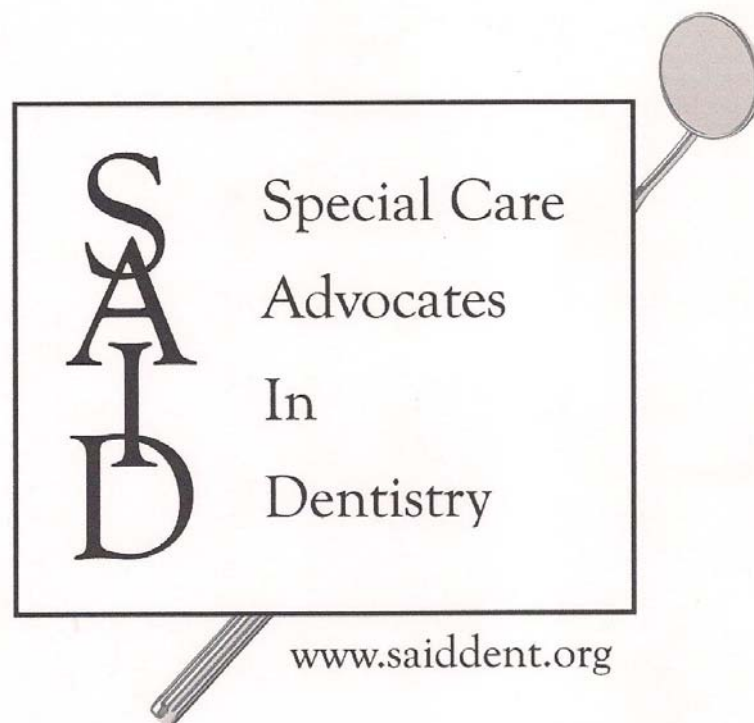


2012 ANNUAL SEMINAR RALEIGH, NORTH CAROLINA

Special Care Advocates in Dentistry 2012 Lit. Review

#

(SAID's Search of Dental Literature Published
in Calendar Year 2011*)



Compiled by:
Dr. Robert G. Henry
Dr. Douglas Veazey

Special Acknowledgement to Ms. Sandy Challman who provided computer support, literature searches, and collecting and compiling the final articles which are seen here. Without her help and support this review would not have been possible.

Recent journal articles related to oral health care for people with mental and physical disabilities.

Search Program = PubMed

Database = Medline

Journal Subset = Dental

Publication Timeframe = Calendar Year 2011*

Language = English

SAID Search-Term Results = 5,065

Initial Selection Result = 525 articles

Final Selection Result = 219 articles

SAID Search-Terms Employed:

- | | |
|------------------------------------|---------------------------------|
| 1. Intellectual disability | 22. Protective devices |
| 2. Mental retardation | 23. Moderate sedation |
| 3. Mental deficiency | 24. Conscious sedation |
| 4. Mental disorders | 25. Analgesia |
| 5. Mental health | 26. Anesthesia |
| 6. Mental illness | 27. Dental anxiety |
| 7. Dental care for disabled | 28. Nitrous oxide |
| 8. Dental care for chronically ill | 29. Gingival hyperplasia |
| 9. Self-mutilation | 30. Gingival hypertrophy |
| 10. Disabled | 31. Glossectomy |
| 11. Behavior management | 32. Sialorrhea |
| 12. Behavior modification | 33. Bruxism |
| 13. Behavior therapy | 34. Deglutition disorders |
| 14. Cognitive therapy | 35. Community dentistry |
| 15. Down syndrome | 36. State dentistry |
| 16. Cerebral palsy | 37. Gagging |
| 17. Epilepsy | 38. Substance abuse |
| 18. Enteral nutrition | 39. Syndromes |
| 19. Physical restraint | 40. Tooth brushing |
| 20. Immobilization | 41. Pharmaceutical preparations |
| 21. Pediatric dentistry | 42. Public health dentistry |

Program: EndNote X3 used to organize search and provide abstract. Copyright 2009 Thomson Reuters, Version X3 for Windows.

**NOTE: The American Dental Association is responsible for entering journal articles into the National Library of Medicine database; however, some articles are not entered in a timely manner. Some articles are entered years after they were published and some are never entered.*

1. **(2011). "Breaking down barriers to oral health for all Americans: the role of workforce." J Calif Dent Assoc 39(7): 491-502.**

This statement from the American Dental Association is the first in a series offering the ADA's vision of a healthier, more productive nation, enabled by breaking down the barriers that impede or entirely prevent millions of Americans from enjoying good oral health. It is included as part of this issue to articulate the ADA's perspective on the national access debate.

2. **(2011). "Protective effect of pit and fissure sealants on demineralization of adjacent enamel." Pediatr Dent 33(7): 491-495.**

PURPOSE: This study's purpose was to evaluate the in vitro effect of sealants in protecting adjacent enamel from acid demineralization. **METHODS:** Occlusal fissures of extracted molars (N=10) were sealed with: conventional nonfluoride (DO; Delton Opaque) resin-based sealant (RBS); fluoride-containing RBS (US; UltraSeal XT plus, and CP; Clinpro); amorphous calcium phosphate-containing RBS (BW; Bosworth Aegis); or glass ionomer sealant (FT; Fuji Triage). The specimens were immersed in lactic acid gel for 20 days to create demineralized lesions on the occlusal enamel. Cross-sectional microhardness was measured at the lesion 0.5 mm from the sealant margin. Mineral loss (DeltaZ, volume % mineral x mum) was calculated from the microhardness values and subjected to analysis of variance and student-Newman-Keuls tests. **RESULTS:** Mineral loss values (mean +/-SD) were: 1,975 +/- 806, 1,802 +/- 512, 1,004 +/- 421, 1,275 +/- 375, and 88 +/- 124 for DO, US, CP, BW, and FT, respectively; DeltaZ for DO and US was significantly higher, and DeltaZ for FT was significantly lower than that for CP and BW (P=.05). **CONCLUSIONS:** Resin-based sealants containing fluoride or amorphous calcium phosphate may provide some protective effect on demineralization of adjacent enamel vs conventional nonfluoride sealant. Glass ionomer sealant was the most effective in protecting adjacent enamel from acid demineralization.

3. **Aas, A. L. and A. B. Skaare (2011). "Management of a 9-year-old boy experiencing severe dental injury--a 21-year follow-up of three autotransplants: a case report." Dent Traumatol 27(6): 468-472.**

The replacement of missing anterior teeth is a particular challenge in children and adolescents. This report describes the management of a 9-year-old boy suffering a severe dental injury. The treatment included three autotransplantations and orthodontic space closure to replace four maxillary teeth. A follow-up period of 21 years demonstrated a successful outcome. Autotransplantation of premolars in growing individuals is a predictable method for replacement of missing teeth and for re-establishment of the alveolar process after traumatic bone loss. This case report shows that a multidisciplinary approach is essential for the management and outcome of severe dental injuries in children.

4. **Abdelrahman, T. E., K. Takahashi, et al. (2011). "Impact of different surgery modalities to correct class III jaw deformities on the pharyngeal airway space." J Craniofac Surg 22(5): 1598-1601.**

OBJECTIVE: The objective of the study was to compare the outcome of different modalities of orthognathic surgery to correct class III jaw deformities concerning the pharyngeal airway space, especially in patients with other predisposing factors for the development of obstructive sleep apnea. **METHODS:** Lateral cephalograms of 30 Japanese patients (12 males and 18 females, 24.4 [SD, 6.8] years), who underwent surgical-orthodontic treatment for class III jaw deformities, were obtained. Patients were divided into 3 groups: Group A included patients who underwent bilateral sagittal split ramus osteotomy; group B patients underwent bimaxillary surgery, and group C patients underwent intraoral vertical ramus osteotomy. Lateral cephalograms were assessed before surgery and around 3 months and 1 year after surgery. The paired t-test was used to compare the groups, and P < 0.05 was considered significant. **RESULTS:** In groups A and C who underwent sagittal split ramus osteotomy and intraoral vertical ramus osteotomy, respectively, the pharyngeal airway was constricted significantly at the 3 levels of the pharyngeal airway space on short- and long-term follow-up, whereas in group B, who underwent bimaxillary surgery, no significant changes were noted on long-term follow-up. **CONCLUSIONS:** Bimaxillary surgery rather than only mandibular setback surgery is preferable to correct class III jaw deformity to prevent narrowing of the pharyngeal airway, which might be a predisposing factor in the development of obstructive sleep apnea syndrome.

5. **Abebe, W., W. Herman, et al. (2011). "Herbal supplement use among adult dental patients in a USA dental school clinic: prevalence, patient demographics, and clinical implications." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 111(3): 320-325.**

OBJECTIVE: This study assessed the frequency and patterns of utilization of herbal supplement products by adult dental patients at a USA dental school clinic. **STUDY DESIGN:** A self-reporting questionnaire was used to collect patient

demographics and frequency of herbal supplement utilization along with other information. The questionnaire was distributed and collected at a dental visit. Herbal utilization was related to patient demographics using descriptive analysis. The clinical implications of the findings are discussed. RESULTS: Out of 1,240 questionnaires, 1,119 were returned as completed. Of these, 12.6% reported using ≥ 1 of 21 herbal products. The majority of the users were middle-aged educated caucasian women. Green tea, garlic, echinacea, ginkgo biloba, and ginseng were the top 5 products used. Mostly, supplements were consumed in combination with drugs. CONCLUSIONS: The type, prevalence, and frequency of herbal supplement utilization by adult dental patients in this USA dental clinic were generally similar to those reported for other population groups. This observation, coupled with the documented effects of the commonly used herbal products, should alert dental health caregivers to inquire about herbal supplement use when evaluating or treating their patients.

6. Abeleira, M. T., J. M. Seoane-Romero, et al. (2011). "A multidisciplinary approach to the treatment of oral manifestations associated with Beckwith-Wiedemann syndrome: a long-term case report." J Am Dent Assoc 142(12): 1357-1364.

BACKGROUND: Beckwith-Wiedemann syndrome (BWS) is a congenital disorder that involves a somatic overgrowth during the patient's first years of life. Exomphalos, macroglossia and gigantism are the main clinical symptoms. CASE DESCRIPTION: The authors describe a 15-year follow-up in a patient with BWS. They focus on a multidisciplinary approach to treating the patient's oral manifestations from age 9 months. The approach included an initial physiotherapy treatment, a partial glossectomy, a first phase of orthopedic treatment with a tongue crib and chin cap, and a second phase of orthodontic treatment with an edgewise appliance. CLINICAL IMPLICATIONS: To obtain long-term positive and stable results, an appropriate treatment plan for patients with BWS and dentoskeletal alterations, including macroglossia, requires surgical tongue reduction when the patient is young, combined with physiotherapeutic phases and orthopedic and orthodontic treatment.

7. Accurso, B. T., B. M. Warner, et al. (2011). "Allelic imbalance in oral lichen planus and assessment of its classification as a premalignant condition." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 112(3): 359-366.

OLP is a relatively common immune-mediated mucosal condition with a predilection for middle-aged women. Although classified as a premalignant condition, this classification remains controversial. Using stringent diagnostic criteria, some authors have found that OLP patients are not at increased risk for oral SCC. Credible but limited genetic evidence also indicates that epithelial tissues from OLP patients diagnosed using stringent criteria differs from premalignant or malignant oral lesions but is similar to epithelium from benign oral lesions. To further investigate this genetic line of evidence, biopsy specimens diagnosed as fibroma, OLP, low-grade dysplasia, high-grade dysplasia, and SCC were retrieved from the archives of the Oral Pathology Consultants at the Ohio State University. Using laser capture microdissection, tissue of interest was captured from each case and DNA subsequently extracted. Fluorescently labeled PCR primers were used to amplify DNA at 3 tumor suppressor gene loci (3p14.2, 9p21, and 17p13) and evaluated for LOH or microsatellite instability (MSI). OLP was found to be significantly different from low-grade dysplasia, high-grade dysplasia, and SCC when LOH/MSI was found at more than 1 loci ($P = .011$, $P = .032$, $P = .003$), but not different from benign fibromas ($P = .395$). In agreement with previous studies, well-documented cases of OLP diagnosed using stringent criteria exhibit a genetic profile more similar to a benign or reactive process than a premalignant/malignant one. These findings do not support the classification of OLP as a premalignant condition.

