\*, A. SAKAI, K. ITO, and K. OTSUKA (*Nihon University School of Dentistry, Tokyo, Japan*).

**1945** Heterogeneous Expression of TLR4 on Human Gingival Fibroblasts. P.-L. WANG\* and K. OHURA (*Osaka Dental University, Hirakata, Japan*).

**1946** Production of OPG by Human Gingival Fibroblasts Stimulated with LPS. T. NAGASAWA\*, H. KOBAYASHI, M. ARAMAKI, M. KJI, M. SAITO, Y. MURAKAMI, T. KOJIMA, and I. ISHIKAWA (*Periodontology, Department of Hard Tissue Engineering, Graduate School, Tokyo Medical and Dental University, Japan*).

**1947** Expression of Human Beta-defensin 2 in Epithelium of Periodontal Pocket. M. SUZUKI\*, T. INOUE, M. KOBAYASHI, M. SHIMONO, and S. YAMADA (*Department of Periodontics and Pathology, Tokyo Dental College, Chiba, Japan*).

**1948** Mast Cells—Mediators of Periodontal Tissue Destruction in HIV<sup>+</sup> Patients? E.P. NÆSSE\*, O. SCHREURS, K. HELGELAND, K. SCHENCK, and S. STEINSVOLL (*University of Oslo, Norway*).

**1949** Expression of Syndecan-1 and -2 in Periodontal Wound Healing of the Rat. W. WORAPAMORN\*, Y. XIAO, H. LI, and P.M. BARTOLD (*School of Dentistry, University of Queensland, Australia*).

**1950** Involvement of NF- $\kappa$ B in TNF- $\alpha$ -induced COX-2 Expression in HGF. S. NAKAO\*, Y. OGATA, S. FURUYAMA, and H. SUGIYA (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1951** Flow Cytometric Analysis of Lymphocytes in Periodontitis. K. YAMANEGI\*, M. WATO, H. KOBAYASHI, Y. WATANABE, and A. TANAKA (*Osaka Dental University, Japan*).

**Seq#: 216 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Periodontal Research - Regenerative Therapy**

- 1952** Expressional Profiling of Primary PDL Cells Stimulated by Emdogain®. P.M. BRETT\*, M. PARKAR, I. OLSEN, and M. TONETTI (*Eastman Dental Institute, University College London, UK*).
- 1953** Non-surgical Periodontal Therapy with Vector® and Emdogain®. A. SCULEAN, M. BERAHDAR\*, N. ARWEILER, and M. BRECX (*University of Saarland, Homburg, Germany*).
- 1954** Antibacterial Effect of Emdogain®. T.M. AUSCHILL\*, A. SCULEAN, M. BRECX, and N. ARWEILER (*Dental School, University of the Saarland, Germany*).
- 1955** Attachment of HPDL Cells to EMD is Mediated via Interaction between BSP and  $\alpha\text{v}\beta 3$ . M. OHYAMA\*, N. SUZUKI, M. MAENO, K. OTSUKA, and K. ITO (*Nihon University School of Dentistry, Tokyo, Japan*).
- 1956** Effects of Enamel Matrix Derivative on Proliferation and Differentiation of Periodontal Cells. S. KITAGAWA\*, M. HIRAOKA, S. SATO, M. MIYAUCHI, I. OGAWA, and T. TAKATA (*Hiroshima University, Japan*).
- 1957** Enamel Matrix Derivative Induces Cell Arrest of Human Epithelial Cells. M. YOSHIMORI\*, T. KANAMOTO, Y. IZUMI, and H. NAKASHIMA (*Kagoshima University Dental School, Japan*).
- 1958** Participation of Endogenous IGF-I and TGF- $\beta 1$  Stimulated to be Produced by Enamel Matrix Derivative (EMD) with EMD-stimulated Cell Growth in Human Periodontal Ligament Cells. K. OKUBO\*, M. KOBAYASHI, A. OHAZAMA, T. TAKIGUCHI, T. TAKADA, and K. HASEGAWA (*Showa University Dental School, Tokyo, Japan*).
- 1959** Effects of Chitosan on Human Periodontal Ligament Cells *in vitro*. O.S. KIM\* and H.J. CHUNG (*Chonnam National University, Gwangju, South Korea*).
- 1960** Quantitative Analysis of Whole Blood for PDGF- $\alpha\beta$ . M. ZAVARELLA\*, J. WALTERS, and L. KUPP (*Ohio State University, Columbus, USA*).
- 1961** Regenerative Effect of Platelet-derived Growth Factor-BB Delivered with Anorganic Bovine Bone. S. KHODEIRY\* and E. EL-SHAMY (*Tanta University, Egypt*).
- 1962** WITHDRAWN
- 1963** Quality of Trials in a Systematic Review of Guided Tissue Regeneration. I. NEEDLEMAN\*, R. TUCKER, E. GIEDRYS-LEPPER, and H. WORTHINGTON (*Eastman Dental Institute, UCL, and Cochrane Collaboration, Oral Health Group, Manchester, UK*).
- 1964** A Retrospective Study of Periodontal and Peri-implant Bone Defects with Non-resorbable and Resorbable Membranes. T. VERBECK\* and G. WAHL (*University of Bonn, Germany*).
- 1965** Soft Tissue Progenitor Cell Populations Grown under e-PTFE Membranes Following Wounding. T. OGAWA\*, Y. SHIBUKAWA, H. SUGITO, and S. YAMADA (*Tokyo Dental College, Chiba, Japan*).

**Seq#: 217 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Neuroscience/TMJ - Trigeminal System, Basic Neuroscience**

- 1966** Immunoreactivities of BDNF, NT-3, and Trk in Rat Trigeminal Motoneurons. S. KAWAGISHI\*, Y. MASUDA, and N. AMANO (*Kyushu Dental College, Kitakyushu, Japan*).

- 1967** c-Fos Expression in the Brain after Noxious Intrapulpal Stimulation of the Rat Incisors. W.J. KIM\*, W.M. OH, S.H. KIM, O.J. KIM, and E.J. LEE (*Dental Science Research Institute, Chonnam National University, Kwangju, Korea*).
- 1968** Co-release of ATP and Substance P within Trigeminal Ganglia *in vivo*. Y. MATSUKA\*, J.K. NEUBERT, and I. SPIGELMAN (*UCLA, USA*).
- 1969** Distribution of Receptor-like Protein Tyrosine Phosphatase Alpha in Central Neurons. L. YEOW\*, S. XUE, G. LEI, C. KWAN, and X.M. YU (*Faculty of Dentistry, University of Toronto, and Centre of Addiction and Mental Health, Toronto, Ontario, Canada*).
- 1970** Responsiveness Changes in Vc and RF Tooth-pulp-driven Neurons. M. SUNAKAWA\*, Y. MATSUI, M. KANEKO, and H. SUDA (*Pulp Biology and Endodontics, Tokyo Medical and Dental University, Japan*).
- 1971** TNF $\alpha$  Stimulates IL-8 Expression in Synovial Cells from Human TMJ. M. TOBE\*, N. OGURA, H. SAKAMAKI, S. AKIBA, Y. ABIKO, and H. NAGURA (*Nihon University School of Dentistry at Matsudo, and Asahi General Hospital, Chiba, Japan*).
- 1972** Effect of Eugenol on Intracellular Calcium Concentration in Trigeminal Ganglion. J.H. LEE\*, J.K. LEE, Y.-B. KIM, S. LEE, Z.G. PIAO, K. PARK, and J.S. KIM (*Seoul National University, Korea*).
- 1973** Effects of VIP and PACAP on Voltage-dependent Calcium Currents in Hamster Submandibular Ganglion Cells. K. HAYASHI\*, T. ENDOH, and T. SUZUKI (*Tokyo Dental College, Chiba, Japan*).
- 1974** Expression of Serum-calcium-decreasing Factor, Caldecrin, in the Nervous System. A. TOMOMURA\*, K. ITAGAKI, K. FUJIMOTO, H. YAMADA, A. INABA, and S. KATOH (*Meikai University, Saitama, Japan*).
- 1975** Characterization of Voltage-gated Potassium Currents in Rat TRG Neurons. W.M. OH\*, W.J. KIM, S.H. KIM, C. YOON, and S.Y. JEONG (*Chonnam National University, Korea*).
- 1976** The Changes on the Merkel Cells of Denture-underlying Mucosa. K. ISHIZAKI\*, T. INOUE, M. SIMONO, M. TAZAKI, and K. SAKURAI (*Tokyo Dental College, Chiba, Japan*).
- 1977** Distribution of Merkel Cells in the Human Interdental Papilla. M. TAZAKI\*, Y. TAZAKI, M. SUZUKI, A. KATAKURA, T. INOUE, M. SHIMONO, T. KOBAYASHI, T. KATO, and K. KANEKO (*Tokyo Dental College, Chiba, and Lion Corporation, Tokyo, Japan*).
- 1978** The Periodontal Ruffini Endings in BDNF-KO Mouse Incisor. B. ALKHAMRAH\*, N. HOSHINO, K. HANADA, and T. MAEDA (*Niigata University, Japan*).
- 1979** Loss of Occlusion Affects Jaw Muscle Spindles of the Rat. P. SANTIWONG\*, T. MURAMOTO, K. SOMA, and Y. TAKANO (*Graduate School, Tokyo Medical and Dental University, Japan*).

