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Smile esthetics: perception and comparison of treated and untreated smiles

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**Introduction:** Although orthodontic treatment is based primarily on occlusal relationships, greater attention is now paid to enhancing dentofacial characteristics to produce optimal facial esthetics. The purposes of this study were to compare smile esthetics among extraction and nonextraction patients and a control group, assess certain dentofacial characteristics in those groups, and discuss how these features relate to smile esthetics.

**Methods:** Panels of orthodontists, plastic surgeons, artists, general dentists, dental professionals, and parents used a 5-point scale to rate smiling photographs of 25 extraction, 25 nonextraction, and 25 untreated control subjects. Dentofacial characteristics of the 3 groups were obtained from lateral cephalometric analyses, direct biometric measurements, and frontal photographs. Smile esthetics and differences among the 3 groups were subjected to 1-way analysis of variance (ANOVA), and Pearson correlation coefficients were calculated to determine the relationship of the variables to the esthetic score.

**Results:** The mean esthetic scores for the extraction, nonextraction, and control groups were 3.15, 3.12, and 3.26, respectively. Visible dentition width relative to the smile width ratio and intercanine distance relative to smile width ratio were significantly different among the groups, with extraction patients showing a slightly wider dental arch relative to the soft tissue ( $P<.05$ ). There was also a significant difference in the U1-SN angle among the groups ( $P<.05$ ), and this variable showed a strong correlation with the esthetic score as did maxillary gingival display ( $P<.05$ ). However, our study groups could not be differentiated in smile esthetics.

The effect of osteogenic medium on the adhesion of rat bone marrow stromal cell  
to the hydroxyapatite

Deliloğlu-Gürhan I, Tuğlu I, Vatanserver HS, Özdal-Kurt F, Ekren H, Taylan M, Şen BH  
SAUDI MEDICAL JOURNAL  
27 (3): 305-311 MAR 2006

**Objective:** To investigate the adhesive properties of bone marrow stromal cell (BMSC) on the hydroxyapatite (HA) particles and analyze their behavior.

**Methods:** The study took place in the Department of the Histology and Embryology, Celal Bayar University, Manisa and in the Department of Bioengineering, Ege University, Izmir, Turkey between 2004 and 2005. We cultured BMSC from the mature rat tibia and differentiated to the osteoblasts by osteogenic medium. The BMSCs were subcultured and were taken to the HA substrate. We measured their proliferation capacity and viability with MTT assay using the spectrophotometric method. Furthermore, we identified the osteoblast-like cells by immunohistochemical staining of osteonectin and osteocalcin and we analyzed the behavior of the cells on different sized HA particles by SEM at the end of 3 days incubation.

**Results:** Osteogenic medium caused the proliferation capacity of BMSC to speed up and the effects appeared earlier. We confirmed the osteoblastic differentiation by staining of most cells with osteoblastic markers. Subcultured cells were similarly adhesive to the HA particles and the osteogenic medium did not alter this behavior. They spread on the substrate similarly. Most of the cells demonstrated the cytoplasmic protrusion. Morphology of the cells did not change much with or without osteogenic medium. Different sizes of HA particles did not affect the adhesive properties of these cells except HA gel. The spreading and attachment ratios of the cells on HA gel were more than the others

**Conclusion:** We found that there was heterogeneity in BMSC on differentiation capacity to the osteoblast, which was a sign of a subpopulation. Adhesive cells showed similar morphology and behavior under the effect of osteogenic medium. The only difference was the spreading capacity on the HA gel where cell used this substrate more effectively for adhesion.

## Gingival crevicular fluid metalloproteinase-25 and -26 levels in periodontal disease

**Emingil G, Kuula H, Sorsa T, Atilla G**  
JOURNAL OF PERIODONTOLOGY  
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**Background:** Tissue destruction associated with the progression of periodontal disease is caused by a cascade of host and microbial proteolytic enzymes. Host-derived matrix metalloproteinases (MMPs) play an important role in the degradation of the extracellular matrix. Leukolysin/membrane-type 6 (MT-6)/MMP-25, the latest member of the MT-MMP subgroup of the MMP family, is primarily expressed by neutrophils and involved in extracellular matrix turnover. Matrilysin-2/MMP-26 (endometase), a novel member of the matrilysin subgroup of the MMP family, can degrade the extracellular matrix, alpha1-antitrypsin, and activate pro-MMP-9. Our study aimed to examine the levels, molecular forms, and degrees of activation of MMP-25 and MMP-26 in gingival crevicular fluid (GCF) from patients with different periodontal diseases.

**Methods:** A total of 105 subjects, 35 with generalized aggressive periodontitis (GAgP), 29 with chronic periodontitis (CP), 20 with gingivitis, and 21 periodontally healthy subjects, were included in this study. Periodontal status was evaluated by measuring probing depth, clinical attachment loss, presence of bleeding on probing, and plaque. GCF MMP-25 and MMP-26 levels were analyzed by computer-quantitated Western immunoblotting using specific antibodies.

**Results:** The 57-kDa soluble pro-MMP-25 and 45- to 47-kDa active form of MMP-25 were detected by Western immunoblots in CP and GAgP GCF, and lesser levels of these soluble MMP-25 immunoreactive bands were detected in gingivitis GCF. An enhanced and similar degree of MMP-25 activation was found in GAgP, CP, and gingivitis groups. There were no detectable MMP-25 immunoreactivities in the healthy subjects' GCF. GAgP and CP groups had elevated GCF MMP-26 levels and degrees of activation compared to the gingivitis and healthy groups ( $P < 0.008$ ). The gingivitis group had higher GCF MMP-26 levels and degree of activation compared to the healthy group ( $P < 0.008$ ).

**Conclusions:** The present study demonstrated the presence of soluble or shed forms of MMP-25 and MMP-26 in GCF of patients with different periodontal diseases. Increased levels and activation of MMP-25 and MMP-26 in GCF are associated with an enhanced severity of periodontal inflammation, suggesting that these novel MMPs can participate in the progression of periodontal diseases. They may prove to be diagnostically useful and could be targets of medication in the future.

## Gingival crevicular fluid laminin-5 gamma 2-chain levels in periodontal disease

**Emingil G, Kuula H, Pirila E, Atilla G, Sorsa T**  
JOURNAL OF CLINICAL PERIODONTOLOGY  
33 (7): 462-468 JUL 2006

**Aim:** Our study aimed to examine the molecular forms and gingival crevicular fluid (GCF) levels of laminin-5 gamma 2-chain in patients with different periodontal disease, and compare the effects of *P.gingivalis* trypsin-like proteinase on intact laminin-5 gamma 2-chain species.

**Methods:** Eighteen patients with generalized aggressive periodontitis (G-AgP), 29 patients with chronic periodontitis (CP), 20 with gingivitis and 20 periodontally healthy subjects were included. Probing depth, clinical attachment loss, presence of bleeding on probing and plaque were recorded. Molecular forms and GCF laminin-5 gamma 2-chain levels and the effects of *P. gingivalis* trypsin-like proteinase on intact laminin-5 gamma 2-chain were analysed by computer-quantitated Western immunoblotting.

**Results:** Laminin-5 gamma 2-chain 40 and 70 kDa fragments could be detected in all groups, in varying levels. The CP group had elevated GCF laminin-5 gamma 2-chain fragment levels compared with the gingivitis and healthy groups ( $p < 0.008$ ). The G-AgP group had GCF laminin-5 gamma 2-chain fragment levels similar to the gingivitis and healthy groups ( $p > 0.008$ ). GCF laminin-5 gamma 2-chain fragments differed clearly from the multiple lower molecular size fragments of *P.gingivalis* trypsin-laminin-5 gamma 2-chain proteinases.

**Conclusion:** Increased GCF laminin-5 gamma 2-chain fragments in periodontitis sites with deep periodontal pocket suggest that these cleaved 40 and 70 kDa fragments could reflect the extent of the inflammatory reaction in CP.

## Effect of an antibacterial adhesive on the bond strength of three different luting resin composites

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JOURNAL OF DENTISTRY

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**Objectives:** Effect of a dentin adhesive system containing antibacterial monomer-MDPB (Clearfil Protect Bond) on the shear bond strength of all-ceramic-IPS Empress 2 restorations luted with three different dual-polymerizing systems (Variolink 2, RelyX ARC and Panavia F 2.0) to dentin was investigated.

**Methods:** One hundred and eight all-ceramic discs (2X3 mm; IPS Empress 2) were fabricated and ultrasonically cleaned. The buccal surfaces of 108 non-carious extracted human premolars were flattened to expose dentin and subsequently polished with 600-grit wet silicon carbide paper. Three dual-polymerizing luting systems had test groups and control groups consisting of 18 samples each. For the test groups Clearfil Protect Bond was applied to the exposed dentin surfaces. Control groups received the original bonding procedures of each adhesive system. After the all-ceramic samples were luted to the teeth, thermocycling was performed 5000 times. Shear bond strengths were tested using Shimadzu Universal Testing Machine until failure. Analysis of fractured dentin surfaces were performed using Optical Microscope at X 10 and X 1000 magnifications and the images were analyzed with Image Analyzer. Data was analyzed with one-way ANOVA and Bonferroni test at a significance level of  $p < 0.05$ .