8. Adolphs, N., B. Kessler, et al. (2011). "Dentoalveolar injury related to general anaesthesia: a 14 years review and a statement from the surgical point of view based on a retrospective analysis of the documentation of a university hospital." Dent Traumatol 27(1): 10-14.

INTRODUCTION: Damage to dentoalveolar structures related to general anaesthesia is a well-known complication and may represent a relevant morbidity for affected patients. Central documentation of perioperative dentoalveolar injuries was performed since 1990 in the Department of Anaesthesiology and Intensive Care Medicine in cooperation with the Department of Oral and Maxillofacial Surgery at the Charite Universitätsmedizin Berlin, Campus Virchow-Klinikum. Documentation of perioperative dentoalveolar injury consisted of anaesthesia charts, reports of the anaesthesiologists and consultant maxillofacial surgeons. MATERIALS AND METHODS: Retrospective analysis of the data from 1990 to 2004 was performed according to this documentation with respect to incidence, matter, distribution of dental injury and therapeutic consequences. RESULTS: Within 14 years 82 'dental injuries' with 103 affected teeth were documented in calculated 375,000 general anaesthesias. Incidence of 0.02% was very constant with an average of 5.5 events/year. Eighty-nine percent of the documented injuries occurred during scheduled operative procedures. Only

32.9% of the injuries took place during endotracheal intubation. In about 50% the injury was not related to intubation or extubation but happened during general anaesthesia. In 80% the dental injury was estimated by the anaesthesiologist as 'not avoidable'. In 83% pre-existing affection or structural injury of intraoral tissues was documented, in 32.7% of the affections sufficient therapy could be provided already during in-hospital stay. CONCLUSION: Perioperative dentoalveolar injury is surely an annoying complication of general anaesthesia. However incidence is rare and seems to be unavoidable. Pre-existing damage to dentoalveolar structures is the main risk for additional injuries related to general anaesthesia. Adequate therapy can be provided by interdisciplinary concepts. There should be a fair balance between the benefit of the surgical procedure and the risk of dental injury related to general anaesthesia. Awareness of the problem and proper documentation are important factors for adequate management in liability cases.

9. Afrin, L. B. (2011). "Burning mouth syndrome and mast cell activation disorder." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 111(4): 465-472.

Burning mouth syndrome (BMS), a chronic diffuse oral pain syndrome affecting approximately 1% of the general population, is diagnosed when explanatory oral pathology and other identifiable causes are absent. BMS has been recognized for decades, but its etiology remains unknown and has not previously been attributed to mast cell disease. Three cases of BMS are reported in which evidence of an underlying mast cell activation disorder (MCAD) was found; all 3 patients' oral pain responded well to MCAD-directed therapy. Mediators released from mast cells have a wide range of local and remote effects and potentially may cause the neuropathic changes and/or inflammation thought to lead to the symptoms of BMS. Mast cell disease either in oral tissue or at sites remote from the mouth should be considered in the differential diagnosis of BMS.

10. Aggarwal, V., M. Singla, et al. (2011). "Comparative evaluation of local infiltration of articaine, articaine plus ketorolac, and dexamethasone on anesthetic efficacy of inferior alveolar nerve block with lidocaine in patients with irreversible pulpitis." *J Endod* 37(4): 445-449.

INTRODUCTION: The inferior alveolar nerve block (IANB) has a poor success rate in patients with irreversible pulpitis. The purpose of this study was to evaluate the effect of ketorolac and dexamethasone infiltration along with standard IANB on the success rate. METHODS: Ninety-four adult volunteers who were actively experiencing pain participated in this prospective, randomized, double-blind study. All patients received standard IANB of 2% lidocaine with 1:200,000 epinephrine. Twenty-four patients did not receive any supplemental infiltrations (control). Twenty-four patients received supplemental buccal infiltration of 4% articaine with 1:100,000 epinephrine, and 24 patients received supplemental buccal infiltration of 1 mL/4 mg of dexamethasone. It was planned to give supplemental buccal infiltration of 1 mL/30 mg of ketorolac tromethamine in 26 patients, but the first 2 patients experienced severe injection pain after ketorolac infiltration and were excluded from the study. In the subsequent patients, 0.9 mL of 4% articaine was infiltrated before injecting ketorolac. Endodontic access preparation was initiated after 15 minutes of initial IANB. Pain during treatment was recorded by using a Heft-Parker visual analog scale. Success was recorded as none or mild pain. RESULTS: Statistical analysis was done by using nonparametric chi(2) tests. Control IANB gave 39% success rate. Buccal infiltration of articaine and articaine plus ketorolac significantly increased the success rate to 54% and 62%, respectively (P < .05). Supplementary dexamethasone infiltration gave 45% success rate, which was insignificant with control IANB. CONCLUSIONS: Articaine and ketorolac infiltration can increase the success rate of IANB in patients with irreversible pulpitis. None of the tested techniques gave 100% success rate.

11. Agrawal, N., K. Agrawal, et al. (2011). "An uncommon presentation of an inflammatory gingival enlargement--responding to non-surgical periodontal therapy." *Int J Dent Hyg* 9(4): 303-307.

BACKGROUND: The various clinical manifestations of inflammatory gingival enlargement reported are more or less similar regardless of the underlying aetiological factors. Unusual presentation and unknown aetiology pose a diagnostic challenge for a periodontist. METHODS: A 34-year-old Indian woman presented with the complaint of gum swelling that was sessile, lobulated, soft in consistency and bluish red in colour with ulcerated surface in some region, which was covered by the necrotic slough. This type of enlargement was unusual and some underlying systemic pathology was suspected. But a written consultation from her physician confirmed her systemic health, which was based on clinical, radiological and haematological investigations. Histopathological examination confirmed the diagnosis of inflammatory gingival enlargement. Patient was treated with oral hygiene instructions, scaling and root planning. RESULT: Within a month of conventional periodontal therapy, gum enlargement reduced markedly and patient was put on oral hygiene maintenance programme. CONCLUSION: Periodontal therapy is diagnosis-driven and, to the extent possible, should address all the possible factors that impact development and progression of diseases that may affect

periodontal tissue. In plaque-induced periodontal diseases, non-surgical periodontal therapy is still a gold standard among all the therapies available.

12. Aguado-Gil, J. M., C. Barona-Dorado, et al. (2011). "Ocular complications following dental local anesthesia." *Med Oral Patol Oral Cir Bucal* 16(5): e688-693.

OBJECTIVE: To determine the frequency of appearance and the factors most commonly associated with ocular complications following dental local anesthesia, also establishing the location and type of anesthesia used. **STUDY DESIGN:** An indexed search in the Pubmed and Compludoc databases was carried out with the keywords "oral anesthesia", "ocular", "ophthalmologic", "damage", "complications", "injection". We established a limitation that the literature had to have been published after the year 1970. A total of 19 articles were obtained, forming a total sample of 37 patients. The patient's sex, age, nerve anesthetized, type of anesthetic used, ophthalmological complication present, recovery time, treatment and side effects were analyzed. **RESULTS:** There is a higher involvement of females (77%). The average age was 34.2 years. There was no preference for an anesthetic technique. Diplopia was the most common complication (65%), which coincides with the data from other authors. Almost all of the complications were of a temporary nature, with an average recovery time of 68 minutes. **CONCLUSIONS:** This is one of the few studies of its kind in dental literature, it thus being difficult to make precise conclusions. Ophthalmological complications are seldom a problem, diplopia being the most common among them. The authors appear to indicate an intravascular injection of the anesthetic as the cause of the problem, and therefore, it should be avoided in order to prevent accidents at the ocular level.

13. Ahrens, A., C. McGrath, et al. (2011). "A systematic review of the efficacy of oral appliance design in the management of obstructive sleep apnoea." *Eur J Orthod* 33(3): 318-324.

Oral appliances (OAs) are increasingly advocated as a treatment option for obstructive sleep apnoea (OSA). However, it is unclear how their different design features influence treatment efficacy. The aim of this research was to systematically review the evidence on the efficacy of different OAs on polysomnographic indices of OSA. A MeSH and text word search were developed for Medline, Embase, Cinahl, and the Cochrane library. The initial search identified 1475 references, of which 116 related to studies comparing OAs with control appliances. Among those, 14 were randomized controlled trials (RCTs), which formed the basis of this review. The type of OA investigated in these trials was mandibular advancement devices (MADs), which were compared with either inactive appliances (six studies) or other types of MADs with different design features. Compared with inactive appliances, all MADs improved polysomnographic indices, suggesting that mandibular advancement is a crucial design feature of OA therapy for OSA. The evidence shows that there is no one MAD design that most effectively improves polysomnographic indices, but that efficacy depends on a number of factors including severity of OSA, materials and method of fabrication, type of MAD (monobloc/twin block), and the degree of protrusion (sagittal and vertical). These findings highlight the absence of a universal definition of treatment success. Future trials of MAD designs need to be assessed according to agreed success criteria in order to guide clinical practice as to which design of OAs may be the most effective in the treatment of OSA.

14. Akhter, R., M. Morita, et al. (2011). "Development of temporomandibular disorder symptoms: a 3-year cohort study of university students." *J Oral Rehabil* 38(6): 395-403.

The aims of this study were to examine the incidence of temporomandibular disorders (TMDs) over a 3-year period and to evaluate the risk of self-reported TMDs among university students in Japan. The study population comprised 2374 university students examined at the start of their undergraduate course and 492 students re-examined after 3 years using questionnaires on symptoms of TMD and experiences of jaw injury, stress, orthodontic treatment and parafunctional habits. Cumulative incidence (%) and relative risks were calculated overall. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to determine the degree of risks of these variables for symptoms of TMDs using logistic regression. Results of logistic regression analysis showed that male subjects with experience of jaw injury had a 3.54 (CI=1.45-8.68, P<0.01)-fold higher risk of temporomandibular joint (TMJ) pain than that for those who did not. Female subjects who reported experiencing stress and bruxism had 10.56 (CI=1.28-87.54, P<0.05)- and 5.00 (CI=1.21-20.71, P<0.05)-fold higher risks of TMJ sound, respectively, than the risk for female subjects who had not experienced stress or bruxism. The results indicated that experiences of jaw injury, stress and bruxism were significantly associated with increased risks of development of TMJ disorders in a 3-year cohort.

15. Ali, D. and C. Kunzel (2011). "Diabetes mellitus: update and relevance for dentistry." *Dent Today* 30(12): 45-46, 48-50; quiz 51.

In light of growing evidence of the association between oral and nonoral diseases, some investigators believe that oral disease is a clinically useful predictor of nonoral conditions in certain individuals. As the dental profession has become more involved in treating medically compromised patients, dentistry has gone from being an "oral health profession" to being part of the general health team. As a result, a partnership between dentists and physicians that involves an expanded notion of oral-medical communication during the course of treating such patients should be embraced in order to better serve these patients. Michael Glick, senior editor of the Journal of the American Dental Association, believes that oral health providers should take an active role in screening certain groups for common medical conditions, ie, to check the patient's blood pressure, plasma glucose, and cholesterol for indications of heart disease and DM. Furthermore, dentists can be part of the diabetic patient's support network by becoming actively involved in monitoring blood glucose levels and blood pressure, as well as reminding patients of the importance of having their regular medical exams. Dentists are not going to diagnose or treat a systemic disease, but early detection will certainly result in better medical and dental outcomes. It is the dentist's role to be a part of the healthcare team in order to help reduce the incidence and adverse impact of diabetes.

16. Alkilzy, M., C. Berndt, et al. (2011). "Sealing proximal surfaces with polyurethane tape: three-year evaluation." Clin Oral Investig 15(6): 879-884.

The purpose of this investigation was to test the safety and clinical effect of a new material for the treatment of proximal caries. In 50 patients with two proximal initial lesions, one of the lesions was randomly chosen and sealed with a thin polyurethane-dimethacrylate foil using bonding. The other lesion received oral home care and was left as the control. In clinical follow-ups after 6 and 12 months and X-ray evaluation after 2 and 3 years, the sealants showed good retention, marginal adaptation, and color. No relevant significant differences in plaque accumulation or gingival status were found between sealed and control teeth. On the radiographs, almost all sealed and control lesions appeared stable, indicating an arrest of the lesion. In conclusion, sealing initial proximal lesions showed no clinical problems and mostly arrest of caries on bitewing radiographs.

17. Alm, A., H. Isaksson, et al. (2011). "BMI status in Swedish children and young adults in relation to caries prevalence." Swed Dent J 35(1): 1-8.