**Seq#: 218 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

**Oral Medicine & Pathology - Oral Submucous Fibrosis and Oral Cancer: In vitro Studies**

- 1980** Effects of Areca Nut on Oral KB Epithelial Cells. J.H. JENG\* and M.C. CHANG (*National Taiwan University, and Chang-Gung Institute of Nursing, Taiwan*).
- 1981** Collagen Distribution of Cultured Fibroblasts in Oral Submucous Fibrosis after Treatment. C.K. CHAO\*, J.J. WANG, and Y.L. LIU (*Kaohsiung Military General Hospital, National Defense Medical Center, Taiwan*).

- 1982** Arecoline Inhibits Production of Matrix Metalloproteinase by Buccal Mucosal Fibroblasts. Y.C. CHANG\*, Y.S. HSIEH, S.F. YANG, K.W. TAI, and M.Y. CHOU (*School of Dentistry, and Institute of Biochemistry, Chung Shan Medical and Dental College, Taichung, Taiwan*).
- 1983** Anti-oxidant and Anti-carcinogenicity of Hydroxychavicol, a Betel Leaf Component. M.C. CHANG\* and J.H. JENG (*Chang-Gung Institute of Nursing, and National Taiwan University*).
- 1984** Establishment and Characterization of Eight Human Oral Squamous Cell Carcinoma Cell Lines in Koreans. B.-M. MIN\*, G. LEE, M.S. KIM, and Y.-B. KIM (*College of Dentistry, Seoul National University, Korea*).
- 1985** Retinoic Acid Inhibits the Formation of Desmosomes in Oral Mucosal Epithelial Cells. S. HATAKEYAMA\*, S. HAYASHI, and M. SATOH (*Iwate Medical University, Morioka, Japan*).
- 1986** Enhanced Cell Proliferation and Increase of the Activities of G<sub>1</sub> Cyclin-dependent Kinases in Human Oral Keratinocytes. C.-H. GOO\*, C.-M. CHOI, G. LEE, and B.-M. MIN (*College of Dentistry, Seoul National University, Korea*).
- 1987** Characterization of Gene Amplification at 3q26 in Oral Squamous Cell Carcinoma; Identifies SNO and EVI1 as Candidate Target Genes. A. PIMKHAOKHAM\*, I. IMOTO, T. AMAGASA, and J. INAZAWA (*Tokyo Medical and Dental University, Japan*).
- 1988** Regulation of PG Synthase by Cytokines on Oral Carcinoma Cells. C.Y. YANG\*, K.T. YEH, and C.L. MENG (*Department of Dentistry, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan, ROC*).
- 1989** Effects of Extracellular Matrices on MMP Expression in Oral Cancer. S. KOONTONGKAEW\*, P. AMORNPHIMOLTHAM, B. YAPONG, and M. LEELAKRINGSAK (*Department of Oral Biology and Occlusion, Faculty of Dentistry, Prince of Songkla University, Thailand*).
- 1990** Gap Junctions in the Cartilaginous Tumor and Cell Line. M. NAGANO\*, H. SAKAMAKI, K. YAGAMI, S. KAKUTA, and M. NAGUMO (*Showa University, Tokyo, Japan*).
- 1991** Matrix Metalloproteinases-2, -9 and TIMP-2 in Oral Squamous Cell Carcinomas. H.W. CHOI\*, J.H. WOO, J.I. LEE, and S.D. HONG (*College of Dentistry, Seoul National University, Korea*).
- 1992** Correlation of Bcl-2, Box, p53, and MDM2 Protein Expression in the Metastatic Cervical Lymph Nodes of Oral Squamous Cell Carcinoma. S. TOE\*, B. MYINT, and M. TAGAKI (*Institute of Dental Medicine, Yangon, Myanmar; and Tokyo Medical and Dental University, Japan*).
- 1993** Investigation of Micronuclei, Cell Morphology, and P53 Expression in Oral Exfoliative Cells of Premalignant Lesions and SCC. H. LIU\* and X. ZHOU (*School of Stomatology, Peking University, Beijing, China*).
- 1995** Measurement of Mechanical Strain in Mastication with Humanoid-type Robot. T. USUI\*, K. MAKI, Y. TOKI, Y. SHIBASAKI, H. TAKANOBU, A. TAKANISHI, D. HATCHER, and A. MILLER (*Department of Orthodontics, Showa University with Waseda University, Tokyo, Japan; and Department of Growth and Development, University of California, San Francisco, USA*).
- 1996** Masseter and its Adjacent Structures in Adults with Mandibular Prognathism. N. KITAI\*, Y. FUJII, S. MURAKAMI, S. FURUKAWA, S. KREIBORG, and K. TAKADA (*Osaka University, Japan; and University of Copenhagen, Denmark*).
- 1997** Volume and Length Changes in Lateral Pterygoid Muscle after Opening. T.K. GOTO\*, K. TOKUMORI, Y. NAKAMURA, M. YAHAGI, K. HIGASHI, K. YUASA, K. YOSHIURA, K. OKAMURA, and S. KANDA (*Kyushu University, and Asahi Kasei Joho Systems Co., Ltd., Japan*).
- 1998** Dental Compensation for Functional Occlusion in Molar Region. A. KAWAMURA\*, Y. ENOMOTO, K. SAITO, T. KANEDA, L.C. RICHARDS, and K. KASAI (*Department of Orthodontics and Radiology, Nihon University School of Dentistry at Matsudo, Chiba, Japan; and Department of Dent., University of Adelaide, South Australia*).
- 1999** Analysis of Prognostic Factors Related to Persisting of Finger Suckings. S. IJIMA\*, Y. IJIMA, and K. KOBAYASHI (*School of Dentistry, Nagasaki University, Japan*).
- 2000** Evaluation of Lip-closedown-strength in Young Persons. J. TAKAHASHI\*, A. NORO, Y. AKIHIRO, and Y. HIRAI (*Department of Periodontics, and Operative Dentistry, Tokyo Dental College, and Department of Dentistry, Tokyo Dental College Suidobashi Hospital, Japan*).
- 2001** Masticatory Efficiency and Bite Force in Primary Dentition. M.B.D. GAVIÃO\*, V.G. RAYMUNDO, A.M. RENTES, and L. CORRER SOBRINHO (*Dental School of Piracicaba/UNICAMP, Brazil*).
- 2002** Relationship between Deglutitive Tongue Movement and Dentoskeletal Pattern. T. FUJIKI\*, Y. ARAKI, S. MIYAWAKI, K. TANIMOTO, and T. TAKANO-YAMAMOTO (*Okayama University Dental School, and School of Dentistry, Hiroshima University, Japan*).
- 2003** Relationship between Maximum Bite Force and Craniofacial Morphology of Indonesians. P. SONDANG\*, H. KUMAGAI, E. TANAKA, K. TANNE, and T. HAMADA (*Hiroshima University, Japan*).
- 2004** Transient Expression of Myosin Heavy-chain Slow Protein (MHCs) during Development and Regeneration of the Mouse Masseter Muscle. S. ABE\*, K. GOJYO, and Y. IDE (*Oral Health Science Center, Department of Anatomy, Tokyo Dental College, Japan*).
- 2005** Effects of Occlusal Function on Distribution of Periodontal ED1-immunoreactive Cells. E. SUHR\*, J. IIDA, H. WARITA, and K. SOMA (*Graduate School, Tokyo Medical and Dental University, and Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan*).
- 2006** An Investigation of Cuspal Deformation and Delayed Recovery after Occlusal Loading. J. JANTARAT\*, J.E.A. PALAMARA, and H.H. MESSER (*Mahidol University, Bangkok, Thailand; and University of Melbourne, Australia*).
- 2007** Characteristics of Myofibers in Masseter during a Growth Period in Mice. K. GOJO\*, S. ABE, and Y. IDE (*Oral Health Science Center, Tokyo Dental College, Chiba, Japan*).

**Seq#: 219 Saturday, June 30, 11:00 am - 12:15 pm**  
**Poster Session, Makuhari Messe: Exhibit Hall 8**

#### **Craniofacial Biology - Muscles, Function, Occlusion**

- 1994** Asymmetrical Condylar Growth by Imbalanced Mastication. H. NAKANO\*, K. MAKI, Y. SHIBASAKI, D. HATCHER, and A. MILLER (*Department of Orthodontics, Showa University, Tokyo, Japan; and Department of Growth and Development, University of California, San Francisco, USA*).

**2008** Functional Disturbances in the Masticatory System Appearing after Orthodontic Treatment by Means of Fixed Appliances. M. TOMASZ\*, T. MAŚLANKA, T. MATTHEWS-BRZOZOWSKA, S.Z. CHOJNOWSKI, and J. ANTOSZEWSKA (Wrocław Medical University, and University of Medical Sciences, Poznań, Poland).