**Results:** Mean shear bond strength data of the groups in MPa were; Variolink:  $20.45 \pm 4.75$ , Variolink+Clearfil Protect Bond:  $29.32 \pm 2.37$ , RelyX ARC:  $18.82 \pm 3.19$ , RelyXARC+Clearfil Protect Bond:  $25.58 \pm 4.05$ , Panavia F2.0:  $17.11 \pm 2.98$ , Panavia F 2.0+Clearfil Protect Bond:  $24.40 \pm 7.46$ . Application of the antibacterial adhesive increased the shear bond strengths of all three dual-polymerizing systems to dentin ( $p=0.00$ ). The surface analysis showed that most of the specimens showed the adhesive failure mode between the dentin and the composite luting agent interface.

**Conclusion:** The antibacterial adhesive system Clearfil Protect Bond can be safely used to prevent the potential risk of complications resulting from bacterial activity regardless of affecting the bond strength of IPS Empress 2 restorations luted with the dual-polymerizing systems used in this study. (C) 2005 Elsevier Ltd. All rights reserved.

## Bolton tooth size discrepancies in skeletal Class I individuals presenting with different dental angle classifications

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ANGLE ORTHODONTIST

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The objective of this study was to investigate the frequency and association of Bolton tooth size discrepancies with dental discrepancies. Forty-eight skeletal Class I, 60 Class II, and 44 Class III subjects with similar skeletal characteristics were included in this study. Analysis of variance was performed to compare the mean ratios of Bolton analysis as a function of the Angle classification and sex. To determine the prevalence of tooth size imbalances among the three groups of occlusions and the two sexes, chi-square tests were performed. To determine the correlation of tooth size imbalances with certain dental characteristics, Pearson's correlation coefficients were calculated. No statistically significant differences were determined for the prevalence of tooth size discrepancies and the mean values of Bolton's anterior and overall ratios among the occlusal groups and sexes. Bolton's anterior ratio discrepancies had significant correlations with midline shifts ( $P < .05$ ) in Angle Class I cases, with U1-SN angle ( $P < .01$ ) in Angle Class II cases, and with L1-APog distance ( $P < .05$ ) in Angle Class III cases. Bolton discrepancies related to overall ratio had significant correlations with overjet ( $P < .05$ ) in Class I cases, with overbite ( $P < .05$ ) and U1-SN angle ( $P < .01$ ) in Class II cases, and with IMPA ( $P < .01$ ) in Class III cases. A high prevalence of tooth size discrepancies in an orthodontic patient population and the statistically significant correlation of some of these with some dental characteristics suggest that the measurement of interarch tooth size ratios might be clinically beneficial for treatment outcomes.

## Endothelial nitric oxide synthase Glu298Asp gene polymorphism in periodontal diseases

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JOURNAL OF PERIODONTOLOGY  
77 (8): 1348-1354 AUG 2006

**Background:** Endothelial nitric oxide synthase (eNOS) is involved in key steps of immune response. The aim of the present study was to evaluate genotype distribution and genotype-phenotype association in periodontal disease regarding Glu298Asp polymorphism of the eNOS gene.

**Methods:** A total of 272 subjects were included into the study. Genomic DNA was obtained from the peripheral blood of 51 chronic periodontitis (CP) patients, 48 generalized aggressive periodontitis (GAgP), and 173 reference controls. Polymerase chain reaction (PCR) amplification and subsequent BanII restriction fragment length polymorphism (RFLP) analysis were used to detect eNOS Glu298Asp polymorphism. Probing depth, clinical attachment loss, plaque accumulation, and bleeding on probing (BOP) were recorded. The data were analyzed by the chi2 test, logistic regression, and Mann-Whitney U test.

**Results:** The distributions of eNOS Glu298Asp genotypes and alleles were similar among study groups. Subjects with the Asp allele (Asp+) were statistically higher in the CP group compared to the control group (odds ratio [OR] = 1.957; 95% confidence interval [95% CI] = 1.038 to 3.689). In the GAgP group, BOP (%) was significantly higher in patients with the 298Asp allele (Asp+) compared to patients without the Asp allele (Asp-) (P=0.015).

**Conclusions:** The present study showed that eNOS Glu298Asp polymorphism is associated with BOP in GAgP patients. Moreover, the 298Asp allele of the eNOS gene might be related to CP in the Turkish population.

## Evaluation of t-PA, PAI-2, IL-1 beta and PGE(2) in gingival crevicular fluid of rheumatoid arthritis patients with periodontal disease

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JOURNAL OF CLINICAL PERIODONTOLOGY  
33 (9): 605-611 SEP 2006

**Aims:** This study was undertaken to compare periodontal conditions, gingival crevicular fluid (GCF) levels of tissue-type plasminogen activator (t-PA), its inhibitor plasminogen activator inhibitor-2 (PAI-2), interleukin-1 beta (IL-1 beta), prostaglandin E-2 (PGE(2)) in rheumatoid arthritis (RA) patients and control groups.

**Methods:** Twenty-three RA patients, 17 systemically healthy patients with periodontal disease (PD), and 17 systemically and periodontally healthy subjects were recruited. GCF samples were obtained from two single-rooted teeth. Full-mouth clinical periodontal measurements were recorded at six sites/tooth. GCF samples were analysed using relevant ELISA kits. Data were tested statistically by appropriate tests.

**Results:** Total amounts of t-PA, PAI-2 and PGE(2) in GCF samples of the healthy control group were significantly lower than the other groups (p<0.05). The RA group exhibited a higher total amount of t-PA in GCF samples than the PD group (p<0.05). PAI-2, IL-1 beta and PGE(2) total amounts were similar in RA and PD groups (p>0.05).

**Conclusion:** The coexistence of RA and periodontitis does not seem to affect clinical periodontal findings or systemic markers of RA. Similar inflammatory mediator levels in RA and PD groups, despite the long-term usage of corticosteroids, non-steroidal anti-inflammatory drugs, suggest that RA patients may have a propensity to overproduce these inflammatory mediators.

## TGF-beta 1 gene polymorphisms in periodontal diseases

**Atilla G, Emingil G, Köse T, Berdeli A**  
CLINICAL BIOCHEMISTRY  
39 (9): 929-934 SEP 2006

**Background:** Genetic polymorphisms in the TGF-beta 1 gene were shown to interfere with the transcriptional activity of the TGF-beta 1 gene, and this influences the production, secretion or activity of the TGF-beta 1 growth factor. Transforming growth factor-beta 1 (TGF-beta 1) gene polymorphism is associated with risk of inflammatory diseases.

**Objectives:** The aim of this study was to evaluate TGF-beta 1 gene polymorphisms in a Turkish population with different periodontal diseases and to investigate the association between TGF-beta 1 genotype and clinical periodontal parameters.

**Methods:** A total of 134 subjects were included in this study. Genomic DNA was isolated from 51 patients with chronic periodontitis (CP), 43 with generalized aggressive periodontitis (G-AgP) and 40 healthy controls. Three TGF-beta 1 gene polymorphisms were identified by PCR-RFLP and MS-PCR at positions +915G/C, Thr263Ile and 713/8delC. Probing pocket depth (PPD), clinical attachment loss (CAL), plaque accumulation (plaque %) and bleeding of probing were obtained. Chi-square, Mann-Whitney U test and logistic regression analysis were used.

**Results:** There was a slightly significant difference in +915C positive genotype distributions between CP and control groups (OR: 2.46, CI: 1.010-6.005, p=0.047). No significant differences were present between G-AgP and controls in +915C positive genotype. Thr-263Ile and -713/8delC genotype distributions were not different between study groups. There were significant differences in PPD and CAL scores between +915C positive and negative CP patients.

**Conclusion:** These findings suggest that the TGF-beta 1 (+915C) polymorphic allele might be associated with chronic periodontitis in the Turkish population. (c) 2006 The Canadian Society of Clinical Chemists. All rights reserved.