Overweight and obesity are increasing as health problems at global level. Dental caries and obesity are both multifactorial diseases and are associated with dietary habits. The aim of the present study was to investigate the relationship between body weight status and caries prevalence in an unselected population followed from pre-school years to young adulthood. The present investigation was designed as a longitudinal analysis of the association between overweight/obesity and dental caries in one population at 3, 6, 15 and 20 years of age. The result shows that adolescents (15 years) and young adults (20 years) who are overweight/obese had a statistically significantly higher caries prevalence than normal-weight young people. At 6 years of age, the odds (OR) of having caries among obese children are 2.5 times higher than the odds for caries among six-year-old children of normal weight ($p = 0.04$). At 3 years of age, no association between overweight/obesity and caries was found. To conclude, overweight and obese adolescents and young adults had more caries than normal-weight individuals. The present study emphasises the need for multidisciplinary approaches to change the lifestyle factors causing both overweight/obesity and dental caries.

18. Alman, A. C., L. R. Johnson, et al. (2011). "Loss of alveolar bone due to periodontal disease exhibits a threshold on the association with coronary heart disease." J Periodontol 82(9): 1304-1313.

BACKGROUND: A number of epidemiologic studies were published that looked at the association between coronary heart disease (CHD) and periodontal disease. However, debate exists about whether this association is a true relationship or simply an example of an uncontrolled confounder. This retrospective cohort study examines the relationship between periodontal disease and CHD. **METHODS:** Digital panoramic radiographs were used to assess alveolar bone loss (ABL) using a Schei ruler. Participants consisted of Veterans Administration (VA) patients who were eligible for dental benefits and had a digital panoramic radiograph taken at the VA Medical Center, Denver, Colorado. Information on CHD and other important clinical variables were obtained from electronic medical records. **RESULTS:** The examination of the relationship between ABL and CHD revealed a significant non-linear relationship with a threshold at approximately 20% bone loss with a doubling of the probability ratios of CHD compared to those at 7.5% bone loss. **CONCLUSIONS:** To our knowledge, this is the first study to demonstrate a non-linear relationship between ABL and CHD. A significant positive association between ABL and CHD was found at even low levels of bone loss between 10% and 20%.

19. Almeida e Silva, J. S., L. N. Baratieri, et al. (2011). "Dental erosion: understanding this pervasive condition." J Esthet Restor Dent 23(4): 205-216.

Dental erosion is a contemporary disease, mostly because of the change of the eating patterns that currently exist in society. It is a "silent" and multifactorial disease, and is highly influenced by habits and lifestyles. The prevalence of dental erosion has considerably increased, with this condition currently standing as a great challenge for the clinician, regarding the diagnosis, identification of the etiological factors, prevention, and execution of an adequate treatment. This article presents a dental erosion review and a case report of a restorative treatment of dental erosion lesions using a combination of bonded ceramic overlays to reestablish vertical dimension and composite resin to restore the worn palatal and incisal surfaces of the anterior upper teeth. Adequate function and esthetics can be achieved with this approach.

20. Al-Quran, F. A., R. F. Al-Ghalayini, et al. (2011). "Single-tooth replacement: factors affecting different prosthetic treatment modalities." BMC Oral Health 11: 34.

BACKGROUND: The choice between several treatment options for replacing a single missing tooth is influenced by clinical, dentist- and patient-immanent factors. This study aimed to determine the patient factors that would affect the treatment decision to replace a single missing tooth and to assess the satisfaction with several options. **METHOD:** 200 volunteers involved (121 females and 79 males) divided into four groups, Group A: consisted of patients with conventional fixed partial dentures or patients with resin bonded fixed partial dentures. Group B: consisted of patients who received removable partial dentures while Group C: consisted of patients who received a single implant supported crown, and a control group D: consisted of patients who received no treatment. Data were collected using a questionnaire. **RESULTS:** The highest percentage of males within groups (58%) was within the removable prostheses category. The majority of the subjects in the study reported that the main reason for replacing a missing tooth was for esthetic and function. Most important factor affecting the choice between treatment modalities was damaging the neighboring teeth. Pain, post operative sensitivity and dental phobia were important factors in choosing the prosthesis type and affected the control group patients not to have any treatment. The highest satisfaction percentage among groups studied was recorded for dental implants then FPD groups, while the least percentage were in both the control and RPD groups, for all aspects of function, esthetic and speech efficiency. **CONCLUSIONS:** The final choice between FPD, RPD and implant depended on several factors which affected the decision making; among these is cost and patients' awareness of the different treatment options.

21. Al-Sukhun, J. and H. Penttila (2011). "The cyclooxygenase-2 inhibitor celecoxib and alveolar osteitis." J Ir Dent Assoc 57(1): 50-53.

PURPOSE OF THE STUDY: The purpose of this study was to report our clinical experience, in a pilot study, of the use of the selective cyclooxygenase-2 (COX-2) inhibitor celecoxib, pre-emptively, to control pain in patients after surgical extraction of a mandibular molar tooth. **PATIENT AND METHODS:** This randomised, double-blind, placebo-controlled, prospective clinical trial was conducted over an eight-month period. Participants were randomly allocated to receive a standard oral dose of 200 mg celecoxib, 400 mg ibuprofen, or a placebo containing lactose, pre-emptively, one hour before surgery. Each patient was prescribed amoxycillin 500 mg three times per day postoperatively for seven days. The participants were given standardised participant information sheets, and written informed consent was subsequently obtained from the participants prior to the commencement of the study. **RESULTS:** The results showed that 13% of the patients who had ibuprofen had severe pain two to three days postoperatively. This was diagnosed as alveolar osteitis, which is in line with the universally accepted outcome for the surgical extraction of mandibular molar teeth. Statistical analysis (Chi-square test) confirmed that the ibuprofen group had a significantly higher alveolar osteitis incidence than the celecoxib group ($p < \text{or} = 0.05$) and the placebo group ($p < \text{or} = 0.05$). **CONCLUSION:** This is the first reported study to demonstrate that the use of celecoxib resulted in a significant decrease in the occurrence of alveolar osteitis.

22. Aminabadi, N. A., L. Erfanparast, et al. (2011). "The impact of emotional intelligence and intelligence quotient (IQ) on child anxiety and behavior in the dental setting." Acta Odontol Scand 69(5): 292-298.

OBJECTIVE: The aim of this study was to evaluate the impact of IQ and EQ on child's anxiety and behavior in the dental setting. **MATERIALS AND METHODS:** One hundred and seven children (age range 7-12 years) were selected. BarOn Emotional Quotient Inventory: Youth Version (Baron EQ-I: YV) and the Raven's Colored Progressive Matrices (RCPM) tests were administered on the first examination session. Children's anxiety and behavior were evaluated using the modified child dental anxiety scale (MCDAS) and the sound, eye and motor (SEM) scales, respectively, during the second session. **RESULTS:** The mean (SD) age of subjects was 8.48 (1.41) years old. The result revealed a significant

negative correlation between children's behavior and total EQ score ($p < 0.01$) but there was no relationship found between children's behavior and IQ score. A significant positive correlation was found between anxiety scores on MCDAS and SEM ($p < 0.01$), but no relationship was found between EQ and MCDAS scores. Both anxiety ($p < 0.01$) and EQ score ($p < 0.01$) were effective variables in predicting the child's SEM score. CONCLUSION: The major finding of this research suggested that a high EQ may be more effective than a low EQ in moderating the level of cooperation during dental treatment of children. IQ scores, on the other hand, were related to the child's EQ score ($r = 0.20$) and age ($r = -0.29$).

23. Amos, K., S. C. Yeoh, et al. (2011). "Combined topical and systemic clonazepam therapy for the management of burning mouth syndrome: a retrospective pilot study." J Orofac Pain 25(2): 125-130.

AIMS: To evaluate retrospectively the efficacy of administering an anticonvulsant medication, clonazepam, by dissolving tablets slowly orally before swallowing, for the management of burning mouth syndrome (BMS). METHODS: A retrospective clinical records audit was performed of patients diagnosed with BMS between January 2006 and June 2009. Patients were prescribed 0.5 mg clonazepam three times daily, and changes were made to this regimen based on their individual response. Patients were asked to dissolve the tablet orally before swallowing and were reviewed over a 6-month period. Pain was assessed by patients on an 11-point numerical scale (0 to 10). A nonparametric (Spearman) two-tailed correlation matrix and a two-tailed Mann-Whitney test were performed. RESULTS: A total of 36 patients (27 women, 9 men) met the criteria for inclusion. The mean (+/- SEM) pain score reduction between pretreatment and final appointment was 4.7 +/- 0.4 points. A large percentage (80%) of patients obtained more than a 50% reduction in pain over the treatment period. One patient reported no reduction in pain symptoms, and one third of the patients had complete pain resolution. Approximately one third of patients experienced side effects that were transient and mild. CONCLUSION: This pilot study provides preliminary evidence that the novel protocol of combined topical and systemic clonazepam administration provides an effective BMS management tool.

24. Arcuri, F., M. Brucoli, et al. (2011). "Maxillomandibular advancement in obstructive sleep apnea syndrome: a surgical model to investigate reverse face lift." J Craniofac Surg 22(6): 2148-2152.

BACKGROUND: The aging process is characterized by multiple signs affecting the upper, the middle, and the lower third of the face; conventionally, face-lift procedures and structural fat grafting are performed to create a younger face. During the life, craniofacial skeleton atrophies, leading to a reduction of the facial height and depth, while increasing the facial width. Maxillomandibular advancement (MMA) by orthognathic surgery restores the lost space dimension, projecting the cheeks, the mouth, and the nose. The aim of this study was to analyze the morphologic change of the face after MMA in patients with obstructive sleep apnea syndrome, focusing on the previously mentioned stigmata of the middle and the lower third of the aging face. METHODS: The records of 16 patients who underwent MMA for obstructive sleep apnea syndrome between January 2005 and December 2008 in the Unit of Maxillofacial Surgery at the Novara Major Hospital were included in this study. We explained to the patients the stigmata of a standard aging face, and we asked them to evaluate each sign affecting the middle and the lower third of their preoperative condition. One positive point was given for the presence of each sign reported by the patients. At 2 years after surgery, we asked the patients to evaluate the previously mentioned aging signs of their postoperative face. Again, 1 positive point was given for the presence of each sign reported by the patients. RESULTS: Although we did not perform statistical evaluation, 13 patients showed a degree of rejuvenation after MMA (the score of the postoperative face is less than the score of the preoperative face). Three patients reported no postoperative change; none reported a more aging face, with a successful "reverse face-lift" occurred in 81% of our cases. CONCLUSIONS: Simultaneous maxillary and mandibular advancements change the skeletal framework of the face, improving soft-tissue support and resulting in rejuvenation of the middle and the lower third of the face. This condition is demonstrated by the results of our study in that all patients appeared postoperatively more youthful from a self-evaluation.

25. Armfield, J. M. and P. Milgrom (2011). "A clinician guide to patients afraid of dental injections and numbness." SAAD Dig 27: 33-39.