**2009** Epidemiological Study of a Malocclusion Prevalence in the Permanent Dentition. V.C.V. SIQUEIRA\*, A.B. LUSTOSA, and H.R. LEITE (FOP-UNICAMP, Piracicaba/SP, and FO-PUC, Belo Horizonte/MG, Brazil).

**2010** Discriminant Cephalometric Yardstick in Class III Malocclusion. S.-H. RHEE\* and D.-S. NAHM (Ajou University, and Seoul National University, Korea).

**Seq#: 220** **Saturday, June 30, 1:30 pm - 3:30 pm**  
**Symposium, Makuhari Messe: Room 304**

#### **Dental Anesthesiology Research - Pre-emptive Analgesia in Dentistry**

**Chairperson: Y. Kaneko and R. Dionne**

**2011** 1:30 Preemptive Analgesia in Dentistry. Y. KANEKO\* and J.A. YAGIELA (Tokyo Dental College, Chiba, Japan; and UCLA School of Dentistry, USA).

1:40 Pre-emptive Analgesia: Basic Concepts. R. DUBNER (University of Maryland, Baltimore, US).

2:00 Pre-emptive Analgesia for Minor Dental Procedures. S. GORDON (NIDCR/NIH, Bethesda, MD, US).

2:20 Pre-emptive Analgesia for Major Oral and Maxillofacial Surgery. T. ICHINOHE (Tokyo Dental College, Chiba, Japan).

2:40 A Critical Appraisal of Pre-emptive Analgesia in Dentistry and Medicine. R. DIONNE (NIDCR/NIH, Bethesda, MD, US).

3:00 Discussion

**Seq#: 221** **Saturday, June 30, 1:30 pm - 3:30 pm**  
**Symposium, Prince Hotel: Hall 1**

#### **IADR Salivary Research Group and JADR - Recovery of Function in Salivary Glands**

**Chairpersons: M. Kawaguchi and B. Baum**

**2012** 1:30 Symposium: Recovery of Function in Salivary Glands. M. KAWAGUCHI\* and B.J. BAUM (Tokyo Dental College, Japan; and NIDCR, NIH, USA).

1:35 Genetically Modified Mice: Models of Salivary Gland Hypofunction. J.E. MELVIN (University of Rochester, NY, US).

1:55 Expression and Characterization of Mechanisms for Inhibiting Salivary Secretion. H. YAMAGISHI (Tokyo Dental College, Chiba, Japan).

2:15 Using Array Analysis to Understand Salivary Gland Formation and Branching Morphogenesis. M.P. HOFFMAN (NIDCR/NIH, Bethesda, MD, US).

2:35 Salivary Glands as a Multi-use Platform for Gene Therapy. D.C. OLSON (Genteric, Inc., Alameda, CA, US).

2:55 Characteristics of a Hybrid Vector for Salivary Gland Gene Transfer. C. ZHEN (NIDCR/NIH, Bethesda, MD, US).

3:15 Discussion

**Seq#: 222** **Saturday, June 30, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Makuhari Messe: Room 303**

#### **Craniofacial Biology - Orthodontic Treatment: Clinical and Experimental Studies**

**Chairpersons: J. Philipose and O. Tuncay**

1:45 Poster Viewing

**2013** 2:15 Influence of Mandibular Advancement Splints on Upper Airway in OSAS Patients. W.R. LI\* and J.P. MCDONALD (School of Stomatology, Peking University, Beijing, China; and Edinburgh Dental Institute, UK).

**2014** 2:25 Geometric Morphometry of the Effect of a Bite-jumping Appliance on the Cranial Base. H.P. CHANG\*, P.H. LIU, K. YOSHIDA, T. YOSHIDA, and C.H. CHANG (Kaohsiung Medical University, and National Chen-Kung University, Taiwan; and Osaka Dental University, Japan).

**2015** 2:35 The Effect of First Premolar Extraction or Second Premolar Extraction on the Facial Vertical Dimension. T.K. KIM, Y.K. LEE\*, and W.S. YANG (Department of Orthodontics, College of Dentistry, Seoul National University, Korea).

**2016** 2:45 The Study of the Changes in Dentition by the Type of Premolar Extraction. S.Y. KIM\* and D.S. NAHM (Department of Orthodontics, College of Dentistry, Seoul National University, Korea).

**2017** 2:55 Evaluation of Pendulum Appliance Distalizing Forces with Simulated Tooth Movement. K.C. HWANG\*, J. BRODSKY, M. NELSON, and A.A. CAPUTO (Orthodontics and Biomaterials Science, UCLA School of Dentistry, USA).

**2018** 3:05 Estimation of the Eruptive Force in the Rat Incisor. K. KOMATSU\*, S. OHSHIMA, and M. CHIBA (Tsurumi University, Yokohama, Japan).

**2019** 3:15 Histological Changes in Rat Mandible after Application of an Active Plate. E. OGIHARA\*, K. OGIHARA, and S. AIYAMA (School of Dentistry at Tokyo, Nippon Dental University, Japan).

**2020** 3:25 Simulated Mastication and Friction of Stainless Steel and TMA Wires. J.T. PHILIPOSE\*, L. GETTLEMAN, and B.E. JOHNSON (School of Dentistry, University of Louisville, KY, USA).

3:35 Discussion

**Seq#: 223** **Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Makuhari Messe: Conv Hall B**

#### **Dental Materials - Solvation, Color, Fluoride**

**Chairpersons: S. Suzuki and R. Mills**

**2021** 1:30 The Effects of Polar Solvents on the Tensile Properties of Demineralized Dentin. D.H. PASHLEY\*, W.-K. LEE, K.A. AGEE, and T.E. CALLISON (Medical College of Georgia, Augusta, USA).

**2022** 1:45 Solvation of Dried Dentin Matrix by Water and Other Polar Solvents. D.H. PASHLEY, R.M. CARVALHO, F.R. TAY, K.A. AGEE, and W.-K. LEE\* (Medical College of GA, Augusta, USA; Bauru Dental School, Brazil; University of Hong Kong; and Chonbuk National University, Korea).

**2023** 2:00 Comparing Methodology for Evaluating Color Stability of Resin-based Restoratives. S.L. ROLLAND\*, Y. MOMOI, A. KOHNO, and J.F. McCABE (Tsurumi University, Japan; and University of Newcastle, UK).

**2024** 2:15 Color Stability of Various Dental Composite Restoratives. J. SANG, X. WANG\*, L.C. HAYES, and B.A. HUGHES (DENTSPLY/Caulk, Milford, DE, USA).

- 2025** 2:30 Mechanical and Optical Properties of Composites after Accelerated Aging. K.A. SCHULZE\*, S.J. MARSHALL, and G.W. MARSHALL (*University of California, San Francisco, USA*).
- 2026** 2:45 Release of Fluoride from the Materials Used for "Resin-coating Technique". S. PHANTHAVONG\*, H. SONODA, T. NIKAIIDO, P.N.R. PEREIRA, and J. TAGAMI (*Tokyo Medical and Dental University, Japan; and University of North Carolina at Chapel Hill, USA*).
- 2027** 3:00 Volume Shrinkage of a New Filling Material Based on Siloranes. W. WEINMANN\*, R. GUGGENBERGER, A. STIPP-SCHILD, and K. DEDE (*ESPE Dental AG, Seefeld, Germany*).
- 2028** 3:15 Effect of Resin Matrix Flow on Physical Properties of Dental Composites. K.K. CHOI\*, S.J. PARK, J.R. CONDON, and J.L. FERRACANE (*Kyung-Hee University, Seoul, Korea; and Oregon Health Sciences University, Portland, USA*).

**Seq#: 224 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Prince Hotel: Hall 3**

### Implantology Research - Clinical Studies

**Chairpersons: I. Naert and M. Reddy**

- 2029** 1:30 Evaluation of Factors Influencing the Marginal Bone Stability around Implants in the Treatment of Partial Edentulism. I. NAERT\*, J. DUYCK, M. HOSNY, R. JACOBS, M. QUIRYNEN, and D. van STEENBERGHE (*Department of Prosthetic Dentistry, and Department of Periodontology, K.U. Leuven, Belgium*).
- 2030** 1:45 Characteristics and Outcome of Implant-supported Fixed Superstructures. A Prospective Clinical Study in Partially Edentulous Patients after 3 Years of Loading. A. KRAUSSE, S.M. BESCHNIDT, R. MUCHE, T. GERDS, and J.R. STRUB\* (*Department of Prosthodontics, and Institute of Medical Biometry and Medical Informatics, Albert-Ludwigs-University, Freiburg, Germany*).
- 2031** 2:00 Crestal Bone Changes around Immediate vs. Delayed Implants: A Preliminary Report. L. SCHROPP\*, L. KOSTOPOULOS, and A. WENZEL (*University of Aarhus, Denmark*).
- 2032** 2:15 Early Loading of Unsplinted Brånemark Fixtures with Mandibular Overdentures. A.G.T. PAYNE\*, A. TAWSE-SMITH, R. KUMARA, and W.M. THOMSON (*University of Otago, Dunedin, New Zealand*).
- 2033** 2:30 The Influence of Mandibular Dentition on Implant Failures in Edentulous Maxillae with Bone Graft. J.P. BECKTOR, S.E. ECKERT\*, S. ISAKSSON, P. ABRAHAMSSON, and E.E. KELLER (*Department of Oral and Maxillofacial Surgery, Länssjukhuset, Sweden; and Mayo Clinic, Rochester, MN, USA*).
- 2034** 2:45 Implant Restoration Influence on Residual Ridge Resorption. M.S. REDDY\*, M.K. JEFFCOAT, N.C. GEURS, I.-C. WANG, and P.R. LIU (*School of Dentistry, University of Alabama, Birmingham, USA*).
- 2035** 3:00 Effects of Hydrogen Peroxide and Chlorhexidine on the Bacterial Growth inside Dental Implants. A.M. BUZZELLO\*, M. KOKOSI, H. SCHÜTT-GEROWITT, and W. NIEDERMEIER (*Department of Prosthetic Dentistry and Microbiology, University of Cologne, Germany*).
- 2036** 3:15 Microbiological Findings and Host Response around Failing Implants. M. HULTIN\*, A. GUSTAFSSON, H. HALLSTRÖM, L.Å. JOHANSSON, and B. KLINGE (*Karolinska Institutet, and Länssjukhuset, Halmstad, Sweden*).