## Epithelial and connective tissue cell CTGF/CCN2 expression in gingival fibrosis

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JOURNAL OF PATHOLOGY  
210 (1): 59-66 SEP 2006

Gingival overgrowth is a side effect of certain medications and occurs in non-drug-induced School of Dental Medicine, 700 Albany Street induced forms either as inherited (human gingival fibromatosis) or idiopathic gingival overgrowth. The most fibrotic drug-induced lesions develop in response to therapy with phenytoin; the least fibrotic lesions are caused by cyclosporin A; and intermediate fibrosis occurs in nifedipine-induced gingival overgrowth. Connective tissue growth factor (CTGF/CCN2) expression is positively related to the degree of fibrosis in these tissues. The present study has investigated the hypothesis that CTGF/CCN2 is expressed in human gingival fibromatosis tissues and contributes to this form of non-drug-induced gingival overgrowth. Histopathology/immunohistochemistry studies showed that human gingival fibromatosis lesions are highly fibrotic, similar to phenytoin-induced lesions. Connective tissue CTGF/CCN2 levels were equivalent to the expression in phenytoin-induced gingival overgrowth. The additional novel observation was made that CTGF/CCN2 is highly expressed in the epithelium of fibrotic gingival tissues. This finding was confirmed by in situ hybridization. Real-time polymerase chain reaction (PCR) analyses of RNA extracted from drug-induced gingival overgrowth tissues for CTGF/CCN2 were fully consistent with these findings. Finally, normal primary gingival epithelial cell cultures were analysed for basal and ktransforming growth factor beta 1 (TGF-beta 1) or lysophosphatidic acid-stimulated CTGF/CCN2 expression at protein and RNA levels. These data indicate that fibrotic human gingival tissues express CTGF/CCN2 in both the epithelium and connective tissues; that cultured gingival epithelial cells express CTGF/CCN2; and that lysophosphatidic acid further stimulates CTGF/CCN2 expression. These findings suggest that interactions between epithelial and connective tissues could contribute to gingival fibrosis. Copyright (c) 2006 Pathological Society of Great Britain and Ireland. Published by John Wiley & Sons, Ltd.

## Gingival crevicular fluid transforming growth factor-beta(1) in several forms of periodontal disease

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ARCHIVES OF ORAL BIOLOGY  
51 (10): 906-912 OCT 2006

**Background:** Transforming growth factor-beta(1) (TGF-beta(1)) has significant effects on periodontal host response regulation. Limited knowledge on the role of TGF-beta(1) in various periodontal disease types and particularly in advanced periodontitis forms warranted the present study. The aim of the present study was to evaluate the gingival crevicular fluid (GCF) TGF-beta(1) levels in patients with different forms of periodontal disease.

**Methods:** GCF TGF-beta(1) levels were investigated in 32 chronic periodontitis (CP), 30 generalized aggressive periodontitis (G-AgP), 15 gingivitis patients and 16 periodontally healthy subjects. Periodontal status was evaluated by measuring probing depth, clinical attachment loss, plaque and bleeding on probing. TGF-beta(1) levels were analyzed by enzyme-linked immunosorbent assay. The results were expressed in terms of total amount (pg) and concentration (pg/mu l).

**Results:** G-AgP and CP groups had significantly elevated GCF TGF-beta(1) total amount compared to healthy group ( $p < 0.008$ ). Moreover, GCF TGF-beta(1) total amount of G-AgP group was significantly higher than that of gingivitis group ( $p < 0.008$ ). G-AgP and CP groups had similar GCF TGF-beta(1) total amount ( $p > 0.008$ ). Significant correlation was found between GCF TGF-beta(1) total amount and all clinical periodontal parameters ( $p < 0.05$ ).

**Conclusions:** The results of the present study suggest contribution of TGF-P, to the pathogenesis of advanced chronic and aggressive periodontitis. TGF-beta(1) may thus be one of the components modulating exaggerated host response together with other major mediators of inflammation. (c) 2006 Elsevier Ltd. All rights reserved.

## Shear bond strength of different adhesives to Er : YAG laser-prepared dentin

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JOURNAL OF ADHESIVE DENTISTRY  
8 (5): 319-325 OCT 2006

**Purpose:** The aim of this study was to examine the influence of Er:YAG laser on the shear bond strength of three different adhesives to lased dentin.

**Materials and Methods:** Seventy specimens obtained from 35 extracted human molars were embedded in polyester resin and ground with silicon carbide papers. The samples were divided into seven groups. 1. Er:YAG laser (Key Laser 3, KaVo) + Clearfil Protect Bond (Kuraray); 2. Er:YAG laser + Clearfil tri-S Bond (Kuraray); 3. Er:YAG laser + 37% H3PO4 + Single Bond 2 (3M-ESPE); 4. Er:YAG laser + Single Bond 2; 5. conventional method + Clearfil Protect Bond; 6. conventional method + Clearfil tri-S Bond; 7. conventional method + 37% H3PO4 + Single Bond 2. The samples were subjected to shear bond testing 24 h after bonding. Statistical analyses were carried out by two-way ANOVA, t-test, one-way ANOVA, post-hoc Tukey's and Dunnett C test ( $p = 0.05$ ).

**Results:** Only the Er:YAG laser + Clearfil tri-S Bond group demonstrated significantly higher bond strengths vs conventionally prepared specimens ( $p < 0.05$ ). There were no significant differences between the shear bond strengths of Single Bond 2 adhesive applied to laser- vs bur-treated specimens ( $p > 0.05$ ). In laser prepared samples, Clearfil Protect Bond showed the highest scores ( $p < 0.05$ ), whereas in conventionally prepared groups, no statistical differences were observed between Clearfil Protect Bond and Clearfil tri-S Bond ( $p > 0.05$ ).

**Conclusion:** Er:YAG laser irradiation did not adversely affect the shear bond strength of Single Bond 2 and Clearfil Protect Bond to dentin, whereas it increased the shear bond strength values of Clearfil tri-S Bond.

### Ultrastructural stages of biofilm development of *Escherichia coli* on urethral catheters and effects of antibiotics on biofilm formation

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UROLOGY  
68 (5): 942-96 NOV 2006

**Objectives:** Biofilm formation on biomaterials by various kinds of bacteria renders the infection chronic, and the bacteria can become resistant to the immune system and antibiotics. Developmental biofilm stages of *Escherichia coli* on urethral catheters have not yet been thoroughly demonstrated. We aimed to show biofilm formation of *E.coli* on urethral catheters, and the effects of various antibacterial agents on this formation using scanning electron microscopy.

**Methods:** Using urine infected with uropathogenic *E. coli* type O4 (10<sup>5</sup> to 10<sup>6</sup>) colony forming units/mL, biofilm was formed on latex/silicone balloon catheters in a modified Robbin's device. The study included an infected-only group and four antibiotic study groups (ciprofloxacin, cefuroxime, gentamicin, and trimethoprim). The catheters were infused with the antibiotic solutions once before placement in the modified Robbin's devices. Ten 5-mm catheter samples were taken for all groups on the first, fourth, and seventh days. The 4 and 12-hour and 2-day samplings were also taken from the infected-only group. The catheter samples were evaluated by scanning electron microscopy and given scores according to the level of formation.

**Results:** The biofilm layers emerged between 4 and 12 hours after infection in the infected-only group and had developed completely between 12 and 24 hours. The antibiotics, especially cefuroxime, significantly delayed this process for up to 4 days. However, the biofilm had developed completely in almost all catheter samples after 4 to 7 days.

**Conclusions:** Biofilm of *E coli* on urethral catheters had completed their maturation at 12 to 24 hours. For short-term urethral catheterization, a single dose of antibiotic can delay the development of biofilm for up to 4 days but eventually cannot prevent it.

### Bacterial microleakage of barrier materials in obturated root canals

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JOURNAL OF ENDODONTICS  
32 (11): 1074-1076 NOV 2006

The bacterial microleakage of four current restorative materials (glass ionomer cement, polycarboxylate cement, resin modified glass ionomer cement, and flowable composite resin) used as a base over obturated root canals were evaluated during a 5-month period. Sixty single-rooted mandibular premolars were obturated with cold lateral compaction of gutta-percha. The teeth were randomly divided into five groups of 10 teeth each and positive and negative control groups of five. The access openings were filled with one of the tested barrier materials in four groups. In group 5, no barrier material was placed. Samples were incorporated in a model system using *Staphylococcus epidermidis* as a microbial marker. Results were analyzed with Kaplan-Meier survival analysis ( $p=0.05$ ). The sealing ability of all tested materials was better when compared with group 5 (no barrier material) ( $p<0.05$ ). Within the limitations of this study, the glass ionomer cement leaked significantly less when compared with the flowable composite resin ( $p<0.05$ ).

### Relationship between IL-1A polymorphisms and gingival overgrowth in renal transplant recipients receiving Cyclosporin A

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JOURNAL OF CLINICAL PERIODONTOLOGY  
33 (11): 771-778 NOV 2006

**Aim:** Levels of interleukin-1 alpha (IL-1 alpha) are elevated in periodontal inflammation. IL-1A gene polymorphisms are associated with inflammatory diseases. This study aimed to investigate IL-1A gene polymorphism in Cyclosporin A (CsA)-treated renal transplant patients and investigate the association between this polymorphism and gingival crevicular fluid (GCF) levels of several cytokines.

**Materials and Methods:** Fifty-one renal transplant patients on CsA treatment (25 with and 26 without gingival overgrowth) and 29 healthy controls were recruited for the study. Demographic, pharmacological and periodontal parameters were recorded and gingival overgrowth was assessed.

**Results:** Multiple regression analysis showed that genotype was significantly associated with gingival overgrowth ( $p=0.02$ ). Carriage of the IL-1A (-889) T allele was strongly protective [95% confidence interval (CI): 0.046-0.77], although not significantly associated with IL-1 alpha protein levels in GCF. IL-1 alpha, IL-1 beta and IL-8, but not IL-6, were detected in GCF of CsA-treated patients, but none of them was significantly associated with gingival overgrowth.