Fears of dental injections remain a clinical problem often requiring cognitive behavioural psychology counselling and sedation in order to carry out needed dental treatment. This study, based on a national survey in Australia, compared patient concerns about numbness caused by local anaesthesia and fears of the injection itself. It also examined associations between dental fearfulness and avoidance associated with patient self-reported negative experiences and treatment need. Clinical advice on how to approach such patients is offered. Relatively high levels of dental anxiety and fear have been reported in several industrialised Western societies (McGrath & Bedi, 2004; Armfield, Spencer & Stewart, 2006; Lahti et al., 2007; Enkling, Marwinski Jöhren, 2006). In the U.K., almost one in three adults consider

themselves to always be anxious about going to the dentist (Nuttall et al., 2001). Of concern is that this dental fear may be passed on to the children of anxious adults (Nuttall, Gilbert & Morris, 2008), leading to an inter-generational perpetuation of the problem. There is considerable evidence that dental fear is related to poorer oral health, reduced dental attendance and increased treatment stress for the attending dentist. There are many aspects of going to a dentist that might elicit feelings of apprehension, concern or anxiety in prospective patients (Liddell & Gosse, 1998; Oosterink, de Jongh & Aartman, 2008). One of the most commonly reported concerns relates to receiving injections. Indeed, fear of needles and the treatment of injection fear has been an important focus of a research in the U.K. (Boyle, Newton & Milgrom, 2010). Needle fear, in particular, is a major issue given that the delivery of local anaesthesia via injection is the central plank of pain relief techniques in dentistry (Malamed, 2009) and dentists as well as patients often avoid difficult injections as a consequence, resulting in poor pain control. A less well described anxiety of receiving dental treatment is fear of numbness associated with the dental injection (Morse & Cohen, 1983). Certainly, many dentists believe that their patients avoid local anaesthesia because of a wish to avoid the disturbing effects of numbness (Moore et al., 1998). Milgrom et al. (1997) found that fears about the numbness associated with receiving local anaesthesia significantly differentiated avoiders and non-avoiders of dental treatment. However, these concerns appeared to be much less common than those concerning the perceived pain of injections and fear of bodily injury resulting from the injection (Milgrom et al., 1997; Kaako et al., 1998). Consistent with these findings, whereas 43% of English patients asked to imagine undergoing future third molar surgery expressed concerns primarily about pain, only 6% of patients indicated concern about numbness as their worst fear (Earl, 1994). More recently, a study of Dutch people found that the feeling of numbness from the anaesthesia was rated as the 41st most feared dental stimulus out of a list of 67 possible stimuli, and that only 1.5% of the general population regarded numbness as extremely anxiety provoking (Oosterink, de Jongh & Aartman, 2008). However, it is important for a clinician to differentiate between those who dislike the sensation of temporary numbness versus those who may worry that it may never wear off. Such problem thinking can be an issue irrespective of whether a patient overcomes the fear of needles with sedation or not. A large number of patients dislike the sensation of numbness enough for manufacturers to respond with a partial antidote in alpha adrenergic receptor antagonist phentolamine mesylate (OraVerse Sanofi-Aventis, Hersh & Lindemeyer, 2010). Approval of this agent, which shortens the length of soft tissue anaesthesia after inferior alveolar block, is pending in the UK and other European countries. In other cases, dentists resort to using local anaesthetics without vasoconstrictors to shorten the period of anaesthesia (Fiset, Getz, Milgrom & Weinstein, 1989). While the association between dental fear and fear of injections has received considerable attention, the relationship between dental fear and numbness has received less attention. In particular, the nature of the associations between dental fear and avoidance and anxiety over numbness has not been studied. There has also been no research into whether or not concerns over numbness are independent of injection concerns. Finally, the association between fear of numbness and injections and dental avoidance and treatment needs has not been investigated. This study, based on survey work in Australia, aimed to compare patient concerns about numbness caused by receiving anaesthesia to that of anxiety over the receipt of needles and injections. Associations with dental fear and avoidance as well as negative experiences and treatment needs were also explored.

26. Aspriello, S. D., A. Zizzi, et al. (2011). "Diabetes mellitus-associated periodontitis: differences between type 1 and type 2 diabetes mellitus." J Periodont Res 46(2): 164-169.

BACKGROUND AND OBJECTIVE: Although many studies have appeared about diabetes mellitus-associated periodontitis, few have compared periodontitis inflammatory markers between type 1 (T1DM) and type 2 diabetes mellitus (T2DM), and information regarding this issue is scarce and contradictory. We evaluated the levels of plasma C-reactive protein and of interleukin-1beta (IL-1beta), interleukin-6 (IL-6) and tumour necrosis factor-alpha (TNF-alpha) in gingival crevicular fluid in two groups of subjects affected by T1DM and T2DM, in order to identify possible differences between the two classes in the inflammatory mechanisms of diabetes mellitus-associated periodontitis. **MATERIAL AND METHODS:** Plasma C-reactive protein and gingival crevicular fluid IL-1beta, IL-6 and TNF-alpha were measured in periodontitis patients affected by type 1 (P-T1DM, n = 24) and type 2 diabetes mellitus (P-T2DM, n = 24). **RESULTS:** Gingival crevicular fluid levels of IL-1beta and TNF-alpha in P-T1DM subjects were significantly higher than in P-T2DM subjects. In P-T1DM subjects, we found significant negative correlations between the duration of diabetes mellitus and IL-1beta and between the duration of diabetes mellitus and TNF-alpha. **CONCLUSION:** This study shows that IL-1beta and TNF-alpha levels in periodontitis patients with T1DM are affected by the duration of diabetes mellitus.

27. Augello, M., J. von Jackowski, et al. (2011). "Needle breakage during local anesthesia in the oral cavity--a retrospective of the last 50 years with guidelines for treatment and prevention." Clin Oral Investig 15(1): 3-8.

Needle breakage in the oral cavity after local anesthesia is a common complication with possible serious complications of injuring vital structures. There are different possible reasons for needle breakage, with a main focus on preventable mistakes in treatment. In this study, an analysis of literature of the last 50 years as well as own cases has been performed to renew knowledge and prevention and therapy strategies for this serious complication. A systematic, multilingual review of medical literature from 1900 until today was conducted and information was evaluated systematically. In the majority of cases needle fracture happened during inferior alveolar nerve block. It is mainly a problem due to inadequate technique or the use of too thin needles for the performance of inferior alveolar nerve block. Different arguments about possible therapy strategies and methods exist. Basically, if a hypodermic needle fractures, it should be removed surgically under general anesthesia. To localize the fragment, use of either multi-plane X-rays or fluoroscopy with at least two reference needles in place or, if possible, of three-dimensional CT scans is recommended. This article shows, that despite progression in material, needle fracture is still an existing, preventable problem, if some basic rules are followed.

28. Awadalla, H. I., M. H. Ragab, et al. (2011). "A pilot study of the role of green tea use on oral health." *Int J Dent Hyg* 9(2): 110-116.

INTRODUCTION: An increasing number of people all around the world are turning to the nature by using the natural herbal products in both prophylaxes and treatment of different diseases. Green tea with active chemical ingredients posses diverse pharmacological properties that include anti-inflammatory, anticariogenic, antioxidant and antibacterial effects. **AIMS:** To assess the possible protective properties of green tea on oral health. **METHODS:** The researchers used the following measurements: Streptococcus mutans count in saliva and plaque, Salivary and plaque pH values, Gingival Bleeding Index (GBI). The above-mentioned measurements were applied to a sample consists of 25 subjects before and after rinsing with green tea for 5 min (short-term study). While, S. mutans count for saliva and plaque and GBI measurements, this experimental intervention study was carried out in the El-Azhar University dental clinic. **RESULTS:** The results of this study showed that there was a statistically significant difference among subjects pre- and post-rinsing with 2% green tea for 5 min concerning S. mutans count in saliva and plaque, salivary and plaque pH values and GBI. **CONCLUSION:** This study supports the effectiveness of local application of green tea as antibacterial and anticariogenic material as it decreases the acidity of the saliva and plaque, so it is a cost-effective caries prevention measures especially in developing countries.

29. Ay, S., D. Kucuk, et al. (2011). "Distribution and absorption of local anesthetics in inferior alveolar nerve block: evaluation by magnetic resonance imaging." *J Oral Maxillofac Surg* 69(11): 2722-2730.

PURPOSE: The aim of this study was to evaluate the distribution and absorption of local anesthetic solutions in inferior alveolar nerve block using magnetic resonance imaging. **MATERIALS AND METHODS:** Forty healthy volunteers were divided into 4 groups and injected with 1.5 mL for inferior alveolar nerve block and 0.3 mL for lingual nerve block. The solutions used for the different groups were 2% lidocaine, 2% lidocaine with 0.125 mg/mL epinephrine, 4% articaine with 0.006 mg/mL epinephrine, and 4% articaine with 0.012 mg/mL epinephrine. All subjects had axial T2-weighted and fat-suppressed images at 0, 60, and 120 minutes after injection. The localization, area, and intensity (signal characteristics) of the solutions were analyzed and onset and duration times of the anesthesia were recorded. **RESULTS:** There were no significant differences between groups with regard to the intensity and area of the solutions at 0, 60, and 120 minutes after injection, but differences were found within each group. **CONCLUSIONS:** No between-group differences were found on magnetic resonance imaging in the distribution and absorption of lidocaine with or without epinephrine and articaine with 0.006 and 0.012 mg/mL epinephrine. All solutions were noticeably absorbed at 120 minutes after injection.

30. Baccaglini, L., R. V. Lalla, et al. (2011). "Urban legends: recurrent aphthous stomatitis." *Oral Dis* 17(8): 755-770.

Recurrent aphthous stomatitis (RAS) is the most common idiopathic intraoral ulcerative disease in the USA. Aphthae typically occur in apparently healthy individuals, although an association with certain systemic diseases has been reported. Despite the unclear etiopathogenesis, new drug trials are continuously conducted in an attempt to reduce pain and dysfunction. We investigated four controversial topics: (1) Is complex aphthosis a mild form of Behcet's disease (BD)? (2) Is periodic fever, aphthous stomatitis, pharyngitis, and adenitis (PFAPA) syndrome a distinct medical entity? (3) Is RAS associated with other systemic diseases [e.g., celiac disease (CD) and B12 deficiency]? (4) Are there any new RAS treatments? Results from extensive literature searches, including a systematic review of RAS trials, suggested the following: (1) Complex aphthosis is not a mild form of BD in North America or Western Europe; (2) Diagnostic criteria for PFAPA have low specificity and the characteristics of the oral ulcers warrant further studies; (3)

Oral ulcers may be associated with CD; however, these ulcers may not be RAS; RAS is rarely associated with B12 deficiency; nevertheless, B12 treatment may be beneficial, via mechanisms that warrant further study; (4) Thirty-three controlled trials published in the past 6 years reported some effectiveness, although potential for bias was high.

31. Badami, V. and S. K. Reddy (2011). "Treatment of complicated crown-root fracture in a single visit by means of rebonding." J Am Dent Assoc 142(6): 646-650.

BACKGROUND: Crown-root fractures of anterior teeth are relatively common but often time consuming and difficult to treat. In some cases, the clinician can complete the treatment in a single visit by reattaching the fractured fragment.

CASE DESCRIPTION: In this case report, the authors describe the treatment of a complicated crown-root fracture of the maxillary right central and lateral incisors. Among the treatment options for such cases, the treating clinician considered a single-visit rebonding procedure to be the best choice. The treatment consisted of a multidisciplinary approach involving coronal fragment removal, gingivectomy to expose the margins and single-visit endodontic therapy, followed by a rebonding of the fractured fragment by means of prefabricated posts. RESULTS: Evaluation at 12 months indicated stable re-attachment of the fragments, good esthetics and good periodontal health. CLINICAL IMPLICATIONS: The reattachment of a tooth fragment is a viable, conservative technique that restores function and esthetics, and clinicians should consider it when treating patients with coronal fractures of the anterior teeth.

32. Bahetwar, S. K., R. K. Pandey, et al. (2011). "A comparative evaluation of intranasal midazolam, ketamine and their combination for sedation of young uncooperative pediatric dental patients: a triple blind randomized crossover trial." J Clin Pediatr Dent 35(4): 415-420.

OBJECTIVE: The purpose of this study was to evaluate and compare the efficacy and safety of intranasal (IN) administration of midazolam (M), ketamine (K) and their combination (MK) to produce moderate sedation in young, uncooperative pediatric dental patients. STUDY DESIGN: In this three stage crossover trial forty five uncooperative ASA type-1 children, who required dental treatment, were randomly assigned to receive one of the three drugs/combination by IN route during three subsequent visits. The efficacy and safety of the agents were assessed by overall success rate and by monitoring of vital signs, respectively. RESULTS: The onset of sedation was rapid with K as compared to M and MK. The difference was statistically significant ($P < 0.01$) between K and M. The overall success rate was 89% with K, MK was 84% and 69% with M. The difference between the overall success rates of K and M was statistically significant ($P < 0.01$). Vital signs were within physiological limits and there were no significant adverse effects with any medication. CONCLUSIONS: M, K and MK are safe and effective by IN route to produce moderate sedation for providing dental care to pediatric dental patients who have been otherwise indicated for treatment under general anesthesia.

33. Bailit, H. L. and T. L. McGowan (2011). "Senior dental students' impact on dental school clinic revenues: the effect of community-based dental education." J Dent Educ 75(10 Suppl): S8-13.