**Seq#: 225 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Prince Hotel: Hall 2**

### Microbiology/Immunology & Infection Control - Cariogenic Streptococci

**Chairpersons: D. Beighton and J. Merritt**

- 2037** 1:30 Comparison between GTF 3-D Models Provides Possibility for Vaccine Development. Y.-W. TSAI\*, K.-L. LOU, J.-S. CHIA, H.-C. CHOU, Y.-C. LIAW, and Y.-Y. SHIAU (*Graduate Institute of Oral Biology, College of Medicine, National Taiwan University, Taipei*).
- 2038** 1:45 Reaction of Mutansucrase with the Equimolar Amount of Sucrose. H. MUKASA\*, Y. TAKINO, I. SHIMOTSUURA, H. TSUMORI, and A. SHIMAMURA (*National Defense Medical College, Saitama, and Lion Corporation, Kanagawa, Japan*).
- 2039** 2:00 Interspecies Quorum Signaling in *Streptococcus mutans*. J. MERRITT\*, M. ANDERSON, and W. SHI (*UCLA, and Washington Dental Service, Seattle, USA*).
- 2040** 2:15 Proteomic Analysis of the Low pH Response of *Streptococcus mutans*. J.C. WILKINS\*, K.A. HOMER, and D. BEIGHTON (*GKT Dental Institute, London, UK*).
- 2041** 2:30 Genotypes of Mutans Streptococci on the Tooth Surface Level. I. REDMO EMANUELSSON\*, E. THORNQVIST, K. HAMBERG, and D. BRATTHALL (*Faculty of Odontology, Malmö University, Sweden*).
- 2042** 2:45 Genetic Diversity and Phylogeny of Plasmid Strains of *S. mutans* Derived from an Asian Population. P.W. CAUFIELD\*, Y. LI, W. WANG, and X. ZOU (*University of Alabama at Birmingham, USA; and School of Stomatology, Peking University, Beijing, China*).
- 3:00 Discussion

**Seq#: 226 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Makuhari Messe: Room 201 B**

### Mineralized Tissue - Odontogenesis/Cementogenesis

**Chairpersons: M. MacDougall and M. Somerman**

- 2043** 1:30 Lumican and Fibromodulin Gene Expression during Mouse Tooth Development. T. MATSUURA\*, W.R. DUARTE, M. SHIIBA, K. UZAWA, H. CHENG, H. SATO, and M. YAMAUCHI (*University of North Carolina, Chapel Hill, USA; Fukuoka Dental College, and Chiba University, Japan*).
- 2044** 1:45 Effects of Dentin Phosphoprotein on Differentiation of Odontoblast-like Cells *in vitro*. R. FUJISAWA\*, M. MIZUNO, and Y. KUBOKI (*School of Dentistry, Hokkaido University, Sapporo, Japan*).
- 2045** 2:00 Effects of Dentin Sialoprotein Overexpression in Odontoblast Cells. X. LUAN and M. MACDOUGALL\* (*University of Texas Health Science Center at San Antonio, USA*).
- 2046** 2:15 Establishment of Human Cementifying Fibroblast Cell Lines by Transfection with Temperature-sensitive SV40 T-antigen Gene and hTERT Gene. T. TAKATA\*, Y. KUDO, S. KITAGAWA, M. HIRAOKA, M. ZHAO, S. KAKUO, and T. IDE (*Department of Oral Pathology, and Analytical Chemistry, Hiroshima University, Japan*).
- 2047** 2:30 BMP-2 Induces Differentiation of Dental Follicle Cells. M. ZHAO\*, A. REDDI, Q. JIN, J.E. BERRY, and M.J. SOMERMAN (*University of Michigan, Ann Arbor, USA*).
- 2048** 2:45 Effects of Bone and Dentin Matrices on Cementum Formation. W.J. GRZESIK\*, S. PORNPRASERTSUK, and M. YAMAUCHI (*Dental Research Center, University of North Carolina at Chapel Hill, USA*).

**2049** 3:00 The Effect of Type I Collagen Matrix on the Phenotypes of Dental Pulp Cells. M. MIZUNO\* (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**2050** 3:15 Expression and Roles of RGD-CAP ( $\beta$ ig-h3) in Human Periodontal Ligament. T. DOI\*, S. OHNO, C. IJUIN, K. TANIMOTO, K. HONDA, N. TANAKA, M. NAKAHARA, and K. TANNE (*Department of Orthodontics, Faculty of Dentistry, Hiroshima University, Japan*).

**Seq#: 227 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Makuhari Messe: Room 201 A**

**Neuroscience/TMJ - TMD: Predictors, Assessment, and Outcome**

**Chairpersons: O. Plesh and M. John**

**2051** 1:30 Does Widespread Pain Predict Poor Outcome for Temporomandibular Disorder Pain? M.T. JOHN\*, D.L. MIGLIORETTI, L. LeRESCH, and M. VON KORFF (*University of Halle, Germany; University of Washington, and Center for Health Studies, Group Health Cooperative of Puget Sound, Seattle, USA*).

**2052** 1:45 Predicting Patients' Perceptions of Success Following Short-term TMD Treatment. T. RUDY\*, C. GRECO, H. ZAKI, and H. HENTLEFF (*University of Pittsburgh, PA, USA*).

**2053** 2:00 Pressure-Pain Threshold and the Development of Temporomandibular Disorders. K. BHALANG\*, A. SIGURDSSON, G. SLADE, N. COSTELLO, K. LEONARD, and W. MAIXNER (*University of North Carolina at Chapel Hill, USA*).

**2054** 2:15 Single Photon Emission Computer Tomography (SPECT) Detects Temporomandibular Joint Osteoarthritis. C.-M. TSAI\* (*Craniofacial Center, Chang Gung Memorial Hospital, Taipei, Taiwan*).

**2055** 2:30 Chronic Pains in Young Asian and Hispanic US Women. O. PLESH\*, S.A. GANSKY, and P.B. CRAWFORD (*University of California, San Francisco, and University of California, Berkeley, USA*).

**2056** 2:45 Deranged Control of Concomitant Mandibular and Head-Neck Movements in Individuals Suffering from Whiplash-associated Disorders. P.O. ERIKSSON\*, H. ZAFAR, and B. HÄGGMAN-HENRIKSON (*Clinical Oral Physiology, Umeå University, and Centre for Musculoskeletal Research, NIWL, Umeå, Sweden*).

**2057** 3:00 Comfort Point on Palpation in Patient with TMD. Y. HATANO\*, Y. MARUMO, T. TAGE, T. SAKAI, Y. WATANABE, and A. SHINYA (*Nippon Dental University, Tokyo, Japan*).

**2058** 3:15 Incisal Tooth Wear and Temporomandibular Disorders in Children and Adolescents. C. HIRSCH\*, M.T. JOHN, M. DRANGSHOLT, and H.-G. SCHALLER (*University of Halle, Germany; and University of Washington, Seattle, USA*).

**Seq#: 228 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Makuhari Messe: Room 301 A**

**Oral & Maxillofacial Surgery - Maxillofacial Reconstruction and Imaging**

**Chairpersons: S. Feinberg and U. Meyer**

**2059** 1:30 Mandibular Reconstruction with Frozen Autogenous Bone-iliac Composite Grafts. Z.B. LI\*, S.B. YU, and J.H. ZHAO (*College & Hospital of Stomatology, Wuhan University, PR China*).

**2060** 1:45 Manufactured Scaffolds for Temporomandibular Joint Reconstruction Using Image-based Engineering. S.E. FEINBERG\*, S.J. HOLLISTER, J.W. HALLORAN, T.M.G. CHU, and P.H. KREBSBACH (*University of Michigan, Ann Arbor, USA*).