**Conclusions:** This study is the first to associate a gene polymorphism as a risk factor for CsA-induced gingival overgrowth in renal transplant patients, demonstrating that IL-1A polymorphism might alter individual susceptibility to CsA. However, there was no association between GCF cytokine levels and the presence of gingival overgrowth or patient IL-1A genotype.

### The influence of diabetes on gingival crevicular fluid beta-glucuronidase and interleukin-8

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JOURNAL OF CLINICAL PERIODONTOLOGY  
33 (11): 784-790 NOV 2006

**Abstract:** Objectives: Polymorphonuclear neutrophil (PMN) dysfunction is associated with diabetes. We examined the gingival crevicular fluid (GCF) beta-glucuronidase (BG) and interleukin-8 (IL-8) levels of periodontitis patients with and without type 2 diabetes mellitus (DM).

**Material and methods:** Forty five adults with type 2 DM and 32 adults without DM, both with chronic periodontitis were enrolled. GCF was collected from eight posterior sites in each quadrant, and periodontal parameters were recorded. GCF was assayed for IL-8 by ELISA and BG by a fluorometric assay.

**Results:** GCF IL-8 was positively correlated with probing depth (PD), and GCF BG but not clinical attachment level (CAL), bleeding on probing (BOP), or plaque index (PI). In contrast, GCF BG was strongly correlated with each of the clinical measures of periodontal disease. Subjects with DM significantly lower levels of both BG ( $73.0 \pm 44.8$  versus  $121.9 \pm 84.6$  pg/sample;  $p=0.002$ ) and IL-8 ( $32.1 \pm 33.1$  versus  $90.8 \pm 83.2$  pg/sample;  $p<0.0001$ ) even after adjustments for age, gender, PD, CAL, BOP, and PI. Neither BG nor IL-8 was correlated with HbA1c levels in subjects with DM.

**Conclusion:** These data suggest that an inadequate local response by PMN, partially explained by an altered chemokine gradient, may contribute to periodontal disease in patients with type 2 DM.



## Clinical efficacy of a new software developed for dental digital subtraction radiography

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DENTO MAXILLO FACIAL RADIOLOGY  
35 (6): 417-421 NOV 2006

**Objectives:** The aim of this study was to test and compare the efficacy of software developed recently for digital subtraction radiography (DSR) in vivo.

**Methods:** An algorithm performing both manual and automated image reconstructions and contrast correction was developed for the manipulation of radiographic images. Pre- and post-operative radiographic images of ten patients were obtained and the automated subtraction analyses were performed using four different softwares (new software, Emago, Photoshop 8.0 and Paintshop Pro 9). Ten experienced dental specialists evaluated the clinical efficacy of each program and scored the softwares by using visual analogue scales (VAS). The results were statistically analysed and alpha was set as 0.05.

**Results:** The newly developed algorithm received higher scores than the others (new software =67.89, Emago = 64.26, Paintshop Pro 9 = 33.41 and Photoshop 8.0 = 27.24, respectively). The clinical efficacies of the new software and Emago were not significantly different ( $P=0.720$ ); likewise, Photoshop 8.0 and Paintshop Pro 9 performed comparably ( $P=0.295$ ).

**Conclusions:** Considering this study, the new software and Emago would be suggested for DSR in dental practice.

## A clinical evaluation of resin-based composite and glass ionomer cement restorations placed in primary teeth using the ART approach: results at 24 months

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JOURNAL OF THE AMERICAN DENTAL ASSOCIATION  
137 (11): 1529-1536 NOV 2006

**Background:** The authors evaluated the 24-month performance of a packable resin-based composite/dentin bonding system and a high-viscosity glass ionomer cement (GIC) in restorations placed in primary molars with the atraumatic restorative treatment (ART) approach.

**Methods:** Three dentists placed 419 restorations in 219 children aged 6 through 10 years who had bilateral matched pairs of carious posterior Class I and II primary teeth. They used a split-mouth design to place the two materials, which were assigned randomly to contralateral sides. The authors evaluated the restorations according to U.S. Public Health Service Ryge criteria.

**Results:** After 24 months, 96.7 percent of the Class I GIC restorations and 91 percent of the resin-based composite restorations survived, while the success rates for the Class II restorations were 76.1 percent and 82 percent for the GIC and resin-based composite restorations, respectively. The survival rate of the Class II resin-based composite restorations was 5.9 percent higher than that of the GIC restorations at the 24-month evaluation, but this difference was not statistically significant. However, the study results showed a statistically significant difference in survival rates between Class I and II restorations for both materials.

**Conclusion and Clinical Implications:** The two-year clinical performance of both materials was satisfactory for the restoration of Class I and II primary molars using the ART approach.

## Gingival crevicular fluid matrix metalloproteinase-13 levels and molecular forms in various types of periodontal diseases

İlgenli T, Vardar-Şengül S, Gürkan A, Sorsa T, Stackelberg S, Köse T, Atilla G  
ORAL DISEASES  
12 (6): 573-579 NOV 2006

**Background:** The purpose of this study was to evaluate the levels, molecular forms and activation degree of matrix metalloproteinase-13 (MMP-13) in the gingival crevicular fluid (GCF) of patients with periodontal diseases and to correlate these findings with periodontal clinical parameters.

**Methods:** Sixty one subjects participated in this study as healthy (n=18), gingivitis (n=17), aggressive periodontitis (AgP; n=15) and chronic periodontitis (CP; n=11) groups. Clinical measurements and GCF samples were obtained from each subject. The molecular forms of MMP-13 in GCF samples were analyzed by Western immunoblotting method. Differences among the groups were assessed using non-parametric statistical analysis.

**Results:** In the CP group, levels of 29-30 kDa fragment of MMP-13, total MMP-13, and activated form of MMP-13 were significantly higher than in the healthy, gingivitis and AgP groups. GCF levels of all molecular forms of MMP-13 in AgP group were similar to those of healthy and gingivitis groups. Total and activated MMP-13 levels were positively correlated with all clinical parameters. 29-30 kDa fragment levels of MMP-13 were also positively correlated with papillary bleeding index and plaque index.

**Conclusion:** These results indicate that elevated GCF MMP-13 levels may play an important role in the pathogenesis of CP. These data demonstrate, for the first time, pathologically activated and elevated MMP-13 in GCF.

## Adjunctive low-dose doxycycline therapy effect on clinical parameters and gingival crevicular fluid tissue plasminogen activator levels in chronic periodontitis

Emingil G, Gürkan A, Atilla G, Berdeli A, Çınarcık S  
INFLAMMATION RESEARCH  
55 (12): 550-558 DEC 2006

**Objective and Design:** The present study examined effectiveness of low-dose doxycycline (LDD) in combination with nonsurgical therapy on gingival crevicular fluid (GCF) tissue plasminogen activator (t-PA) levels and clinical parameters in chronic periodontitis (CP) a over 12-month period.

**Methods:** GCF samples were collected, probing depth (PD), clinical attachment level (CAL), gingival index (GI) and plaque index were recorded at baseline, 3, 6, 9 and 12 months. CP patients (n=65) were randomized to LDD or placebo groups. LDD group received LDD (20 mg) b.i.d for 3-months plus and root planing (SRP), while placebo group was given placebo capsules b.i.d for 3-months plus SRP. GCF t-PA levels were determined by ELISA. Friedman, Wilcoxon and Mann-Whitney test was used for statistical analysis.

**Results:** Significant improvement was observed in all clinical parameters in both groups over 12-month period ( $p<0.01$ ). LDD group had lower PD, CAL and GI scores than placebo group at 6, 9 and 12-months ( $p<0.05$ ). GCF t-PA levels reduced in both groups over 12-month period ( $p<0.01$ ). LDD group had lower GCF t-PA levels than placebo group at 6 and 9-months ( $p<0.05$ ).

**Conclusions:** These results provide additional information about usefulness of LDD therapy as an adjunct to nonsurgical therapy in long-term management of periodontitis.

## Gingival crevicular fluid matrix metalloproteinase (MMP)-7, extracellular MMP inducer, and tissue inhibitor of MMP-1 levels in periodontal disease

**Emingil G**, Tervahartiala T, Mäntylä P, Määttä M, Sorsa T, **Atilla G**

JOURNAL OF PERIODONTOLOGY

77 (12): 2040-2050 DEC 2006

**Background:** During periodontal inflammation, matrix metalloproteinases (MMPs) are under the control of several regulatory mechanisms including the upregulation of expression by inducers and downregulation by inhibitors. Our study aimed to examine the levels and molecular forms of MMP-7, tissue inhibitor of MMP (TIMP)-1, and extracellular matrix metalloproteinase inducer (EMMPRIN) in gingival crevicular fluid (GCF) from patients with different periodontal diseases.