Junior and senior dental students generate a significant portion of dental school clinical revenues. Some deans and faculty members are concerned that school clinic income declines when students spend substantial time in community clinics on extramural rotations. This study uses data from eight dental schools to examine the difference in senior clinic operating revenues and expenses between schools with extensive community-based dental education programs and those with limited community-based dental education programs. The analysis shows that schools with extensive programs have substantially lower per senior student clinic losses. This is due to having fewer chairs per student and having a larger class size, thus generating more tuition revenues. The economic advantages of community-based dental education programs for their schools are substantial.

34. Bakland, L. K. and J. O. Andreasen (2012). "Will mineral trioxide aggregate replace calcium hydroxide in treating pulpal and periodontal healing complications subsequent to dental trauma? A review." Dent Traumatol 28(1): 25-32.

Mineral trioxide aggregate (MTA) has over the last two decades begun to take the place of calcium hydroxide (CH) in the treatment of a variety of pulpal and periodontal healing complications following dental trauma. These conditions include teeth with: (i) exposed pulps, (ii) immature roots and pulp necrosis, (iii) root fractures and pulp necrosis located in the coronal part of the pulps, and (iv) external infection-related (inflammatory) root resorption. The main reasons for replacing CH with MTA in these situations have generally been the delayed effect when using CH to induce hard tissues, the quality of such induced hard tissues, and finally the dentin weakening effect of CH, which in some instances lead to cervical root fractures in immature teeth. MTA appears, from a relatively few clinical studies, to overcome these

shortcomings of CH. The lack of long-term clinical studies, however, may warrant a certain reservation in an unrestricted replacement of CH with MTA. A definite need for randomized clinical studies comparing CH and MTA in trauma healing situations is urgently needed.

35. Baltacioglu, E., M. Aslan, et al. (2011). "Analysis of clinical results of systemic antimicrobials combined with nonsurgical periodontal treatment for generalized aggressive periodontitis: a pilot study." J Can Dent Assoc 77: b97.

OBJECTIVE: To assess the clinical benefit of either metronidazole and amoxicillin or doxycycline administered immediately after completion of full-mouth scaling and root planing (FRP) for treatment of generalized aggressive periodontitis. **METHODS:** Patients, 18 to 40 years of age, referred to the Karadeniz Technical University department of periodontology between January 2009 and September 2009 were randomly chosen for inclusion in the study if radiographic examination showed they had ≥ 20 teeth, clinical attachment loss and a probing pocket depth (PPD) ≥ 6 mm at 2 sites in ≥ 12 teeth, ≥ 3 of which were not first molars or incisors. Patients were divided into 3 groups and received FRP alone, FRP combined with metronidazole and amoxicillin, or FRP combined with doxycycline. PPD, clinical attachment level, gingival index, gingival bleeding index and plaque index values were measured at baseline and 2 months after treatment. **RESULTS:** Thirty-eight patients with untreated generalized aggressive periodontitis participated in the study. In all 3 groups, the periodontal index values 2 months after treatment were significantly lower than baseline values ($p < 0.05$). Values for PPD and clinical attachment level were more improved in the antibiotic groups than in the FRP group, and more improved in the metronidazole and amoxicillin group than in the doxycycline group ($p < 0.05$). However, no statistically significant intergroup difference was observed in the other clinical parameters ($p > 0.05$). Systemic use of metronidazole and amoxicillin or doxycycline was clinically superior to FRP for reducing PPDs ≥ 7 mm ($p < 0.05$). **CONCLUSION:** Treatment of generalized aggressive periodontitis with FRP alone or FRP combined with systemic antibiotics provided significant clinical benefits that reduced the need for periodontal surgery. Both antibiotic treatments had additional clinical benefits over those of FRP alone.

36. Bamise, C. T. and T. A. Esan (2011). "Mechanisms and treatment approaches of dentine hypersensitivity: a literature review." Oral Health Prev Dent 9(4): 353-367.

PURPOSE: To review major mechanisms of dentine hypersensitivity and the treatment approaches offered. **MATERIALS AND METHODS:** Medline was used to find relevant literature published up to December 2006. Based on abstracts and full articles, studies (in human and in animals) were identified describing mechanisms and management of dentine hypersensitivity. Additional information was also obtained by using manual library search for relevant topics in standard texts and journals of dentistry. **RESULTS:** Discussion about the sensitivity of dentine started over a century ago, but it was not until sixty years later that a possible theory was posited. The so-called hydrodynamic theory became popular and was applied to understand the mechanism responsible for hypersensitive dentine. Nevertheless, because of the discrepancies in the pattern by which the dentine responds to various stimuli, several theories of dentine hypersensitivity were proposed which include the hydrodynamic theory, odontoblast transducer mechanism and direct innervation theory. None of these mechanisms was said to fully explain dentine hypersensitivity, thus indicating that as-yet unexplained mechanisms were possibly responsible. A multitude of products were tried and reported to be effective. The efficacy of many was not clearly established and their mechanisms of action were inadequately elucidated. The potential of gene therapy to reduce the burden of dentine hypersensitivity in the future is being examined. **CONCLUSIONS:** Considerable effort has been made to precisely explain dentine hypersensitivity, but doubt still exists whether any one theory can be applied to understanding this condition. This has led to a constant increase in therapeutic approaches worldwide, but with no conclusive evidence of reliable, successful treatment regimens.

37. Barasch, A., J. Cunha-Cruz, et al. (2011). "Risk factors for osteonecrosis of the jaws: a case-control study from the CONDOR dental PBRN." J Dent Res 90(4): 439-444.

Case reports and cohort studies have linked bisphosphonate therapy and osteonecrosis of the jaws (ONJ), but neither causality nor specific risks for lesion development have been clearly established. We conducted a 1:3 case-control study with three dental Practice-based Research Networks, using dentist questionnaires and patient interviews for collection of data on bisphosphonate therapy, demographics, co-morbidities, and dental and medical treatments. Multivariable logistic regression analyses tested associations between bisphosphonate use and other risk factors with ONJ. We enrolled 191 ONJ cases and 573 controls in 119 dental practices. Bisphosphonate use was strongly associated with ONJ (odds ratios [OR] 299.5 {95%CI 70.0-1282.7} for intravenous [IV] use and OR = 12.2 {4.3-35.0} for oral use). Risk markers included local suppuration (OR = 7.8 {1.8-34.1}), dental extraction (OR = 7.6 {2.4-24.7}), and radiation therapy (OR = 24.1 {4.9-118.4}). When cancer patients ($n = 143$) were excluded, bisphosphonate use (OR = 7.2 {2.1-

24.7)), suppuration (OR = 11.9 {2.0-69.5}), and extractions (OR = 6.6 {1.6-26.6}) remained associated with ONJ. Higher risk of ONJ began within 2 years of bisphosphonate initiation and increased four-fold after 2 years. Both IV and oral bisphosphonate use were strongly associated with ONJ. Duration of treatment > 2 years; suppuration and dental extractions were independent risk factors for ONJ.

38. Barasch, A., M. M. Safford, et al. (2011). "Patterns of postoperative pain medication prescribing after invasive dental procedures." *Spec Care Dentist* 31(2): 53-57.

We investigated disparities in the prescription of analgesics following dental procedures that were expected to cause acute postoperative pain. Patients over the age of 19 years who had been treated by surgical and/or endodontic dental procedures were included in this study. We reviewed 900 consecutive charts and abstracted data on procedures, patients, and providers. We used chi-square and logistic regression models for analyses. There were 485 White subjects, 357 African American subjects included in this review; 81% of the African American and 78% of White patients received a postoperative narcotic prescription (p = .56). In multivariate regression models, patients over age 45 (p = .003), those with insurance that covered medication and those with preexisting pain (p = .004) were more likely to receive narcotic analgesics. Students prescribed more narcotics than residents (p = .001). No differences were found by race in prescribing analgesics.

39. Baricevic, M., M. Mravak-Stipetic, et al. (2011). "Oral mucosal lesions during orthodontic treatment." *Int J Paediatr Dent* 21(2): 96-102.

BACKGROUND: Oral mucosal lesions can result from irritation caused by orthodontic appliances or malocclusion, but their frequency is not known. AIM: To examine the frequency of oral mucosal lesions in wearers of orthodontic appliances in comparison to children with malocclusion. DESIGN: This study comprised 111 subjects: 60 wearers of orthodontic appliances and 51 controls (aged between 6 and 18 years). Type and severity of mucosal lesions, their topography, gingival inflammation, and oral hygiene status were determined by using clinical indices. RESULTS: Mucosal lesions were more present in wearers of orthodontic appliances than in children with malocclusion. Gingival inflammation, erosion, ulceration, and contusion were the most common findings in orthodontic patients. The severity of gingival inflammation was in correlation with oral hygiene status; the poorer oral hygiene, the more severe gingival inflammation was. Better oral hygiene status was found in children during orthodontic treatment than in children with malocclusion. CONCLUSIONS: Orthodontic treatment carries a higher risk of mucosal lesions and implies greater awareness of better oral hygiene as shown by the results of this study. Oral hygiene instructions and early treatment of oral lesions are important considerations in better patient's motivation, treatment planning, and successful outcome.

40. Barnes, V. M. (2011). "Dentistry and autism." *J Am Dent Assoc* 142(2): 126; author reply 126-127.

41. Bartlett, D. W., J. Fares, et al. (2011). "The association of tooth wear, diet and dietary habits in adults aged 18-30 years old." *J Dent* 39(12): 811-816.

OBJECTIVE: The association of acidic foods and drinks to the development of erosive tooth wear was investigated in a single cohort of adults aged 18-30 years. METHOD: A tooth wear index was recorded on 1010 participant's who had a mean age of 21.9 years (SD 0.1) and of which 70% were female and 30% males. Participant's completed a previously validated questionnaire containing 50 questions about current and historical dietary habits. Data were analysed at the tooth level using odds ratio. RESULTS: Tooth wear was statistically significantly associated to acidic foods and drinks with high titratable acidity and dietary habits, including drinking from a glass and holding drinks, (OR 5 and 6.5 respectively). A history of heartburn was statistically significantly associated to palatal dentine exposure (p<=0.05 and OR 7.6). CONCLUSION: In this sample of adults, tooth wear was associated to a number of acidic dietary products and drinking habits.

42. Basa, O. and O. C. Dilek (2011). "Assessment of the risk of perforation of the mandibular canal by implant drill using density and thickness parameters." *Gerodontology* 28(3): 213-220.

OBJECTIVE: The objective of this study was to investigate whether the resistance of the bone surrounding the mandibular canal had sufficient density and thickness to avoid perforation by drills when preparing the bed of the implant. BACKGROUND: Damage to the inferior alveolar nerve (IAN) is more common than expected. This injury may lead to serious complications ranging from mild paresthesia to total anaesthesia of the lower jaw. Materials and methods: The CT images of 99 patients, whose ages ranged between 20 and 79 years, and who applied for an implant application to the posterior aspect of the mandible were included in this study. RESULTS: The overall average bone thickness in the premolar and molar regions was 0.8717+/-0.1818 and 0.8556+/-0.1756mm, respectively, whereas the

bone density in the premolar and molar regions was 649.18+/-241.42 and 584.44+/-222.73 Hounsfield Units (HU), respectively ($p < 0.001$). CONCLUSION: It was determined that the average density and thickness of the bone that surrounds the mandibular canal was not sufficient to resist the implant drill. It can be concluded that the risk of injury to the IAN may be minimized by accurately determining the bone mass on the canal prior to the implant procedure, and avoiding excessive force when approaching the canal.

43. Bascones-Martinez, A., P. Matesanz-Perez, et al. (2011). "Periodontal disease and diabetes-Review of the Literature." *Med Oral Patol Oral Cir Bucal* 16(6): e722-729.

AIMS: To provide updated knowledge on the relationship between periodontal disease and diabetes from an oral health perspective. METHODS: A review of the English-language literature was performed, gathering articles on the two diseases published over the past 10 years. RESULTS: Both diseases result from the confluence of various triggering and modifying factors, and there are inter-individual differences in the risk of their development. Recent research has shown that diabetes may increase the risk of periodontitis, and it has been proposed that chronic periodontal disease may influence the natural course of diabetes. There appears to be an association among oral infections, impaired sugar metabolism, and atherosclerosis, indicating a theoretical link between metabolic syndrome and periodontal disease. CLINICAL IMPLICATIONS: Control of periodontal disease may enhance glycemic control in patients with type 2 diabetes. In turn, improved glycemic control may contribute to a better control of periodontal disease.

44. Baskaradoss, J. K., A. Geevarghese, et al. (2011). "Maternal periodontal status and preterm delivery: a hospital based case-control study." *J Periodontol* 46(5): 542-549.