**2061** 2:00 PLA Membrane Combined with bBMP-PLA Composite on Rabbit Mandible Repair. S.B. YU\*, Z.B. LI, and K.K. AN (*College & Hospital of Stomatology, Wuhan University, PR China*).

**2062** 2:15 Computer-aided Graphic Planning of Craniofacial Operations. U. MEYER\*, T. STAMM, N. MEIER, A. HOHOFF, J. PIFFKO, and U. JOOS (*University of Muenster, Germany*).

**2063** 2:30 Perceptual Evaluation of Consonants in Maxillectomy Patients. Y.I. SUMITA\*, S. OZAWA, H. MUKOHYAMA, and H. TANIGUCHI (*Tokyo Medical and Dental University, Japan*).

**2064** 2:45 Effects of Pre-surgical and Post-surgical Irradiation on the Healing of Medpor® in Dogs. S.G. KIM\* (*Department of Oral and Maxillofacial Surgery, School of Dentistry, Chosun University, Kwangju, Korea*).

**2065** 3:00 The Effects of Ultrasound on Osteoblasts Cultured in vitro. H. SURA\*, R.M. SHELTON, and A.D. WALMSLEY (*School of Dentistry, University of Birmingham, UK*).

**2066** 3:15 CINE-Mode MRI vs. Conventional Static MRI: New Aspects in Comparison with Axigraphy and Ultrasound. A. KOLK\*, A. NEFF, and H.-H. HORCH (*Department of Oral and Maxillofacial Surgery, University of Technology, Munich, Germany*).

**Seq#: 229 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Makuhari Messe: Room 302**

**Periodontal Research - Periodontal Infection and Systemic Conditions**

**Chairpersons: R. Genco and R. Page**

**2067** 1:30 Periodontal Disease and Risk of Myocardial Infarction. R.J. GENCO\*, A. HO, T. WU, S.G. GROSSI, and M. TREVISAN (*Departments of Oral Biology, and Social and Preventive Medicine, SUNY at Buffalo, NY, USA*).

**2068** 1:45 Periodontitis and Cardiovascular Disease in Women. R.L. FALER, S.J. HAIGH\*, N.C. GEURS, W.J. ROGERS, M.S. REDDY, and M.K. JEFFCOAT (*School of Dentistry, University of Alabama, Birmingham, USA*).

**2069** 2:00 Tooth Loss and Peripheral Arterial Disease in U.S. Men. H.C. HUNG\*, K.J. JOSHIPURA, A. ASCHERIO, B.A. ROSNER, E.B. RIMM, and W.C. WILLETT (*Harvard School of Public Health, Boston, MA, USA*).

**2070** 2:15 Alveolar Crestal Bone Resorption and Bone Density in Post-menopausal Women. J. WACTAWSKI-WENDE\*, E. HAUSMANN, M. TREVISAN, K. HOVEY, S.G. GROSSI, and R.J. GENCO (*University at Buffalo, NY, USA*).

**2071** 2:30 Associations between Panoramic Radiographic Findings and Medical Conditions in Older Subjects. R.E. PERSSON, L.G. HOLLENDER, G.R. PERSSON\*, L.V. POWELL, H.A. KIYAK, M.I. MacENTEE, and C. WYATT (*University of Washington, Seattle, USA; and University of British Columbia, Canada*).

**2072** 2:45 Serum Autoantibody Titers Predict Treatment Outcome in IDDM Periodontitis. T.J. SIMS, Å. LERNMARK, L. MANCL, R.E. SCHIFFERLE, R.C. PAGE\*, and G.R. PERSSON (*University of Washington, Seattle, and SUNY at Buffalo, USA*).

3:00 Discussion

**2074** 3:15 Alcohol Consumption and Subsequent Periodontitis Risk among Men. W. PITIPHAT\*, A.T. MERCHANT, K.J. JOSHIPURA, and E.B. RIMM (*Harvard University, Boston, MA, USA*).

**Seq#: 230 Saturday, June 30, 1:30 pm - 3:30 pm**  
**Oral Session, Prince Hotel: Hall 5**

**Prosthodontics Research - Occlusion, Caries, Porcelain Strength, Veneered Ti, Impression Materials**

**Chairpersons: A. Zoellner and K. Kurtz**

**2075** 1:30 The Influence of Altered Occlusal Guidance on Non-working-side Condyle. N. OKANO\*, K. BABA, S. AKISHIGE, and T. OHYAMA (*Tokyo Medical and Dental University, Japan*).

**2076** 1:45 Does the Usage of an Individual Articulator Result in Better Occlusal Contact Patterns?—A Randomized, Double-blind, Clinical Assessment. F. WESSLING\*, B. KORDASS, and B. SCHWAHN (*Department of Prosthodontics and Dental Materials, Ernst-Moritz-Arndt-University Greifswald, Dental School, Germany*).

**2077** 2:00 Registration of Tapping Points with Different Gothic Arch Tracers. M.M. RAHMAN\*, S. KOHNO, K. SAWADA, Y. ARAI, R.U. MEDINA, I. OKAYASU, and H. KOBAYASHI (*Faculty of Dentistry, Niigata University, Japan*).

**2078** 2:15 Histological and Radiographic Assessment of Caries-like Lesions Localized at the Crown Margin. A. ZOELLNER\*, B. DIEMER, A. STASSINAKIS, and P. GAENGLER (*University of Witten/Herdecke, Germany; and University of Berne, Switzerland*).

**2079** 2:30 Hardness of Chemically Strengthened Dental Porcelains. V. TOOPINN\*, J. CHANAVIRAT, N. OUKSOOK, and N. JUNTAVEE (*Faculty of Dentistry, Khon Kaen University, Thailand*).

**2080** 2:45 Effects of Ion-exchange Procedures on Fracture Toughness of Dental Porcelains. N. JUNTAVEE\*, J. CHANAVIRAT, N. OUKSOOK, and V. TOOPINN (*Faculty of Dentistry, Khon Kaen University, Thailand*).

**2081** 3:00 Bond Strengths of Laboratory Veneering Composite to Cast Ti. K. KURTZ\*, Z. CAI, A. LAVACCA, L. CARRASCO, I. WATANABE, and T. OKABE (*NYU College of Dentistry, Baylor College of Dentistry-TAMUSHSC, Dallas, and Montefiore Medical Center/AECOM, Bronx, NY, USA; and Nagasaki University, Japan*).

**2082** 3:15 Video Contact Angle Measurement of Impression Materials on Various Substrates. J.A. SORENSEN\* (*Department of Prosthodontics, Oregon Health Sciences University, Portland, USA*).

**Seq#: 231 Saturday, June 30, 1:30 pm - 5:15 pm**  
**GC-sponsored Symposium, Makuhari Messe: Conv Hall A**

**GC International - Future Technology**  
**[Supported by the IADR and GC International]**

**Chairperson: Y. Akagawa**

**2083** 1:30 Opening Comments.

1:35 State-of-the-Art Implantology in Japan. Y. AKAGAWA (*Hiroshima University, Japan*).

2:15 New Treatment Concepts in Implant Prosthodontics. Y. KOMIYAMA (*Tokyo, Japan*).

3:05 Immediate Functional and Non-functional Loading in Partially and Completely Edentulous Patients: A Prospective Study with Different Implant Designs D.A. PIATTELLI and M. DEGIDI (*University of Chieti, Italy*).

3:55 Tissue-engineered Implant Prosthodontics - Future of Tooth/Bone Replacement. H. SLAVKIN (*University of Southern California, Los Angeles, US*).

4:45 Discussion

**Seq#: 232 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Symposium, Prince Hotel: Hall 5**

**Nutrition and Geriatric Oral Research - Role of Nutrition in Oral and Systemic Disease Relationships**  
**[Supported by Dentsply]**

**Chairpersons: K. Joshipura and J. Jones**

**2084** 3:45 Symposium: Role of Nutrition in Oral and Systemic Disease Relationships. K.J. JOSHIPURA\* and J.A. JONES (*Harvard School of Dental Medicine, and Boston University, USA*).

3:50 Nutrition and Oral Health in the Context of Confounding the Oral-Systemic Association. A. WALLS (*Newcastle University Dental School, Newcastle-upon-Tyne, UK*).

4:15 Interactions Between Nutritional Factors and Inflammatory Mediators of Periodontal Disease. C. RITCHIE (*University of Louisville, KY, US*).

4:40 Obesity and Weight Loss as Mediators of the Oral and Systemic Association. T. SAITO (*Kyushu University, Fukuoka, Japan*).

5:05 Tooth Loss, Diet, and Systemic Disease. K. JOSHIPURA (*Harvard School of Dental Medicine, Boston, MA, US*).

5:30 Discussion

**Seq#: 233 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Symposium, Prince Hotel: Hall 1**

**Dental Materials - Test Methods to Evaluate Adhesive Strength to Tooth Structure**

**Chairperson: G. Øilo**

**2085** 3:45 Test Methods to Evaluate Adhesive Strength to Tooth Structure. G. ØILO\*, L.G. WATANABE, H. SANO, and N. NAKABAYASHI (*University of Oslo, Norway; University of California, USA; Hokkaido University, and Tokyo Medical and Dental University, Japan*).