**Methods:** A total of 80 subjects (20 patients with generalized aggressive periodontitis [GAgP], 20 with chronic periodontitis [CP], 20 with gingivitis, and 20 periodontally healthy subjects) were included in this study. Periodontal status was evaluated by measuring probing depth, clinical attachment loss, presence of bleeding on probing, and plaque. GCF MMP-7, TIMP-1, and EMMPRIN levels and molecular forms were analyzed by enzyme-linked immunosorbent assay (ELISA) and Western immunoblot techniques using specific antibodies.

**Results:** Total amounts of GCF MMP-7 were found to be similar between the study groups. GAgP, CP, and gingivitis groups had significantly higher total amounts of GCF EMMPRIN compared to healthy subjects ( $P < 0.008$ ). Among the patient groups, the GAgP group had the highest total amount of GCF EMMPRIN relative to the gingivitis group ( $P = 0.0004$ ). Soluble EMMPRIN existed in GCF in multiple molecular-weight species especially in periodontitis-affected GCF under non-reducing conditions, i.e., 30-, 55-, 100-, 180-, and 200-kDa species. All patient groups had significantly elevated total amounts of GCF TIMP-1 relative to the healthy group ( $P < 0.0001$ ). GAgP and CP groups also had a higher total amount of GCF TIMP-1 compared to the gingivitis group ( $P < 0.0001$  and  $P < 0.0001$ , respectively). The GAgP group had higher GCF TIMP-1 and EMMPRIN levels compared to the CP group, but this elevation did not reach statistical significance.

**Conclusions:** Our data indicate that MMP-7 is associated with the innate host defense in periodontal tissues. Increased EMMPRIN and TIMP-1 levels in GCF are associated with the enhanced severity of periodontal inflammation, indicating that these molecules can participate in the regulation of progression of periodontal diseases. To our knowledge, the present study demonstrated the presence of soluble forms of EMMPRIN in GCF of patients with different periodontal diseases for the first time.

## Survival of self-etch adhesive Class II composite restorations using ART and conventional cavity preparations in primary molars

Eden E, Topaloğlu Ak A, Frencken JE, van't Hof M  
AMERICAN JOURNAL OF DENTISTRY  
19 (6): 359-363 DEC 2006

**Purpose:** To test the null-hypothesis that there was no difference in the survival percentages of Class II composite restorations in primary teeth produced through either ART or conventional approaches after 2 years.

**Methods:** 157 children with 325 Class II cavitated dentin lesions were included in a split-mouth study design. A computer program randomly assigned cavitated dentin lesions to treatment groups stratified for gender, operator, upper/lower jaw and left/right side of the mouth. Three operators placed resin composite (Pertac II) restorations using a self-etch adhesive (Prompt L-Pop). Two independent examiners evaluated the restorations after 0.5, 1 and 2 years using the modified Ryge criteria. A modification of the actuarial survival method was applied to estimate survival percentages.

**Results:** There was no statistically significant difference ( $P>0.05$ ) observed between the cumulative survival percentages of Class II composite restorations in primary teeth produced by the two approaches after 2 years (ART:  $34.9\% \pm 4.7\%$ ; conventional:  $35.1\% \pm 4.7\%$ ). The cumulative survival percentages of ART and conventional Class II restorations of one of the operators were lower than for ART restorations of the other two operators and for conventional restorations of one of the operators ( $P<$  or  $=0.001$ ). The main reason for Class II composite restorations to fail over the 2-year period was complete loss of retention; ART: 75%; conventional: 77%. The null-hypothesis was accepted as there was no difference in the cumulative survival percentages of ART and conventional Class II composite restorations in primary teeth after 2 years. It appears that the low survival results obtained may have been caused by poor bonding of the self-etch adhesive.

## Oral and dental manifestations of young asthmatics related to medication, severity and duration of condition

Ersin NK, Gülen F, Eronat N, Çoğulu D, Demir E, Tanaç R, Aydemir S  
PEDIATRICS INTERNATIONAL  
48 (6): 549-554 DEC 2006

**Background:** The aim of this study was to investigate the caries risk of asthmatics in relation to dental plaque indices, salivary flow rate, pH and buffer capacity, saliva composition and salivary levels of *Streptococcus mutans* compared with healthy subjects and also to evaluate these parameters within different groups of asthmatics according to their medication, duration and severity of the disease.

**Methods:** The study group composed of 106 asthmatics and 100 healthy controls with the same age and social background aged between 6 and 19-years-old. For dental examinations, World Health Organization criteria and for plaque indices the Silness and Løe plaque index was used. All data were analyzed using t-test, chi2-test, Spearman rank correlation, Kruskal- Wallis, Mann-Whitney U-tests and Logistic Regression Analysis with Forward Stepwise Likelihood ratio method.

**Results:** A statistically significant decrease in the salivary flow rate and pH were found in the asthmatic group. The children in the asthmatic group aged between 6 and 10 years had significantly higher caries prevalence compared with the control group at the same age. There was a negative correlation between the duration of medication and the salivary pH and a positive correlation between duration of illness and the salivary levels of *S. mutans* in the asthmatics.

**Conclusion:** It was found that asthma, through its disease status and its pharmacotherapy, carries some risk factors including decreased salivary flow rate and pH for caries development. It was also demonstrated that the duration of medication and illness had significant influences on the risk of caries in asthmatics.

## Stain retention and surface characteristics of posterior composites polished by one-step systems

Türkün LS, Lelebicioğlu EA  
AMERICAN JOURNAL OF DENTISTRY  
19 (6): 343-37 DEC 2006

**Purpose:** To compare susceptibility to stain of three posterior composite surfaces polished with two one-step polishing systems, to test the efficiency of the re-polishing to remove the stain formed and to analyze the polished surfaces by SEM.

**Methods:** The resin composites tested were Clearfil Photo Posterior, SureFil and Filtek P60. The polishing systems used were Sof-Lex Brush and PoGo. Twenty-two discs of each material were fabricated and divided into two treatment groups of 11. Out of the latter, six were used for SEM evaluation for surface morphology and five for stain retention testing. The discs were roughened with silicon paper and polished for 30 seconds with each system. Specimens were immersed in coffee and distilled water for 7 days. Color measurements were made at baseline and after 1, 3, 5, and 7 days with a spectrophotometer. The specimens were then re-polished with the same systems and their colors re-measured. All comparison of color change and re-polishing were subjected to repeated measures ANOVA with a Bonferroni post hoc test ( $P < 0.05$ ).

**Results:** After 1 week, the coffee stained all the resin composites. Clearfil Photo Posterior was the least stained composite while Filtek P60 was the most. Regardless of the materials, PoGo polishing was less susceptible to staining ( $P < 0.05$ ). The color change could be partially removed with re-polishing. The surfaces of Sof-Lex Brush polished samples, except the Clearfil group, were scratched and thus more susceptible to stain retention.

## Effect of antioxidant on coronal seal of dentin following sodium-hypochlorite and hydrogen-peroxide irrigation

Pamir T, Türkün M, Kaya AD, Sevgican F  
AMERICAN JOURNAL OF DENTISTRY  
19 (6): 348-352 DEC 2006

**Purpose:** To reduce the microleakage of a self-etching priming dentin adhesive with the use of antioxidant or bur finishing after sodium-hypochlorite or hydrogen-peroxide irrigation.

**Methods:** 70 single-root canals were enlarged and seven different treatment protocols were applied throughout the root canal treatment: The roots in Groups 1, 2, and 3 were irrigated with sodium-hypochlorite. Group 1 was used as the negative control with only sodium-hypochlorite irrigation whereas in Group 2, sodium-ascorbate was applied as an additional irrigation agent following sodium-hypochlorite. Irrigation procedure in Group 3 was same as in Group 1, however, after the roots in this group were obturated, cavities were cleaned off with a carbide bur (bur-finishing) to remove the effect of sodium-hypochlorite. Hydrogen-peroxide irrigation was used in Groups 4, 5 and 6; the procedural steps were similar to those of Groups 1, 2 and 3: hydrogen-peroxide in Group 4, sodium-ascorbate application in Group 5, and bur-finishing in Group 6. Group 7 was the positive control with saline irrigation alone. All roots were obturated with Diaket sealer and gutta-percha cones using cold lateral condensation technique immediately after irrigation. A self-etching priming adhesive plus resin composite was applied after the endodontic treatment. The microleakage of dentin margins was determined using dye-penetration technique with clearing process.

**Results:** The Kruskal-Wallis followed by Mann-Whitney test showed that both sodium-hypochlorite and hydrogen-peroxide deteriorated the marginal seal of the dentin adhesive ( $P < 0.05$ ), however, following both irrigation solutions the use of sodium-ascorbate reduced the microleakage ( $P < 0.05$ ). Additionally, when sodium-ascorbate or bur-finishing was applied to remove the deterioration caused by sodium-hypochlorite or hydrogen-peroxide, the microleakage scores obtained were not different from that of the positive control ( $P > 0.05$ ).