BACKGROUND AND OBJECTIVE: Recent studies have presented evidence that periodontal disease in pregnant women may be a determining factor for preterm delivery. However, this finding has not been consistently observed. The present investigation was carried out to explore the association between maternal periodontal disease and preterm delivery in the state of Kerala, India. MATERIAL AND METHODS: The case-control study had a sample of 300 (100 cases and 200 controls) postpartum women over 18 years of age. Cases were women who had undergone spontaneous preterm delivery (< 37 wk of gestation) and controls were women who delivered at term (≥ 37 wk of gestation). Standard, clinical and periodontal examinations were performed at the maternity wards, and the existence of an association between periodontal disease and preterm delivery was evaluated by means of a multivariate logistic regression model that also considered other risk factors for preterm delivery. RESULTS: Periodontitis was diagnosed in 25% of the mothers in the case group and in 14.5% of the mothers in the control group. Logistic regression analysis indicated a risk of nearly threefold for preterm delivery in mothers with periodontitis [adjusted odds ratio (OR(a)) = 2.72; 95% confidence interval (CI): 1.68-6.84]. The other factors significantly associated with preterm birth were physical exertion (OR(a) = 2.80; 95% CI: 1.18-6.65), a previous history of preterm birth (OR(a) = 2.65; 95% CI: 1.20-5.83) and previous abortion/death of infant (OR(a) = 4.08; 95% CI: 1.56-10.65). CONCLUSION: Periodontal disease is a possible risk factor for preterm delivery in this population.

45. Baumer, A., N. El Sayed, et al. (2011). "Patient-related risk factors for tooth loss in aggressive periodontitis after active periodontal therapy." *J Clin Periodontol* 38(4): 347-354.

OBJECTIVES: Evaluation of patient-related risk factors contributing to tooth loss and recurrence of periodontitis 10.5 years after initial therapy in patients with aggressive periodontitis (AgP). MATERIAL AND METHODS: Eighty-four of 174 patients were included. Re-examination consisted of patient's history, clinical examination and test for interleukin (IL)-1 composite genotype. Patients' charts were searched for regularity of maintenance and initial diagnosis. Statistical analysis was performed using Poisson and logistical regression analysis. RESULTS: The responder rate was 48%. Thirteen of 84 patients presented a localized AgP, 68 were females and 29 smoked. One hundred and thirteen teeth out of 2154 were lost after therapy (1.34 teeth/patient). Age ($p = 0.0018$), absence of IL-1 composite genotype ($p = 0.0091$) and educational status ($p = 0.0085$) were identified as statistically significant risk factors for tooth loss. Twenty patients exhibited recurrence of periodontitis at re-examination. Smoking ($p = 0.0034$) and mean Gingival Bleeding Index (GBI) ($p = 0.0239$) contributed significantly to recurrence of disease. No patient participating regularly in supportive periodontal therapy (SPT) showed disease recurrence. CONCLUSION: Age, absence of IL-1 composite genotype and low social status are detected as risk factors for tooth loss. Smoking and high mean GBI are associated with an increased risk for recurrence of periodontitis, whereas regular SPT acts as a protective factor.

46. Baumer, A., B. Pretzl, et al. (2011). "Tooth loss in aggressive periodontitis after active periodontal therapy: patient-related and tooth-related prognostic factors." *J Clin Periodontol* 38(7): 644-651.

OBJECTIVES: To assess prognostic factors for tooth loss after active periodontal therapy (APT) in patients with aggressive periodontitis (AgP) at tooth level. MATERIAL AND METHODS: Eighty-four patients with AgP were re-

evaluated after a mean period of 10.5 years of supportive periodontal therapy (SPT). Two thousand and fifty-four teeth were entered into the model. The tooth-related factors including baseline bone loss, tooth location and type, furcation involvement (FI), regenerative therapy, and abutment status, as well as time of follow-up and other patient-related factors were tested for their prognostic value at tooth level. Multilevel regression analysis was performed for statistical analysis to identify factors contributing to tooth loss. RESULTS: During SPT, 113 teeth (1.34 teeth per patient) were lost. Baseline bone loss, use as abutment tooth, tooth type, and maxillary location contributed significantly to tooth loss during SPT. Molars showed the highest risk for tooth loss after APT. Moreover, time of follow-up and the patient-related factor "educational status" significantly accounted for tooth loss at tooth level. CONCLUSION: Baseline bone loss, abutment status, tooth location, and type as well as time of follow-up and educational status were detected as prognostic factors for tooth loss during SPT in patients with AgP at tooth level.

47. Bayar, G. R., R. Tutuncu, et al. (2012). "Psychopathological profile of patients with different forms of bruxism." Clin Oral Investig 16(1): 305-311.

The aim of the current study was to evaluate the prevalence of psychopathological symptoms in patients who self-reported different forms of bruxism by means of clinical and anamnestic diagnostic criteria. Eighty-five participants were divided into four groups as sleep bruxers (12), awake bruxers (24), sleep-awake bruxers (33), and non-bruxers (16). A self-report symptom inventory questionnaire (Symptom Checklist-90-Revised (SCL-90-R)) was filled out by all groups to determine their psychopathological symptoms. As regards mean psychopathological scores, patients with sleep-awake bruxism endorsed the highest scores. In addition, patients with awake bruxism showed higher scores than patients with sleep bruxism and non-bruxism in most SCL-90-R subscales. Kruskal-Wallis test revealed significant differences between groups in any of the SCL-90-R subscales, except for the psychoticism subscale. Mann-Whitney test followed by Bonferroni's test correction between non-bruxer and sleep-awake bruxer groups revealed significant differences in depression, anxiety, hostility, phobic anxiety, paranoid ideation, global severity index, positive symptom distress index, and positive symptom total in all SCL-90-R subscales. Statistical analysis of our study showed that differences between groups were significant in all SCL-90-R subscales except for the psychoticism subscale. Better distinction of bruxism forms may help to develop new treatment strategies for bruxism disorder.

48. Bayat, A. and R. W. Kosinski (2011). "Methemoglobinemia in a newborn: a case report." Pediatr Dent 33(3): 252-254.

The purpose of this report was to describe a case of methemoglobinemia involving different systemic complications as a result of local anesthetic injection with lidocaine in a 2-day-old female patient. Acquired methemoglobinemia is considered a major, potentially life-threatening complication. There are several reports of this complication related to anesthetic agents, most commonly prilocaine and benzocaine. It can involve patients of different ages, but it is more common in children 6-years-old and younger, particularly those younger than 3 months. Widely used in dental practices for pain management, lidocaine is considered to be one of the safest anesthetic agents. Although rare, complications of lidocaine administration need to be addressed properly, and adequate training in diagnosis and management of these complications should be provided. Providers should weigh the risk and benefit of using these agents.

49. Bean, C. Y. (2011). "Community-based dental education at the Ohio State University: the OHIO Project." J Dent Educ 75(10 Suppl): S25-35.

In the late 1990s, Ohio's citizens expressed to the state leadership that access to dental care was their greatest unmet health need. State-sponsored surveys continued to report that certain populations-the poor, disabled, and minorities-experience higher-than-average rates of dental disease and cannot access care. The Ohio State University College of Dentistry sought to respond to this need by securing a \$1.5 million grant from the Robert Wood Johnson Foundation in 2002 and began an experiment in engagement with community partners unprecedented in its history. As the state's flagship dental institution, the college committed to a fundamental change in its clinical education of students and began a process of making dental education relevant to our citizens, exposing students to populations they were being trained to help, and bolstering the fragile statewide network of safety-net clinics with providers. This case history offers an operational overview, including some challenges and successes, of one school's journey in community-based dental education.

50. Becker, D. E. (2011). "Adverse drug interactions." Anesth Prog 58(1): 31-41.

The potential for interactions with current medications should always be considered when administering or prescribing any drug. Considering the staggering number of drugs patients may be taking, this task can be daunting. Fortunately,

drug classes employed in dental practice are relatively few in number and therapy is generally brief in duration. While this reduces the volume of potential interactions, there are still a significant number to be considered. This article will review basic principles of drug interactions and highlight those of greatest concern in dental practice.

51. Becker, D. E. (2011). "Pharmacokinetic considerations for moderate and deep sedation." *Anesth Prog* 58(4): 166-172; quiz 173.

Moderate and deep sedation can be provided using several routes of drug administration including oral (PO), inhalation, and parental injection. The safety and efficacy of these various techniques is largely dependent on pharmacokinetic principles. This continuing education article will highlight essential principles of absorption, distribution, and elimination of commonly used sedative agents.

52. Becker, D. E. and D. A. Haas (2011). "Recognition and management of complications during moderate and deep sedation part 1: respiratory considerations." *Anesth Prog* 58(2): 82-92.

The risk for complications while providing any level of sedation or general anesthesia is greatest when caring for patients having significant medical compromise. It is reassuring that significant untoward events can generally be prevented by careful preoperative assessment, along with attentive intraoperative monitoring and support. Nevertheless, we must be prepared to manage untoward events should they arise. This continuing education article will review respiratory considerations and will be followed by a subsequent article addressing cardiovascular considerations.

53. Becker, D. E. and D. A. Haas (2011). "Recognition and management of complications during moderate and deep sedation. Part 2: cardiovascular considerations." *Anesth Prog* 58(3): 126-138.

The risk for cardiovascular complications while providing any level of sedation or general anesthesia is greatest when caring for patients already medically compromised. It is reassuring that significant untoward events can generally be prevented by careful preoperative assessment, along with attentive intraoperative monitoring and support. Nevertheless, providers must be prepared to manage untoward events should they arise. This continuing education article will review cardiovascular complications and address their appropriate management.

54. Beena, J. P. (2011). "Prevalence of dental caries and its correlation with the immunologic profile in HIV-Infected children on antiretroviral therapy." *Eur J Paediatr Dent* 12(2): 87-90.

AIM: To describe the prevalence of dental caries in HIV-infected children on antiretroviral therapy. METHODS: One hundred and four HIV positive children on antiretroviral therapy, two to fourteen year old children of both sexes were examined for dental caries. Children were divided into three groups based on the dentition: primary, mixed and permanent. They were also grouped depending on their absolute CD4 count and CD4 percentage into mild, advanced and severe stages. RESULTS: The primary dentition group had a mean deft of 5.07 +/- 5.29 and a caries prevalence of 58.62%; in the mixed dentition group the mean deft was 3.81 +/- 3.41 and the mean DMFT was 1.40 +/- 2.03 with caries prevalence of 86.20%. In the permanent dentition group the mean DMFT was 3.00 +/- 2.37 with a caries prevalence of 76.47%. CONCLUSION: Prevalence of dental caries was high in HIV-infected children in advanced CD4 count group. A decrease in the absolute lymphocyte count was associated with an increase in dental caries prevalence.

55. Belanger-Giguere, K., S. Giguere, et al. (2011). "Disinfection of toothbrushes contaminated with *Streptococcus mutans*." *Am J Dent* 24(3): 155-158.

PURPOSE: To determine the most effective method to kill *Streptococcus mutans* on contaminated toothbrushes. METHODS: Seven toothbrushes (one for each treatment and the control) were contaminated with *S. mutans*. Toothbrushes were then rinsed in phosphate buffered saline (PBS) and treated as follows: (1) control without treatment; (2) air dry for 4 hours; (3) Crest Pro-Health mouthwash for 20 minutes; (4) Listerine mouthwash for 20 minutes; (5) normal cleaning cycle in a dishwasher; (6) microwave on high power for 5 minutes; and (7) ultraviolet light using the DenTek Toothbrush Sanitizer for 10 minutes. All toothbrushes were rinsed again with PBS. The bristles were cut and vortexed in PBS. Serial dilutions were performed and the number of colonies enumerated after incubation. The experiment was independently repeated seven times. RESULTS: The Crest Pro-Health mouthwash and the dishwasher almost completely eliminated *S. mutans*. The second most effective treatment was the microwave. The Listerine mouthwash and the air dry groups were not significantly different from each other and ranked third. Although UV light significantly decreased the number of bacteria compared to the control, reduction in the number of *S. mutans* CFU was

significantly lower than that of all the other treatments evaluated. Crest Pro-Health mouthwash for 20 minutes and a normal dishwasher cycle are the most effective methods to eradicate *S. mutans* from contaminated toothbrushes.