3:50 The Single-plane Shear Test Assembly. L.G. WATANABE (*University of California, San Francisco, US*).

4:20 Micro-tensile Bond Testing. H. SANO (*Hokkaido University, Sapporo, Japan*).

4:50 Mini-dumbbell Bond Testing. N. NAKABAYASHI (*Tokyo Medical and Dental University, Japan*).

5:20 Discussion

**Seq#: 234 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 304**

**Cariology Research - Caries Progression in Adults, Root Caries, RCT Methods, Caries Prevention, Caries Risk Assessment**

**Chairpersons: C. Longbottom and R. Evans**

**2086** 3:45 Caries Progression Rate in Elderly Melbourne Adults was Less than Expected. R.W. EVANS\*, A.C. CAMPAIN, and M.V. MORGAN (*University of Sydney, and University of Melbourne, Australia*).

**2087** 4:00 Prevalence of Root Caries in Japan: A Preliminary Local Survey in Iwate. D. INABA\*, T. SATOH, and M. YONEMITSU (*Preventive Dentistry, Iwate Medical University, and Iwate Dental Association, Morioka, Japan*).

**2088** 4:15 Proof-of-Principle Abbreviated Caries Clinical Trial: 12-month Outcome. R.K. CHESTERS\*, A. KVEDARIENE, G. MATULIENE, J.R. MATHESON, I. BALCIUNIENE, E. HUNTINGTON, J.A. NICHOLSON, and N.B. PITTS (*Unilever Research Port Sunlight, UK; Vilnius University, Lithuania; and Dundee University, Scotland*).

**2089** 4:30 Dental Disease and Time of Eruption of Permanent Teeth. Z.J. NUGENT, C. LONGBOTTOM\*, and N.B. PITTS (*University of Dundee, Scotland, UK*).

**2090** 4:45 Fluoride and Oral Microflora Control: Combined Role in Caries Decline? T. GOTJAMANOS\* (*Schools of Dentistry and Medicine, University of Western Australia, Perth*).

**2091** 5:00 Chairside Evaluation of Plaque Acidogenicity and Lactate Productivity: Their Relationship with Caries Experience. K. SHIMIZU\* and K. IGARASHI (*Shimizu Pediatric Dental Clinic, Shizuoka, and Naruse Dental Clinic, Miyagi, Japan*).

**2092** 5:15 Caries in Deciduous Teeth Correlated with Caries in Permanent Teeth. Y. LI\*, W. WANG, P.W. CAUFIELD, X. PAN, and H. WU (*School of Dentistry, University of Alabama, Birmingham, USA; and School of Stomatology, Peking University, Beijing, China*).

**2093** 5:30 Assessment of Caries Risk Using the Cariogram Model. G. HÄNSEL PETERSSON\*, S. TWETMAN, and D. BRATTHALL (*University of Malmö, Sweden*).

**Seq#: 235** **Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 201 B**

### **Craniofacial Biology - Craniofacial Anomalies**

**Chairpersons: S. Kiliaridis and J. Ghafari**

**2094** 3:45 Three-dimensional Evaluation of Mid-facial Asymmetry in UCLP. C.E. GRAMATICESCU\*, K. TERADA, K. ISHII, S. MORITA, and K. HANADA (*Niigata University, Japan*).

**2095** 4:00 Prognostic Implications of Nasal Cavity and Cleft Morphology in SBG. S. KAWAKAMI\*, K. HIURA, M. YOKOZEKI, T. SEIKE, H. NAKANISHI, and K. MORIYAMA (*University of Tokushima, Japan*).

**2096** 4:15 Transplantation of New Autologous Biomaterials into Jaw Cleft. T. KAWATA\*, S. KOHNO, T. FUJITA, H. SUGIYAMA, C. TOKIMASA, M. KAKU, K. TSUTSUI, and K. TANNE (*Department of Orthodontics, Faculty of Dentistry, Hiroshima University, Japan*).

**2097** 4:30 Volume and Shape of Masticatory Muscles in Patients with Hemifacial Microsomia. M. TAKASHIMA\*, N. KITAI, S. MURAKAMI, S. FURUKAWA, S. KREIBORG, and K. TAKADA (*Osaka University, Japan; and University of Copenhagen, Denmark*).

**2098** 4:45 Dental Development in Goldenhar Syndrome. M. FARIAS\* and K. VARGERVIK (*School of Dentistry, Central University of Venezuela; and Center for Craniofacial Anomalies, School of Dentistry, University of California, San Francisco, USA*).

**2099** 5:00 Cephalometric Characteristics of Children with Thalassemia in Cipto-Mangunkusumo Hospital, Jakarta. S. RETNO-HAYATI\*, D. MARDJONO, W.T. KARYOMANGGOLO, and M. NAKATA (*University of Indonesia, Jakarta; and Kyushu University, Japan*).

**2100** 5:15 Dentofacial Morphology in Children and Adolescents with Myotonic Dystrophy. S. KILIARIDIS\*, M. ENGVAL, H. KJELLBERG, and C. MORELL (*Department of Orthodontics, University of Geneva, Switzerland; and Department of Orthodontics, Göteborg University, Sweden*).

5:30 Discussion

**Seq#: 236** **Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 201 A**

### **Craniofacial Biology - Biological Mechanisms of Tooth Movement, Eruption, and Craniofacial Adaptation**

**Chairpersons: G. Kulkarni and G. King**

**2101** 3:45 Assessment of PDL Cell Proliferation Induced by Orthodontic Forces. G.L. HAN\*, X.R. CHENG, Z.X. SHEN, and H. HE (*College & Hospital of Stomatology, Wuhan University, PR China*).

**2102** 4:00 Effects of VEGF on Bone Remodeling during Experimental Tooth Movement. S. KOHNO\*, M. KAKU, T. KAWATA, T. FUJITA, C. TOKIMASA, K. TSUTSUI, and M. TANNE (*Department of Orthodontics, Faculty of Dentistry, Hiroshima University, Japan*).

**2103** 4:15 Root Resorption Related to Hypofunctional Periodontium in Experimental Tooth Movement. S. SRINGKARN-BORIBOON\*, Y. MATSUMOTO, and K. SOMA (*Graduate School, Tokyo Medical and Dental University, Japan*).

**2104** 4:30 Studies on Human Primary Failure of Eruption. M. MESSERSMITH\*, R. MIDDLETON, G.E. WISE, and R. D'SOUZA (*Department of Orthodontics, University of Texas Health Science Center, Houston, and Veterinary Anatomy and Cell Biology, LSU, USA*).

**2105** 4:45 The EL Mouse Model for the Study of Congenitally Missing Teeth. R. NOMURA, Y. ASADA, T. MAEDA, A. KHADIVI, A. KHERADMAND, and G.V. KULKARNI\* (*Nihon University, Japan; and University of Toronto, Canada*).

**2106** 5:00 Bone Densitometry and Muscle Weight in Rat Mandibular Osteodistractor. Z.J. LIU\*, L.L. WANG, J.P. CONNOLLY, G.J. HUANG, M.S. WHELAN, and G.J. KING (*Department of Orthodontics & Division of Plastic Surgery, University of Washington, Seattle, USA*).

**2107** 5:15 Scanning Electron Microscopic Observation of Human Periodontal Ligament. T.K. NAKAMURA\*, M. NAKAMURA, T. ONISHI, H. KANEGAYA, K. ISHII, and K. INOUE (*Meikai University, Saitama, and NIID, Tokyo, Japan*).

**2108** 5:30 PTHrP and TGF- $\beta$  Immunoreactivity during Experimental Extraction Socket Healing. T. CHINO\*, A.H. KAFRAWY, and M. SATO (*University of Washington, Seattle, and Indiana University, Indianapolis, USA; and University of Tokushima, Japan*).

**Seq#: 237** **Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 302**

### **Dental Materials - Composite Bonding to Various Substrates**

**Chairpersons: J. Roulet and M. Kern**

**2109** 3:45 Effects of Stressing Conditions on the Shear Strength of Veneer Resins. J.Y. KIM\*, P. PFEIFFER, and W. NIEDERMEIER (*School of Oral Medicine, University at Cologne, Germany*).

**2110** 4:00 A New Technology to Bond Composite to Various Substrates. R. JANDA, J.-F. ROULET\*, and M. WULF (*School of Dental Medicine, Charité, Humboldt-University of Berlin, Germany*).

**2111** 4:15 Influence of Storage Conditions on the Resin Bond Strength to Zirconia Ceramic. S.M. WEGNER\*, W. GERDES, and M. KERN (*Christian-Albrechts University at Kiel, Germany*).

**2112** 4:30 Resin Bond Durability to CoCr Alloy Achieved by Silica Coating Methods. M. KERN\* and P. GRUNDKE (*Christian-Albrechts University at Kiel, and Albert-Ludwigs University of Freiburg, Germany*).

**2113** 4:45 Effect of Silane Agents on Bond Strength of Prosthodontic Composite. N. HISAMATSU\*, M. ATSUTA, and H. MATSUMURA (*School of Dentistry, Nagasaki University, Japan*).