## Effect of various treatment and glazing (coating) techniques on the roughness and wettability of ceramic dental restorative surfaces

**Aksoy G, Polat H, Polat M, Coşkun G**

COLLOIDS AND SURFACES B-BIOINTERFACES

1; 53 (2): 254-259 DEC 2006 Epub 27: SEP 2006

Surface treatment procedures such as grinding and polishing are needed to provide the ceramic dental restorative materials with proper fitting and occlusion. The treated surfaces are customarily glazed to improve the strength and smoothness. Though smoothness and wetting of the dental surfaces are important to minimize bacterial plaque retention, influence of the surface treatment and glazing procedures on the final surface roughness and its correlation to wettability are overlooked. In this work, effect of various treatment (diamond fraising, stoning, sanding and aluminum oxide and rubber polishing) and glazing (auto and overglazing) techniques on the final roughness and the resulting wettability of dental ceramic surfaces were investigated using scanning electron microscopy (SEM) observations and atomic force microscopy (AFM) scans, 75 scans per sample. The surfaces were characterized and assigned an average roughness measure,  $R(a)$ . The wettability of the same surfaces was evaluated using micro-contact angle measurements (25 micro-bubbles placed on a grid on each surface) to correlate the final surface roughness and wettability. The results show that overglazing prevails over surface irregularities from different treatment procedures and provides homogeneously smooth surfaces with mean  $R(a) < 10$  nm. It also produces uniformly wetted surfaces with low contact angles around 20 degrees. The autoglazed surfaces are less smooth (mean  $R(a)$  around 50 nm) and displays sporadic topographic irregularities. They display larger and less uniform contact angles ranging between 35 degrees and 50 degrees. The results suggest that overglazing should be preferred after surface treatment to obtain a smooth and well-wetted dental ceramic surface.

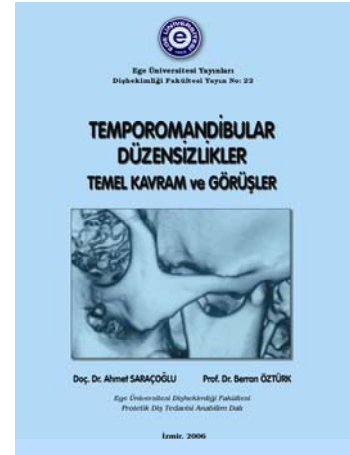
## TEMPOROMANDİBULAR DÜZENSİZLİKLER (TMD) TEMEL KAVRAM ve GÖRÜŞLER

Doç. Dr. Ahmet SARAÇOĞLU (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

Prof. Dr. Berran ÖZTÜRK (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Çiğneme sistemi ve öğeleri
- Fonksiyonel anatomi
- Temporomandibular eklem ve kas muayenesi
- Çene hareketleri
- Çiğneme sisteminin fonksiyonel hareketleri
- Okluzyon
- Alt üst çenelerin birbirine göre konumları
- Çene hareketleri sırasında okluzal ilişkiler
- Diş dizilerinin morfolojisi
- Okluzal morfolojinin belirleyicileri
- Hanau'nun artikülasyon yasaları
- Okluzal yüzeylerin morfolojisi ve okluzal ilişkiler

İsteme Adresi: Ege Üniversitesi Dişhekimiği Fakültesi 35100 Bornova-İZMİR



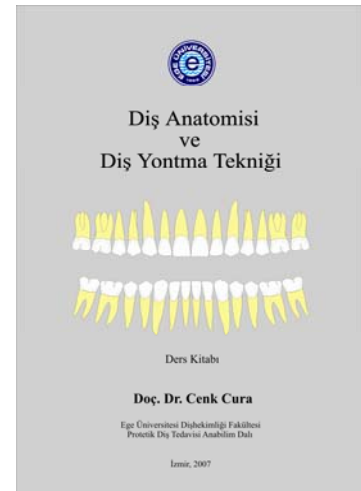
- 62 sayfa
- Renkli baskı
- 67 açıklama resim
- 85 gr. 1. hamur kağıt
- Bristol kapak, renkli
- 16x24 cm boyutlarında

## DIŞ ANATOMİSİ VE DIŞ YONTMA TEKNİĞİ

Doç. Dr. Cenk CURA (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Dişin bölümleri
- Dişin dokuları
- Diş formülleri
- Dişlerin gelişimi
- Süt dişleri
- Dişlerin boyutları
- Morfolojik terimler
- Kalıcı maksiller santral diş (üst 1. kesici diş)
- Kalıcı maksiller lateral diş (üst 2. kesici diş)
- Kalıcı mandibular santral diş (alt 1. kesici diş)
- Kalıcı mandibular lateral diş (alt 2. kesici diş)
- Kalıcı maksiller kanin diş (üst köpek dişi)
- Kalıcı mandibular kanin diş (alt köpek dişi)
- Kalıcı maksiller 1. premolar diş (üst 1. küçük kazı dişi)
- Kalıcı maksiller 2. premolar diş (üst 2. küçük kazı dişi)
- Kalıcı mandibular 1. premolar diş (alt 1. küçük kazı dişi)
- Kalıcı mandibular 2. premolar diş (alt 2. küçük kazı dişi)
- Kalıcı maksiller 1. molar diş (üst 1. büyük kazı dişi)
- Kalıcı maksiller 2. molar diş (üst 2. büyük kazı dişi)
- Kalıcı mandibular 1. molar diş (alt 1. büyük kazı dişi)
- Kalıcı mandibular 2. molar diş (alt 2. büyük kazı dişi)
- Kalıcı maksiller 3. molar diş (üst 3. büyük kazı dişi)
- Kalıcı mandibular 3. molar diş (alt 3. büyük kazı dişi)
- Model dişin yontularak biçimlendirilmesi
- Diş çizimleri

İsteme Adresi: Ege Üniversitesi Dişhekimiği Fakültesi 35100 Bornova-İZMİR



- 245 sayfa
- Renkli baskı
- 150 açıklama resim
- 135 gr. 1. mat kuşe kağıt
- Kuşe kapak, renkli
- 16x24 cm boyutlarında

## ENDODONTİDE TANI VE TEDAVİLER

Prof. Dr. M. Kemal ÇALIŞKAN (E.Ü. Dişhek. Fak. Diş Hastalıkları ve Tedavisi A.D.)

- Endodontik tanı – semiyoloji
- Dentin hastalıklarının pulpaya etkisi ve vital endodontik tedaviler
- Pulpa hastalıkları
- Periapikal hastalıklar
- Endodontik mikrobiyoloji
- Diş rezorbsiyonları
- Endodontik periapikal ilişkiler
- Kron ve kök pulpa anatomisi ve giriş kavimleri
- Kök kanal tedavisine hazırlık
- Kök kanal aletleri ve kanal genişletme yöntemleri
- Endodontik materyallerin biyouyumluluğunu ve kök kanallarının irigasyonu
- Smear tabakasının apikal ve koroner sızıntıdaki rolü
- Kök kanal tedavisinde kanal içi medikasyon
- Kök kanal patları
- Kök kanal dolgu yöntemleri
- Endodontik tedavi sonrası restorasyon
- Kanal tedavisi sonrası iyileşme
- Kanal tedavisinin başarısını etkileyen faktörler
- Endodontik tedavilerde başarısızlıklar ve çözümleri
- Kanal tedavisinin yenilenmesi
- Tarvmatik diş yaralanmaları ve tedavileri
- Kök kırıkları
- Periodontal doku yaralanmaları
- Alveol kemiğinin ve gelişmekte olan dişlerin yaralanmaları
- Kök gelişimini tamamlamış sürekli dişlere uygulanan tedavi yöntemleri
- Endodontik cerrahi tedavi
- Süt dişlerinde endodontik tedaviler
- Endodontik beyazlatma

İsteme Adresi: Nobel Tıp Kitabevleri

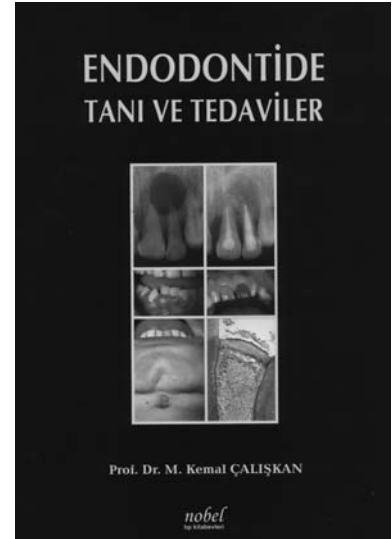


## İŞLEVSSEL OKLÜZAL MORFOLOJİ OLUŞTURMA YÖNTEMLERİ

Doç. Dr. Gökhan AKSOY (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- İşlevsel oklüzal morfolojiye giriş
- İşlevsel oklüzal morfoloji oluşturma yöntemleri
- Oklüzal yüzeyin morfolojisi
- İşlevsel oklüzal morfoloji oluşturma yöntemleri ile diğer modelaj yöntemlerinin kıyaslaması
- İşlevsel oklüzal morfoloji oluşturma yöntemlerinde kullanılan gereçler
- İşlevsel oklüzal morfoloji oluşturma yöntemleriyle modelajda alınması gereken önlemler
- İşlevsel oklüzal morfoloji oluşturma uygulamalarındaki analizler
- İşlevsel oklüzal morfoloji oluşturma yöntemlerinde ön işlemler
- İşlevsel oklüzal morfoloji oluşturmada modelaj

İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova – İZMİR



- 831 sayfa
- Renkli baskı
- 712 açıklamalı renkli resim ve şekil
- 90 gr. parlak kuşe kağıt
- Mukavva cilt, kapak
- 20x28 cm boyutlarında



- 47 sayfa
- 80 gr. 1. Hamur kağıt
- 17x24 cm boyutlarında



## TÜM SERAMİK KRONLAR

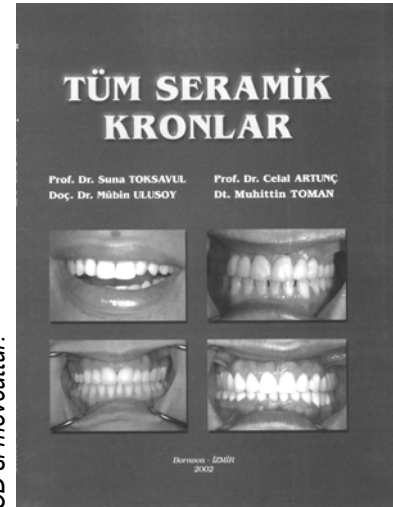
*Prof. Dr. Suna TOKSAVUL* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

*Prof. Dr. Celal ARTUNÇ* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

*Doç. Dr. Mübin ULUSOY* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

*Dt. Muhittin TOMAN* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Tüm seramik kronların tarihçesi
- Tüm seramik kronlar hakkında genel bilgi
- IPS-Empress-2 sistemi
- Rengin belirlenmesi
- Diş kesimi
- Ölçü
- Geçici kron yapımı
- Kronun hasta ağzına uyumlandırılması
- Simantasyon
- Klinik uygulamalar



CD'si mevcuttur.

- 90 sayfa
- Renkli baskı
- 148 açıklamalı renkli resim ve şekil
- 135 gr. Mat kuşe kağıt
- Bez cilt
- 20x28 cm boyutlarında

İsteme Adresi: Quintessence Elektrokent A Blok 11. Kat 80270 Şişli - İSTANBUL

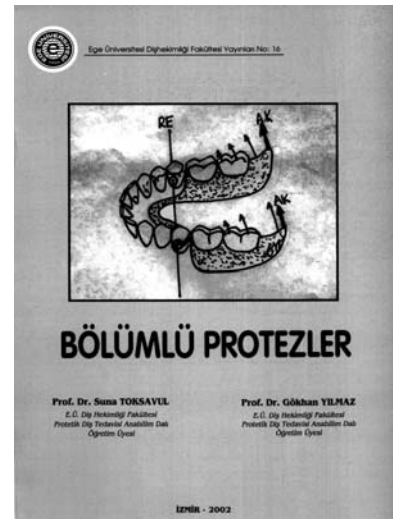


## BÖLÜMLÜ PROTEZLER

*Prof. Dr. Suna TOKSAVUL* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

*Prof. Dr. Gökhan YILMAZ* (E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Protrezin tanımı ve çeşitleri
- Protez öncesi ağız hazırlığı
- Bölümlü protezlerde ölçü
- İskelet protezin elemanları
- Üst ve alt ana bağlayıcılar
- Kroşeler
- İndirekt tutucular
- Bölümlü protezlerde stabilite
- Tırnaklar
- İskelet protezlerde endikasyon ve planlama
- Metal iskelet yapımı
- Bölümlü protezlerde diş dizimi
- Bitmiş protezlerin ağızda kontrolü



- 155 sayfa
- Siyah-beyaz baskı
- 152 açıklamalı renkli resim ve şekil
- 80 gr. I. hamur kağıt
- Bristol kapak, renkli
- 20x28 cm boyutlarında

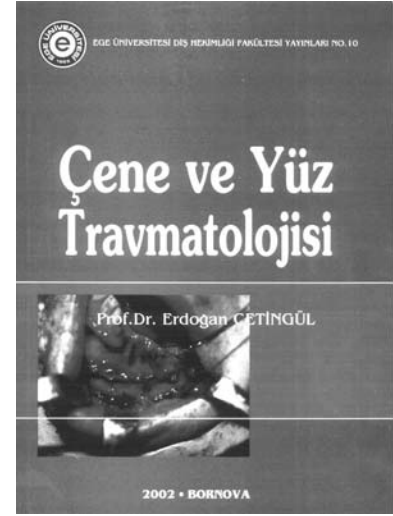
İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova - İZMİR

## ÇENE ve YÜZ TRAVMATOLOJİ

Prof. Dr. Erdoğan ÇETİNGÜL

(E.Ü. Dişhek. Fak. Ağız Diş ve Çene Hsatalıkları Cerrahisi A.D.)

- Anatomi
- Genel bilgiler
- Kırık tedavisinde genel prensipler
- Dişlerin ve çevre dokuların travmaları
- Alt çene kırıkları
- Alt çene kırıklarının tedavisi
- Alt çene kırıklarının çeşitli klinik özelliklerine göre uygulanacak tedavi yöntemleri
- Çocuklarda alt çene kırıkları ve tedavileri
- Kafa travmaları
- Orta yüz kırıkları
- Çene yüz kırıklarında hatalı tedavi sonucu oluşan sekeler
- Kırık tedavisinde kullanılan plaka ve vidaların neden olduğu metal reaksiyonları



- 219 sayfa
- Renkli-siyah-beyaz baskı
- 240 açıklamalı renkli resim ve şekil
- 115 gr. kuşe kağıt
- Bristol kapak, renkli
- 20x28 cm boyutlarında

İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova - İZMİR

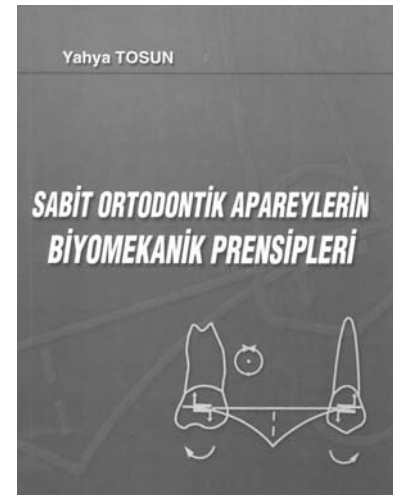


## SABİT ORTODONTİK APAREYLERİN BİYOMEKANİK PRENSİPLERİ

Prof. Dr. Yahya TOSUN

(E.Ü. Dişhek. Fak. Ortodonti A.D.)

- Fiziksel prensipler
- Ortodontik kuvvetin oluşturulması ve sabit apereylerin planlanması
- İki diş arasındaki ilişkinin incelenmesi
- Sürtünmeli ve sürtünmesiz sistemler
- Ağız dışı apereyler
- Ankraj kontrolü ve seviyeleme
- Çekim boşluklarının kapatılması



- 246 sayfa
- Renkli-siyah-beyaz baskı
- Açıklamalı 149 şekil ve 25 resim
- 135 gr. kuşe kağıt
- Bez cilt
- 20x28 cm boyutlarında

İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova - İZMİR

## İÇ HASTALIKLARI

Prof. Dr. Ali TERCİ

(E.Ü. Dişhek. Fak. İç hastalıkları öğretim üyesi)

- Ağrı (Baş, Yüz ve Boyun Ağrıları)
- Kardiovasküler sistem hastalıkları
- Solunum sistemi hastalıkları
- Sindirim sistemi hastalıkları
- Endokrin ve metabolizma hastalıkları
- Hematolojik sistem hastalıkları
- Hemostaz ve hemorajik hastalıklar
- İmmün sistem hastalıkları
- Böbrek hastalıkları
- Kollagen doku hastalıkları
- Alerji ve alerjik hastalıklar
- Nörolojik hastalıklar
- Gebe ve gebelik



- 330 sayfa
- Siyah-beyaz baskı
- 90 gr. I. hamur kağıt
- Bristol kapak, renkli
- 17x24 cm boyutlarında

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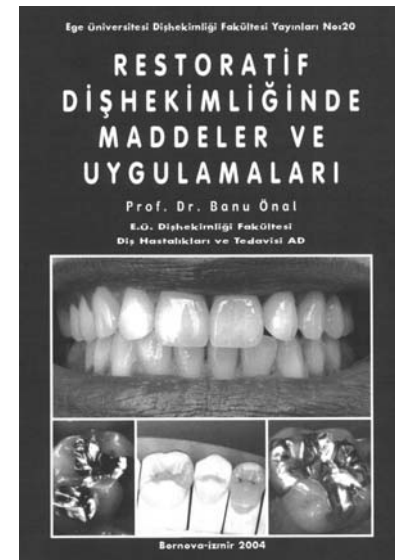