56. Bellamy, P. G., M. Prendergast, et al. (2011). "Can anti-erosion dentifrices also provide effective plaque control?" *Int J Dent Hyg* 9(3): 223-228.

OBJECTIVE: While gingivitis and caries continue to be prevalent issues, there is growing concern about dental erosion induced by dietary acids. An oral hygiene product that protects against all these conditions would be beneficial. This study investigated the potential of two anti-erosion dentifrices to inhibit plaque. **METHODS:** This was a randomized,

three-period, two-treatment, double-blind, crossover study evaluating a stannous chloride/sodium fluoride dentifrice (SnCl₂/NaF, blend-a-med((R)) Pro Expert) and a popular anti-erosion dentifrice (NaF, Sensodyne((R)) ProNamel()). During Period 3, subjects were randomized to repeat one treatment to evaluate any product carryover effects. Each treatment period was 17 days. Test dentifrices were used with a standard manual toothbrush. Digital plaque image analysis (DPIA) was employed at the end of each period to evaluate plaque levels (i) overnight (am prebrush); (ii) post-brushing with the test product (am post-brush); and (iii) mid-afternoon (pm). Analysis was conducted via an objective computer algorithm, which calculated total area of visible plaque. **RESULTS:** Twenty-seven subjects completed the study. At all time points, subjects had statistically significantly ($P \leq 0.0001$) lower plaque levels after using the SnCl₂/NaF dentifrice than the NaF dentifrice. The antiplaque benefit for the SnCl₂/NaF dentifrice versus the NaF dentifrice was: am prebrush = 26.0%; am post-brushing = 27.9%; pm = 25.7%. **CONCLUSIONS:** The SnCl₂/NaF dentifrice provided significantly greater daytime and overnight plaque inhibition than the NaF toothpaste. When recommending dentifrice to patients susceptible to dental erosion, clinicians can consider one that also inhibits plaque.

57. Bello, S. A., W. L. Adeyemo, et al. (2011). "Effect of age, impaction types and operative time on inflammatory tissue reactions following lower third molar surgery." *Head Face Med* 7: 8.

BACKGROUND: Postoperative morbidity following third molar surgery is affected by a number of factors. The study of these factors is essential for effective planning and limitation of morbidity. The aim of this study was to determine the effect of age, type of impaction and operative time on immediate postoperative tissue reactions following mandibular third molar surgery. **METHODS:** Consecutive patients with impacted mandibular third molar teeth were studied. All the third molars were classified according to Winter's classification. Surgical extraction was performed on all the patients by a single surgeon under local anaesthesia. The operation time was determined by the time lapse between incision and completion of suturing. Postoperative pain, swelling and trismus were evaluated. **RESULTS:** There were 120 patients with an age range of 19-42 years. Patients in the age range of 35-42 years recorded a lower pain score ($p = 0.5$) on day 1. The mouth opening was much better in the lower age group on day 2 and 5 ($p = 0.007$ and $p = 0.01$ respectively). Pain, swelling and trismus increased with increasing operative time. Distoangular impaction was significantly associated with higher VAS score on day 1 and 2 ($p = 0.01, 0.0, 04$). Distoangular and horizontal impaction are associated with a higher degree of swelling and reduced mouth opening on postoperative review days. Vertical impaction was associated with the least degree of facial swelling and best mouth opening. **CONCLUSIONS:** Increasing operating time and advancing age are associated with more postoperative morbidity, likewise distoangular and horizontal impaction types.

58. Belobrov, I. and P. Parashos (2011). "Treatment of tooth discoloration after the use of white mineral trioxide aggregate." *J Endod* 37(7): 1017-1020.

INTRODUCTION: A number of vital pulp therapy techniques have been recommended to preserve pulp vitality in teeth with complicated crown fractures, especially in young patients. Calcium hydroxide has been the gold standard as a pulp capping material, but recently mineral trioxide aggregate (MTA) has been recommended. This case report describes the treatment of tooth discoloration caused by white MTA (WMTA) used for the management of a complicated crown fracture. **METHODS:** A partial pulpotomy was performed with the use of WMTA after a complicated crown fracture of the upper right central incisor. Seventeen months later, the WMTA was removed because of tooth discoloration, and internal bleaching was performed. **RESULTS:** Upon access, the WMTA was completely discolored. After it was removed, a significant color change was observed in the tooth crown, which was further improved with internal bleaching. The tooth remained vital, and a dentin bridge was confirmed clinically and radiographically. **CONCLUSIONS:** The recommendation to use WMTA for vital pulp therapy in the esthetic zone may need to be reconsidered. Should discoloration occur with the use of WMTA, the technique described may be used to improve the esthetics.

59. Belvedere, P. C. (2011). "Performance-enhancing oral appliances": fact or fiction?" *Dent Today* 30(6): 10, 12.

60. Bender, S. D. (2011). "Topical review: cluster headache and sleep-related breathing disorders." *J Orofac Pain* 25(4): 291-297.

This article reviews the existing literature of the common anatomic and physiologic aspects of cluster headache and sleep-related breathing disorders to point out evidence suggesting potential therapies beneficial for both maladies. A search of PubMed, as well as relevant textbooks, was conducted using the terms cluster, headache, sleep, apnea, pain, and chronobiology to find any previously published work that may connect the two disorders. Relevant references in the literature were also investigated. As a group, cluster headache patients tend to have a higher incidence of sleep-related breathing disorders as compared to the noncluster headache population. While commonalities in anatomy and physiology exist, robust evidence linking the two disorders is currently lacking. Many people are unaware that they suffer with a sleep-related breathing disorder. The high incidence of these two disorders occurring together should prompt the clinician who treats cluster headache patients to be acutely aware that a yet undiagnosed sleep disorder may also be present.

61. Bendgude, V., B. Akkareddy, et al. (2011). "An unusual pattern of self-inflicted injury after dental local anesthesia: a report of 2 cases." *J Contemp Dent Pract* 12(5): 404-407.

The local anesthetics used in dentistry are considered very safe and have a low incidence of adverse reactions associated with their administration. A frequent finding by clinicians engaged in treatment of children is, following a dental appointment requiring local anesthesia to treat dental disease, a child may bite his or her lip out of curiosity associated with the unfamiliar sensation of being numb or inadvertently because no pain is felt. We describe two unusual case reports of postanesthetic self-inflicted injuries in this article. The first being the ulceration due to lip biting and the scratch injury on the chin after inferior alveolar nerve block. The second report presents an unusual scratch injury on the ala of nose following maxillary infiltration anesthesia. The common treatment modalities and the possible methods of prevention are discussed.

62. Bentoski, J. R. and J. R. Boynton (2011). "Guiding the behavior of children in the dental setting. Opportunities for success." *J Mich Dent Assoc* 93(1): 36-40.

Through use of communication-based strategies, effective local anesthesia, and judicious use of nitrous oxide, the vast majority of children can be cooperative at the dentist's office. Proper communication with children helps to ensure that dental care is completed in a compassionate, safe manner, helping to make children's dentistry a very rewarding part of a dental practice.

63. Bergoff, J. (2011). "Electronic dental records: start taking the steps." *Dent Assist* 80(2): 18-20, 22-13, 26-18; quiz 30, 32-13.

Converting paper patient records charts into their electronic counterparts (EDRs) not only has many advantages, but also could become a legal requirement in the future. Several steps key to a successful transition includes assessing the needs of the dental team and what they require as a part of the implementation Existing software and hardware must be evaluated for continued use and expansion. Proper protocols for information transfer must be established to ensure complete records while maintaining HIPAA regulations regarding patient privacy. Reduce anxiety by setting realistic dead-lines and using trusted back-up methods.

64. Bernson, J. M., L. R. Hallberg, et al. (2011). "Making dental care possible: a mutual affair': a grounded theory relating to adult patients with dental fear and regular dental treatment." *Eur J Oral Sci* 119(5): 373-380.

Dental fear is a common and widespread problem, which can cause severe stress. Even so, most patients with dental fear undergo regular dental treatment in spite of their fear and many enjoy good oral health. The aim of this study was to obtain a deeper understanding of how patients with dental fear manage to undergo dental treatment. Fourteen patients with dental fear, who undergo regular dental care, were interviewed. Qualitative analysis of the transcribed interviews was performed according to the principles of grounded theory. A conceptual framework was generated, and the main concern was identified as 'making dental care possible - a mutual affair'. Four additional categories explained how patients handled their dental fear and how dental care became possible. The strategies were labelled 'taking part in a mental wrestling match', 'trust-filled interaction with dental staff', 'striving for control' and 'seeking and/or receiving social support'. The results showed that making dental care possible for patients with dental fear is a mutual

challenge that requires interplay between dental staff and patients, involving verbal and non-verbal communication reflecting respect, attention, and empathy. Moreover, a balance between nearness and distance and between professional and personal treatment is required.

65. Bezerra, T. P., E. C. Studart-Soares, et al. (2011). "Prophylaxis versus placebo treatment for infective and inflammatory complications of surgical third molar removal: a split-mouth, double-blind, controlled, clinical trial with amoxicillin (500 mg)." J Oral Maxillofac Surg 69(11): e333-339.

66. Bhadbhade, S. J., A. B. Acharya, et al. (2011). "The antiplaque efficacy of pomegranate mouthrinse." Quintessence Int 42(1): 29-36.

OBJECTIVE: to evaluate the effect of a pomegranate-containing mouthrinse on plaque, determine whether it has any adverse effects, and evaluate its antibacterial properties against selected periodontopathogens in vitro. METHOD AND MATERIALS: thirty periodontally healthy volunteers, randomly divided into three groups, refrained from all mechanical oral hygiene measures for 4 days and used one of the randomly assigned mouthrinses (A, pomegranate; B, chlorhexidine; or C, distilled water [placebo]) twice daily. The Plaque Index (PI) was assessed at days 0 and 5. Adverse effects were also evaluated. Pomegranate extract was tested against *Aggregatibacter actinomycetemcomitans* (A.a.), *Porphyromonas gingivalis* (P.g.), and *Prevotella intermedia* (P.i.). RESULTS: in all groups, the PI significantly increased from the baseline to day 5 ($P < .1$). The pomegranate mouthrinse created no adverse effects. There was a statistically significant difference ($P < .05$) between the chlorhexidine and placebo rinse and the pomegranate and placebo rinse, but no statistically significant difference was found between the chlorhexidine and pomegranate rinse with respect to the PI. Pomegranate extract showed inhibition of all three strains of periodontopathogens at various concentrations. CONCLUSION: these results indicate that the pomegranate mouthrinse has an antiplaque effect. Pomegranate extract is efficacious against A.a., P.g., and P.i. strains in vitro. Pomegranate mouthrinse should be explored as a long-term antiplaque rinse with prophylactic benefits.

67. Bhatavadekar, N. B., R. G. Rozier, et al. (2011). "Holding up the oral health safety net: the role of National Health Service Corps alumni dentists in North Carolina." Int Dent J 61(3): 136-143.

BACKGROUND: Access to oral health care among low income populations is a growing problem. The National Health Service Corps (NHSC) might increase the supply of dentists motivated to provide services for this population. OBJECTIVE: To determine if North Carolina dentists who began a service obligation with the NHSC in 1990-1999 continued to provide care for underserved populations and if they differ from non-NHSC alumni primary care dentists who started practice in the state during that same period. METHODS: All 19 NHSC alumni and 50 comparison dentists were surveyed by mail. NHSC alumni also responded to selected items in a telephone follow-up interview. The two groups were compared using difference of means tests and multivariate contingency tables. RESULTS: National Health Service Corps alumni were more likely to be African-American (38%vs. 10%), work in safety net practices (84%vs. 23%), and see more publicly insured patients (60%vs. 19%) than comparison dentists. Yet their job satisfaction was comparable to non-NHSC alumni dentists. Analyses suggested that current practice in safety net settings is affected by dentists' race, altruistic motivations and previous NHSC participation. CONCLUSION AND POLICY IMPLICATION: Targeted recruitment of African-American dentists and others wanting to work in underserved communities could amplify the effectiveness of the financial incentive of NHSC loan repayment and induce dentists to remain in 'safety net' settings.

68. Bhatnagar, S., U. M. Das, et al. (2011). "Foreign body ingestion in dental practice." J Indian Soc Pedod Prev Dent 29(4): 336-338.