**2114** 5:00 FEISEM Analysis of Z-250 Composite Inlays Cemented with Rely X Cement. L. BRESCHI\*, C. PRATI, P. GOBBI, G. PASQUANTONIO, M. FALCONI, and G. MAZZOTTI (*Department of Human Anatomy, School of Dentistry, University of Bologna, and C.N.R. Bologna, Italy*).

**2115** 5:15 Fracture Resistance of Endodontically Treated Teeth Bonded with Different Systems. S. THONGSUPHAN\*, T. NIKAIIDO, P. SENAWONGSE, and K. TANGSRISERI (*Mahidol University, Bangkok, Thailand; and Tokyo Medical and Dental University, Japan*).

5:30 Discussion

**Seq#: 238 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Int'l Conf Room**

#### Dental Materials - Resin Curing/Chemistry

**Chairpersons: J. Stansbury and S. Kalachandra**

**2116** 3:45 Contraction Stresses of Resin Composite Restorations in Beveled Cavity Preparations. Y. KINOMOTO\*, M. TORII, F. TAKESHIGE, and S. EBISU (*Graduate School of Dentistry, Osaka University, and Kagoshima University Dental School, Japan*).

**2117** 4:00 Effects of Monomer Structure and Resin Composition on Photopolymerization. J.W. STANSBURY\* and J. TANAKA (*University of Colorado Health Sciences Center, Denver, USA; and Okayama University Dental School, Japan*).

**2118** 4:15 Proposed Method of Determining Energy Required for Optimum Polymerization (EOP) by Differential Scanning Calorimetry (DSC). B.I. SUH\*, R. YIN, K. ZABEL, and W. DE RIJK (*Bisco, Inc., Schaumburg, IL, USA*).

**2119** 4:30 Resin Composites: Polymerization Rate vs. Composition and Mode of Cure. A. PEUTZFELDT\* and E. ASMUSSEN (*School of Dentistry, Faculty of Health Sciences, University of Copenhagen, Denmark*).

**2120** 4:45 Influence of Pulse-delay Curing on Softening of Polymer Structures. E. ASMUSSEN\* and A. PEUTZFELDT (*Department of Dental Materials, School of Dentistry, Faculty of Health Sciences, University of Copenhagen, Denmark*).

**2121** 5:00 Improved Filler-matrix Coupling in Composites Through Pre-silanization Decontamination. Y. YOSHIDA\*, B. VAN MEERBEEK, K. SHIRAI, P. LAMBRECHTS, G. VANHERLE, H. SHINTANI, and M. OKAZAKI (*Hiroshima University, Japan; and Catholic University, Leuven, Belgium*).

**2122** 5:15 Sustained Drug Release by a Novel Polymeric Device for Periodontal Condition. S. KALACHANDRA\*, D. LIN, S. OFFENBACHER, and R. WILLIAMS (*COSD, University of North Carolina, Chapel Hill, and Virginia Tech, Blacksburg, USA*).

**2123** 5:30 Photoiniferter Polymerization for Controlled Curing of Cross-linked Dental Materials. S.B. MITRA\* and M.B. ALI (*3M Company, St. Paul, MN, USA*).

**Seq#: 239 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Conv Hall B**

#### Dental Materials - Glass Ionomers/Composites/General

**Chairpersons: C. Shen and R. Guggenberger**

**2124** 3:45 WITHDRAWN

**2125** 4:00 Absorption of Fluoride from Glass Ionomers by Dentin. D.J. INDRANI\*, M. DALIDJAN, and E. MUNADZIROH (*University of Indonesia, University of North Sumatra, and University of Airlangga, Indonesia*).

**2126** 4:15 Influence of pH on Ion Release of a Conventional Glass-ionomer Cement. R. GUGGENBERGER\*, K.-P. STEFAN, and D. EICHLER (*ESPE Dental AG, Seefeld, Germany*).

**2127** 4:30 Hygroscopic Expansion of a Compomer and a Composite on Artificial Gap Reduction. C. HUANG\*, F.R. TAY, S.P. CHEUNG, L.H. KEI, S.H.Y. WEI, and D.H. PASHLEY (*University of Hong Kong SAR, China; and Medical College of Georgia, Augusta, USA*).

**2128** 4:45 Homogeneousness of Chemically Cured Core Composites. C.-P. ERNST, G. MEYER\*, and B. WILLERS-HAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**2129** 5:00 Reasons for Replacement of Restorations in General Dental Practice in Iceland. C. SHEN\*, S. ELIASSON, S. RICHTER, and I.A. MJÖR (*University of Florida, Gainesville, USA; and University of Iceland, Reykjavik*).

**2130** 5:15 Survival Rate and Fracture Strength of Metal-free Partial Crowns. C.F.J. STAPPERT\*, S. CHITMONGKOLSUK, T. GERDS, and J.R. STRUB (*Department of Prosthodontics, and Institute of Medical Biometry and Medical Informatics, Albert-Ludwigs-University, Freiburg, Germany*).

**2131** 5:30 A New Method to Determine the Marginal Adaptation of Temporary Crowns. C.-P. ERNST, I. HARRE\*, and B. WILLERS-HAUSEN (*Johannes Gutenberg-University, Mainz, Germany*).

**Seq#: 240 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Prince Hotel: Hall 2**

#### Microbiology/Immunology & Infection Control - Host Pathogen Infections

**Chairpersons: M. Herzberg and K. Kim**

**2132** 3:45 Calprotectin Modulates Keratinocyte  $\alpha 3$ -integrin Expression and Actin Cytoskeleton. K. NISAPAKULTORN, K.F. ROSS, and M.C. HERZBERG\* (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

**2133** 4:00 Bacterial Invasion in Human Gingival Fibroblasts. H.K. KIM, J.D. CHA, Y.S. KIM, Y.O. YOU, and K.J. KIM\* (*Department of Oral Biochemistry, and Department of Oral Microbiology, School of Dentistry, Wonkwang University, Iksan, Chonbuk, Korea*).

**2134** 4:15 Regulation of Human  $\beta$ -defensin-2 in Gingival Epithelial Cells: Involvement of MAP Kinase Pathways. S. KRISANAPRAKORNKIT\*, J.R. KIMBALL, and B.A. DALE (*Department of Oral Biology, University of Washington, Seattle, USA*).

**2135** 4:30 Oral Health, Oral Floras, and Coronary Heart Disease. H. CHEN\* and S. DENG (*Affiliated Hospital of Stomatology, School of Medicine, Zhejiang University, PRC*).

**2136** 4:45 Alcohol Induces HIV-1 Infection and Replication in T-lymphocytes. X. LIU\*, G. KANAMORI, J. ZHA, H. CHEN, and J. NISHITANI (*Charles R. Drew University, Los Angeles, CA, USA*).

**2137** 5:00 Prevention of Blood-borne Infections: Development of a Therapeutic Vaccine Against the Hepatitis C Virus. L. FRELIN, M. CHEN, C. HULTGREN, U. LAZDINA, M. ALHEIM, P. LUNDHOLM, and M. SÄLLBERG\* (*Division of Clinical Virology, Huddinge University Hospital, Sweden*).

5:15 Discussion

**Seq#: 241 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Prince Hotel: Hall 3**

**Mineralized Tissue - Dentin Matrix Proteins/Dentinogenesis**

**Chairpersons: M. Goldberg and A. Ridall**

**2138** 3:45 Gene Expressions of BMP-2 and BMPR-IB in Mouse Tooth Germs. T. NAKADA\*, T. INAGE, D. KAMOGAWA, Y. SAKAGUCHI, and S. OIDA (*Department of Oral and Maxillofacial Surgery, and Department of Anatomy, Nihon University School of Dentistry, and Department of Oral Biochemistry, School of Dental Medicine, Tsurumi University, Japan*).

**2139** 4:00 Expression of Lysyl Hydroxylase Genes during Mouse Tooth Development. W.R. DUARTE, T. MATSUURA, K. UZAWA\*, M. SHIIBA, H. CHENG, and M. YAMAUCHI (*University of North Carolina, Chapel Hill, USA; Fukuoka Dental College, and Chiba University, Japan*).

**2140** 4:15 Expression of Dentin Sialophosphoprotein Gene in Osteoblasts. C. QIN, E. CADENA, A. RIDALL\*, Y. ISHIWARI, H. NAGATSUKA, N. NAGAI, and W.T. BUTLER (*Department of Basic Sciences, UTHSC-Houston Dental Branch, USA; and Department of Oral Pathology, Okayama University Dental School, Japan*).

**2141** 4:30 Amelogenin Gene Expression in Porcine Odontoblasts. S. OIDA\*, Y. YAMAKOSHI, M. YAMADA, T. NAGANO, and M. FUKAE (*Tsurumi University, and Tokyo Dental College, Japan*).