## RESTORATİF DIŞHEKİMLİĞİNDE MADDELER VE UYGULAMALARI

Prof. Dr. Banu ÖNAL

(E.Ü. Dişhek. Fak. İç hastalıkları öğretim üyesi)

- Simanlar
- Amalgam
- Kompozit dolgu maddeleri
- Cam iyonomer simanlar
- Cam iyonomer hibrit kombinasyonları
- Bağlayıcı ajanlar
- Laklar ve vernikler
- İnley, onley ve overleyler restorasyon maddeleri
- Ağartma ajanları



- 171 sayfa
- Trigromi (renkli) baskı
- 110 açıklamalı renkli resim
- 135 gr. kuşe kağıt
- Bristol kapak, renkli
- 16x24 cm boyutlarında

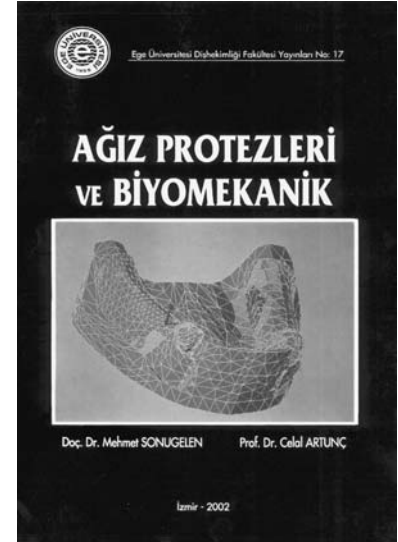
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## AĞIZ PROTEZLERİ VE BİYOMEKANİK

Doç. Dr. Mehmet SONUGELN  
(E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

Prof. Dr. Celal ARTUNÇ  
(E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Biyomekanik
- Sabit protetik uygulamalarda biyomekanik
- Hareketli bölümlü protez biyomekaniği
- Tam protezler ve biyomekanik
- Oral implantlar ve biyomekanik



- 172 sayfa
- Renkli-siyah-beyaz baskı
- 79 açıklamalı resim ve şekil
- 135 gr. mat kuşe kağıt
- Bristol kapak, renkli
- 16x24 cm boyutlarında

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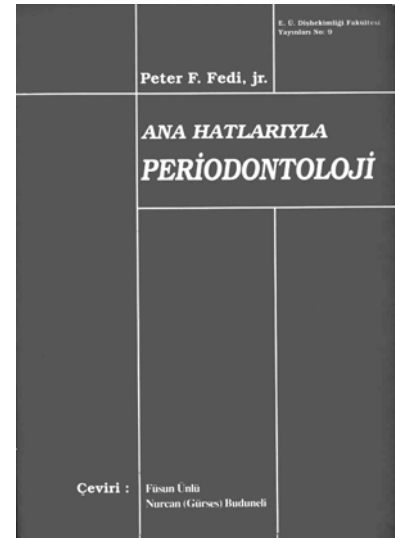


## ANA HATLARIYLA PERİODONTOLOJİ

Prof. Dr. Füsun ÜNLÜ  
(E.Ü. Dişhek. Fak. Periodontoloji A.D.)

Dr. Nurcan GÜRSES BUDUNELİ  
(E.Ü. Dişhek. Fak. Periodontoloji A.D.)

- Periodonsiyumun anatomisi
- Periodontal hastalıkların patogenezi
- Cerrahi olmayan periodontal tedaviler
- Cerrahi periodontal tedaviler
- Periotontolojide acil
- Periodonsiyum ve oklüzyon



- 230 sayfa
- Siyah-beyaz baskı
- 152 resim ve şekil
- 90 gr. 1. hamur kağıt
- Bristol kapak, renkli
- 17x25 cm boyutlarında

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## KONSERVATİF DİŞHEKİMLİĞİNDE RESTORATİF MATERYALLER VE UYGULAMALARI

*Prof. Dr. Banu ÖNAL*

(E.Ü. Dişhek. Fak. Diş Hastalıkları ve Tedavisi A.D.)

*Doç. Dr. Rıza ALPÖZ*

(E.Ü. Dişhek. Fak. Pedodonti A.D.)

- Cam iyonomer hibrit kombinasyonları
- Simanlar
- İnley, onley ve overleyler
- Amalgam
- Kompozit dolgu maddeleri
- Cam iyonomer simanlar
- Dentin bağlayıcılar
- Laklar ve vernikler
- Ağartma ajanları
- Fissür örtücüler



*Restoratif materyaller hakkında teorik bilgiler ve klinik kullanımları ile ilgili görsel dökümanlar bulunmaktadır. Ayrıca CD'de E.Ü. Dişhekimliği Fakültesi'ni tanıtan bölümler yer almaktadır.*

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## KRANYOMANDİBULER DÜZENSİZLİKLER

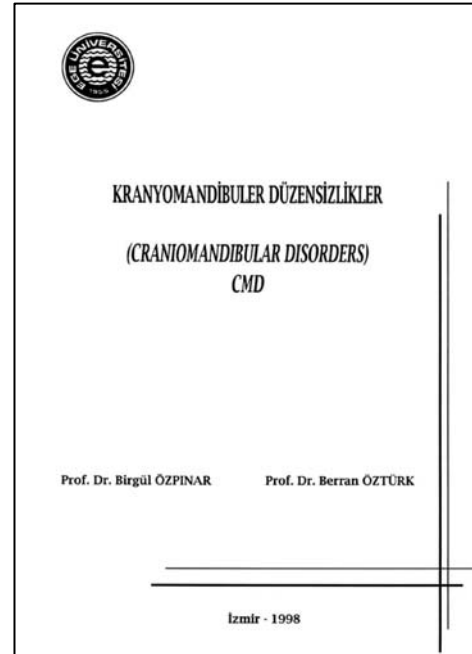
*Prof. Dr. Birgül ÖZPINAR*

(E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

*Prof. Dr. Berran ÖZTÜRK*

(E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Genel Bilgiler
- Etiyoloji
- Sınıflandırma
- Değerlendirme
- Tedavi



- 80 sayfa
- Siyah-beyaz baskı
- 80 gr. 1. hamur kağıt
- Bristol kapak, renkli
- 14x20 cm boyutlarında

*İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova-İZMİR*

## DİŞ SERT DOKULARINDA TARAMALI ELEKTRON MİKROSKOBU ATLASI

*Prof. Dr. Banu ÖNAL*

(E.Ü. Dişhek. Fak. Diş Hastalıkları ve Tedavisi A.D.)

*Prof. Dr. Ferit ÖZATA*

(E.Ü. Dişhek. Fak. Diş Hastalıkları ve Tedavisi A.D.)

*Thomas G.H. Diekwisch D.D.S. Ph.D.*

(Baylor College of Dentistry, Texas A&M University System  
Department of Biomedical Sciences, Dallas, Texas, ABD)

- Sağlıklı dokuların histolojik görünümüleri
- Restorasyon maddelerinin görünümüleri
- Tedavi amacı ile uygulanan yöntemler sonrası diş sert dokularının görünümü

- 103 sayfa
- Siyah-beyaz baskı
- 137 açıklamalı resim
- 85 gr. 1. hamur kağıt
- Bristol kapak, renkli
- 16x24 cm boyutlarında



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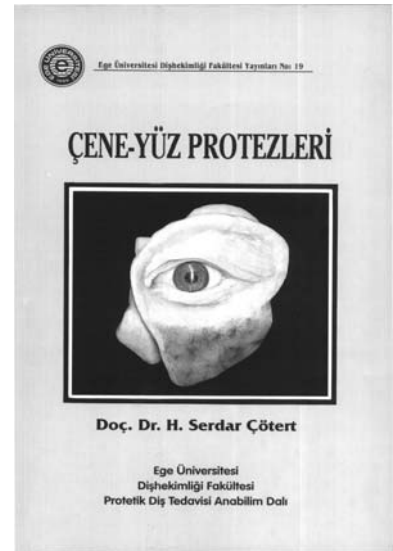


## ÇENE-YÜZ PROTEZLERİ

*Doç. Dr. H. Serdar ÇÖTERT*

(E.Ü. Dişhek. Fak. Protetik Diş Tedavisi A.D.)

- Terminoloji ve temel kavramlar
- Çene-Yüz protezleri uygulamalarının tarihi
- Çene-Yüz bölgesi tümörleri
- Malign sinüs tümörlerinin sağıtımı
- Rezeksiyon obturatörleri
- Dudak damak yarıkları
- Mandibula defektlerinde protetik rehabilitasyon
- Dil rezeksiyonlarında protetik rehabilitasyon
- Yüz protezleri
- Baş-Boyun kanserlerinde radyoterapi ve radyoterapi protezleri



- 149 sayfa
- Siyah-beyaz baskı
- 126 açıklamalı resim ve şekil
- 85 gr. 1. hamur kağıt
- Bristol kapak, renkli
- 16x24 cm boyutlarında

İsteme Adresi: Ege Üniversitesi Dişhekimliği Fakültesi 35100 Bornova-İZMİR