**2142** 4:45 Dentin and Enamel Regeneration *in vivo*. S. SHI\*, W. LI, A. BOYDE, P.K. DENBESTEN, L.W. FISHER, C. GAO, D. MACHULE, P. GEHRON ROBEY, and S. GRONTHOS (*Craniofacial and Skeletal Diseases Branch, NIDCR/NIH, Bethesda, MD, and School of Dentistry, University of California at San Francisco, USA; and Department of Anatomy and Developmental Biology, University College London, UK*).

**2143** 5:00 Effects of Different Phosphorylase Sequences on Precipitation of Calcium Phosphate. S. CHANG\*, K. GU, B. RUTHERFORD, and B. CLARKSON (*University of Michigan, Ann Arbor, USA*).

**2144** 5:15 Immunoelectron Visualization of Pro- and Secreted Forms of Decorin and Biglycan in the Predentin and during Dentin Formation in the Rat Incisor. D. SEPTIER, R.C. HALL, G. EMBERY, and M. GOLDBERG\* (*Paris V, France; and University of Liverpool, UK*).

**2145** 5:30 Differences in Nucleotide Sequence of Pro- $\alpha$ 1[I] and Pro- $\alpha$ 2[I] Collagen mRNAs in Periodontal Tissues. A.S. NARAYANAN\*, T.M. ROSE, R.A. DAZA, and T. YOKOKOJI (*University of Washington, Seattle, USA*).

**Seq#: 242 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Prince Hotel: Hall 4**

**Periodontal Research - Virulence Factors of Periodontal Pathogens**

**Chairpersons: S. Asikainen and D. Haubek**

**2146** 3:45 Highly Leukotoxic JP2 Clone of *Actinobacillus actinomycetemcomitans* among Moroccan Adolescents. D. HAUBEK\*, O.-K. ENNIBI, K. POULSEN, S. POULSEN, N. BEN-ZARTI, and M. KILIAN (*University of Aarhus, Denmark*).

**2147** 4:00 Secretion and Function of *Actinobacillus actinomycetemcomitans* Outer Membrane Vesicles. D.R. DEMUTH, Y. KOWASHI, and S. KATO\* (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA; and Health Sciences University of Hokkaido, Japan*).

**2148** 4:15 *Actinobacillus actinomycetemcomitans* Serotype-d-specific Antigen Resides in the O-antigen of Lipopolysaccharide. L.E. UKKONEN\*, P.J. PUSSINEN, S. PAJU, T. TIROLA, and S. ASIKAINEN (*University of Helsinki, and National Public Health Institute, Helsinki, Finland*).

**2149** 4:30 Release of *Actinobacillus actinomycetemcomitans* Leukotoxin by Human Serum. A. JOHANSSON, R. CLAESSEN, L. HÄNSTRÖM, and S. KALFAS\* (*School of Dentistry, Umeå, Sweden; and School of Dentistry, Thessaloniki, Greece*).

**2150** 4:45 Generation of Oxidative Stress Metabolites by *Porphyromonas gingivalis*. J.M. PARKHILL\*, P.A. HEASMAN, P.N. MADIANNOS, C. CHAMPAGNE, R.S. LEVY, J.D. BECK, and S. OFFENBACHER (*Newcastle Dental School, UK; and University of North Carolina, Chapel Hill, USA*).

**2151** 5:00 Comparative Effect of MMP-2 Activation by *P. gingivalis* and *A. actinomycetemcomitans*. S. TIRANATHANAKUL\*, K. PATTAMAPUN, T. YONGCHAITRAKUL, and P. PAVASANT (*Chulalongkorn University, Bangkok, Thailand*).

**2152** 5:15 *P. gingivalis* Activates MMP-2 and Increases MT-MMP in PDL Cells. K. PATTAMAPUN\*, S. TIRANATHANAKUL, T. YONGCHAITRAKUL, and P. PAVASANT (*Chulalongkorn University, Bangkok, Thailand*).

**2153** 5:30 The Search for Lytic Bacteriophages of Putative Periodontal Pathogens. T.F. WALSH\*, P.V. MCCRORY, and C.I.W. DOUGLAS (*School of Clinical Dentistry, University of Sheffield, UK*).

**Seq#: 243 Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 301 A**

**Pulp Biology - Pulp Cell Reactions, Cytokines**

**Chairpersons: M. Oyama and T. Kaneko**

**2154** 3:45 Depletion of IP<sub>3</sub>-sensitive Ca<sup>2+</sup> Stores Activates Ca<sup>2+</sup> Channels in Odontoblasts. Y. SHIBUKAWA\* and T. SUZUKI (*Tokyo Dental College, Chiba, Japan*).

**2155** 4:00 Heavy Metal Induces Metallothionein in Rat Dental Pulp. Y. TAMURA\* and K. OHYA (*Graduate School, Tokyo Medical and Dental University, Japan*).

**2156** 4:15 Effect of Lead on Human Dental Pulp Cells *in vitro*. S. THAWEBON, P. CHUNHABUNDIT\*, R. SURARIT, and S. SWASDISON (*Mahidol University, Bangkok, Thailand*).

**2157** 4:30 Role and Modulation of Smad2 in Human Dental Pulp Cells. W.X. HE\*, Z.Y. NIU, S.L. ZHAO, L.B. YAO, and J. CHEN (*Qin Du Stomatological Hospital, Fourth Military Medical University, Xi'an, China*).

**2158** 4:45 Novel Genes Expressed in Injured Dental Pulp. M. OYAMA\*, F. MYOKAI, T. OHIRA, N. SHIOMI, S. TAKASHIBA, and Y. MURAYAMA (*Department of Periodontology and Endodontology, Okayama University Dental School, Japan*).

**2159** 5:00 Effects of Enamel Matrix Derivative on Wound Healing of Pulp. K. GOMI\*, M. TSUCHIDA, K. ENATSU, M. KANAZASHI, Y. YAMAZAKI, N. SUGAWARA, and T. ARAI (*School of Dental Medicine, Tsurumi University, Yokohama, Japan*).

**2160** 5:15 Ultrastructural Classification of Macrophage-associated Antigen-expressing Cells in Periapical Inflammatory Lesions. T. KANEKO\*, T. OKIJI, L. KAN, H. SUDA, and M. TAKAGI (*Tokyo Medical and Dental University, Japan*).

**2161** 5:30 Functional Role of IL-12 and IFN $\gamma$  in Murine Periapical Lesions. H. SASAKI\*, K. BALTO, and P. STASHENKO (*Department of Cytokine Biology, Forsyth Institute, Boston, MA, USA*).

**Seq#: 244**    **Saturday, June 30, 3:45 pm - 5:45 pm**  
**Oral Session, Makuhari Messe: Room 303**

**Pharmacology, Therapeutics, & Toxicology - Plaque, Gingivitis, and Whitening**

**Chairpersons: D. Hu and Y. Li**

**2162** 3:45 Stain Prevention and Reduction Through the Use of a Dental Chewing Gum. C.D. RUHLMAN, E. CHAVES, J. SHETH, M.L. BOSMA, D.L. DOZIER, C.M. KOLLAR, and S.R. SMITH\* (*Hill Top Research, Inc., West Palm Beach, Oracare Research, Orlando, FL, and GlaxoSmithKline, Parsippany, NJ, USA*).

**2163** 4:00 The Effects of a 4% STP Chewing Gum on Calculus. E. CHAVES, N. CONFORTI, S. MANKODI, M.L. BOSMA\*, C.M. KOLLAR, S.R. SMITH, and J.A. TELISCHAK (*Hill Top Research and Dental Products Testing, West Palm Beach, FL, and GlaxoSmithKline, Parsippany, NJ, USA*).

**2164** 4:15 The Effects of Two Chewing Gums on Plaque. J. MILLEMAN, K. MILLEMAN, C.J. KLEBER, M.L. BOSMA, C.M. KOLLAR\*, S.Y. LITTLEJOHN, and S.R. SMITH (*University Park Research Center, Fort Wayne, IN, and GlaxoSmithKline, Parsippany, NJ, USA*).

**2165** 4:30 Clinical Evaluation on Extrinsic Stain Removal of a Whitening Dentifrice—Eight-week Clinical Study in China. X. LI, D.Y. HU\*, H.C. WAN, Y.P. ZHANG, B. STEWART, J. MCCOOL, M.E. PETRONE, W. DEVIZIO, and A.R. VOLPE (*College of Stomatology, WCUMS, China; and Colgate-Palmolive Technology Center, USA*).

**2166** 4:45 The Effects of Cetylpyridiniumchloride, Chlorhexidine, and Zinlactate (Halita®) on Oral Halitosis. E.G. WINKEL\*, S. ROLDAN, A.J. VAN WINKELHOFF, and M. SANZ (*Clinic of Periodontology, and Academic Centre for Dentistry, Amsterdam, The Netherlands; and Universidad Complutense de Madrid, Spain*).

**2167** 5:00 Evaluation of *Paeonia* Extract as a Natural Oral Deodorant. H.K. PARK\*, S.K. PARK, S.N. KIM, H.D. KIM, Y.H. KIM, M.J. RANG, and H.J. AHN (*LG Chemical Ltd./Research Park, Taejon, Korea*).

5:15 Discussion

---



**Makuhari**

**Where the World Meets**