Most foreign bodies pass through the gastrointestinal tract uneventfully. The majority of the reported literature describes the management of ingested blunt objects. However, ingestion of sharp objects can still occur with a higher rate of perforation corresponding to treatment dilemmas. We report a case of inadvertently ingested sharp foreign body by a special child, which was retrieved by endoscopic guided forceps. Urgent endoscopic assessment and retrieval of recently ingested sharp dental foreign body is indicated and routine use of preventive measures such as rubber dam, gauze throat screens or floss ligatures is suggested.

69. Bidra, A. S., J. J. Tarrand, et al. (2011). "Antimicrobial efficacy of oral topical agents on microorganisms associated with radiated head and neck cancer patients: an in vitro study." Quintessence Int 42(4): 307-315.

OBJECTIVE: A variety of oral topical agents have been used for prevention and management of radiotherapy-induced adverse effects. The antimicrobial nature of some of the commonly used agents is unknown. The purpose of this study was to evaluate antimicrobial efficacies of various oral topical agents on common microorganisms associated with radiated head and neck cancer patients. **METHOD AND MATERIALS:** Seven commonly used topical oral agents-0.12% chlorhexidine with alcohol, 0.12% chlorhexidine without alcohol, baking soda-salt rinse, 0.4% stannous fluoride gel, 0.63% stannous fluoride rinse, calcium phosphate mouthrinse, and acemannan hydrogel (aloe vera) rinse-were evaluated in vitro for their antimicrobial efficacies against four common microorganisms. A combination of baking soda-salt rinse and 0.4% stannous fluoride gel was evaluated as the eighth agent. The microorganisms used were *Staphylococcus aureus*, group B *Streptococcus*, *Escherichia coli*, and *Candida albicans*. An ELISA reader was used to measure the turbidity of microbial culture wells and optical density (OD) values for each of the 960 wells recorded. Mean OD values were rank ordered based on their turbidity. One-way ANOVA with Tukey HSD post hoc analysis was used to study differences in OD values ($P < .05$). **RESULTS:** Mean OD values classified for topical agents from lowest to highest were chlorhexidine with alcohol, chlorhexidine without alcohol, baking soda- salt, calcium phosphate rinse, and the combination of baking soda-salt and stannous fluoride gel. Mean OD values classified for microorganisms from lowest to highest were *Escherichia coli*, *Staphylococcus aureus*, group B *Streptococcus*, and *Candida albicans*. **CONCLUSION:** A significant difference among the antimicrobial efficacies of topical agents was evident for each of four microorganisms ($P < .05$). There was also a significant difference among the antimicrobial efficacies of the same topical agent on the four microorganisms tested ($P < .05$).

70. Bilder, L., H. Hazan-Molina, et al. (2011). "Medical emergencies in a dental office: inhalation and ingestion of orthodontic objects." J Am Dent Assoc 142(1): 45-52.

BACKGROUND: The authors reviewed the literature regarding inhalation and ingestion of orthodontic appliances and suggest ways to manage and prevent these events. **TYPES OF STUDIES REVIEWED:** The authors conducted literature searches of free text and Medical Subject Headings terms by using PubMed and Embase databases and selected appropriate studies. They analyzed retrieved articles according to several parameters: inhalation or ingestion event, number of cases, patient's sex and age, type of orthodontic appliance, in-office event or out-of-office event, and medical treatment. **RESULTS:** The authors found a total of 2,279 articles in their preliminary search. Eighteen reports of 24 cases from this search met all of the search criteria (that is, clinical studies, case reports or reviews limited to English, Hebrew or Arabic on any form of aspiration or inhalation of orthodontic appliances). Most cases (67 percent) involved ingested objects, and of those cases, the majority (57 percent) occurred in female patients. Most cases (85 percent) occurred outside the orthodontist's office. Seventeen patients (71 percent) had been treated with a fixed orthodontic appliance. In 60 percent of cases, the maxilla was involved. With one exception, no severe complications were reported (only seven patients were examined in a hospital emergency department), and patients were discharged uneventfully from the orthodontic office or emergency department. **CLINICAL IMPLICATIONS:** Orthodontists and team members should participate in medical emergency management courses that emphasize the use of guidelines in cases of inhalation or ingestion of orthodontic objects. Each orthodontist's office should develop written emergency protocols for out-of-office events and present them to patients and their parents at the start of treatment.

71. Birardi, V. and F. Pasini (2011). "Study about the effects of dental noises on the emotional experiences of children aged 6 to 10 years. A pilot study." Eur J Paediatr Dent 12(4): 236-238.

AIM: The aim of our study is to verify if some of the noises produced in a dental surgery, especially those of high- speed drill and Erbium laser, might cause anxiety to children. **MATERIALS AND METHODS:** In order to confirm our hypothesis, we recorded these noises and then reproduced them to a group of children in a neutral setting, in this case at school. The children were aged 6 to 10 years, 55.9% were Italian, while the remaining 44.1% were of other nationalities. Some of them already had a previous experience at the dentist's. **RESULTS:** The range of images recalled by the children is very small, and they all refer to a realistic, imaginary and sometimes daily context (domestic, family and game related). Such representations have rarely been associated to negative sensations. **CONCLUSION:** The noise environment of the dentist's surgery, for what concerns the two stimuli we analysed (high-speed Drill and Erbium laser), does not cause an anxious reaction to the majority of children; as a matter of fact the percentage of positive sensations and emotions turns out to be predominant. The results obtained suggest it would be useful to protect this natural tendency, finding out the best method to prevent adult models, such as parents or clinical staff, from affecting it in a negative way.

72. Bispo, C. G., I. P. Tortamano, et al. (2011). "Cardiovascular responses to different stages of restorative dental treatment unaffected by local anaesthetic type." Aust Dent J 56(3): 312-316.

BACKGROUND: The aim of this study was to evaluate the cardiovascular effects of maxillary infiltration using 2% lidocaine with 1:100,000 adrenaline, 4% articaine with 1:200,000 adrenaline, and 4% articaine with 1:100,000 adrenaline in different stages during restorative dental procedures. **METHODS:** Twenty healthy patients randomly received 1.8 mL of the three local anaesthetics. Systolic blood pressure, average blood pressure, diastolic blood pressure, and heart rate were evaluated by the oscillometric and photoplethysmograph methods in seven stages during the appointment. **RESULTS:** Statistical analysis by ANOVA and Tukey tests of cardiovascular parameters did not show significant differences between the anaesthetic associations. There were significant differences for the parameters among different clinical stages. **CONCLUSIONS:** The variation of cardiovascular parameters was similar for lidocaine and articaine with both adrenaline concentrations and showed no advantage of one drug over the other. Cardiovascular parameters were influenced by the stages of the dental procedures, which showed the effect of anxiety during restorative dental treatment.

73. Blomqvist, M., S. Ahadi, et al. (2011). "Dental caries in adolescents with attention deficit hyperactivity disorder: a population-based follow-up study." *Eur J Oral Sci* 119(5): 381-385.

This study tested the hypothesis that adolescents with attention deficit hyperactivity disorder (ADHD) exhibit a higher prevalence of caries than adolescents in a control group. Thirty-two adolescents with ADHD and a control group of 55 adolescents from a population-based sample, all 17 yr of age, underwent a clinical and radiographic dental examination. The mean +/- SD number of decayed surfaces (DS) was 2.0 +/- 2.2 in adolescents with ADHD and 0.9 +/- 1.4 in adolescents of the control group. Thirty-one per cent of the adolescents in the ADHD group had no new caries lesions (DS = 0) compared with 62% in the control group. Six per cent of the adolescents in the ADHD group were caries free [decayed, missing or filled surfaces (DMFS) = 0] compared with 29% in the control group. Adolescents with ADHD also had a higher percentage of gingival sites that exhibited bleeding on probing compared with the control group: 35 +/- 39% vs. 16 +/- 24% (mean +/- SD), respectively. At 17 yr of age, adolescents with ADHD exhibited a statistically significantly higher prevalence of caries compared with an age-matched control group. Adolescents with ADHD need more support regarding oral hygiene and dietary habits. They should be followed up with shorter intervals between dental examinations to prevent caries progression during adulthood.

74. Borelli, V. and G. Zabucchi (2011). "Burning mouth syndrome: mast cell connection." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 112(4): 414.

75. Bortoluzzi, M. C., A. Guollo, et al. (2011). "Pain levels after third molar surgical removal: an evaluation of predictive variables." *J Contemp Dent Pract* 12(4): 239-244.

AIM: The aim of this prospective study was to evaluate the pain course after surgical removal of third molars. **MATERIALS AND METHODS:** The sample consisted of 100 consecutive patients. Pain intensity was assessed by means of a visual analog scale (VAS). **RESULTS:** At day 1, moderate and severe pain were observed predominantly in patients who had surgery in the mandible ($p < 0.001$) and for patients younger than 24 years ($p = 0.009$), while more patients who weekly consumed mate tea (*Ilex paraguariensis*) showed pain classified as none or light ($p = 0.017$). At day 2, the profile of pain moderate/severe was more prevalent for patients who had surgery in the mandible ($p < 0.001$) with the report of difficult surgery ($p = 0.042$) and with odontotomy performed ($p = 0.033$). In the third postoperative day, severe/moderate pain was associated with surgery in the mandible ($p < 0.001$) and with odontotomy ($p = 0.021$) and ostectomy ($p = 0.028$) performed, with report of long and difficult procedure ($p = 0.023$), surgeries which last more than sixty minutes ($p < 0.026$), and for those patients who developed postoperative inflammatory complications ($p < 0.001$). **CONCLUSION:** Higher pain complains could be expected for patients who have long and difficult mandibular third molar surgery characterized by odontotomy and ostectomy. **CLINICAL SIGNIFICANCE:** Pain after third molar surgery is a common sequele. It is indispensable for the dentists to be apt in handling and preventing it as far as possible and know possible variables that may influence or increase these pain levels. It can be a clinical advantage. Better understanding the pain characteristics may guide the dentist through preoperative decisions.

76. Botelho, M. P., S. M. Maciel, et al. (2011). "Cariogenic microorganisms and oral conditions in asthmatic children." *Caries Res* 45(4): 386-392.

This study evaluated the caries risk of asthmatic patients on the basis of mutans streptococci (MS) and lactobacilli levels in saliva samples as well as the index of oral hygiene and dental caries (DMFT index). The study population was composed of 80 asthmatic children, aged 3-15 years, who use specific medication, and 80 matched, healthy control children. The parents were interviewed about oral health-related factors. The World Health Organization criteria were used for dental examinations. The Kohler and Bratthal methodology was used to detect salivary MS levels and dilutions

of saliva were done for lactobacilli counting. No differences between asthma and control groups were observed for caries prevalence in children aged 3-6 and 7-10 years, except in severe cases in the younger group. However, higher caries prevalence for permanent dentition was observed in 11- to 15-year-old asthmatic children. An increased dental biofilm was observed in the asthma group, as well as salivary levels of MS. No differences were observed in levels of lactobacilli. No statistical correlations were found between medication, frequency of treatment, method of consumption and caries experience, dental biofilm and salivary levels of MS or lactobacilli. However, there was a correlation between MS levels and treatment duration. The logistic regression revealed that MS level is an important risk factor for increased caries experience. Asthma should be evaluated as a risk factor for caries experience because it can increase the levels of MS and the dental biofilm.

77. Bouloux, G. F. (2011). "Use of opioids in long-term management of temporomandibular joint dysfunction." J Oral Maxillofac Surg 69(7): 1885-1891.

The long-term treatment of patients with chronic temporomandibular joint dysfunction has been challenging. The long-term use of opioids in these patients can be neither supported nor refuted based on current evidence. However,

evidence is available to support the long-term use of opioids in other chronic noncancer pain states with reduced pain, improved function, and improved quality of life. One group of patients with chronic temporomandibular joint pain, for whom both noninvasive and invasive treatment has failed, might benefit from long-term opioid medication. The choices include morphine, fentanyl, oxycodone, tramadol, hydrocodone, and methadone. Adjunct medication, including antidepressant and anticonvulsant drugs, can also be used. The safety of these medications has been well established, but the potential for adverse drug-related behavior does exist, requiring appropriate patient selection, adequate monitoring, and intervention when needed.

78. Boyd, B. C. and S. J. Sutter (2011). "Dexmedetomidine sedation for awake fiberoptic intubation of patients with difficult airways due to severe odontogenic cervicofacial infections." J Oral Maxillofac Surg 69(6): 1608-1612.

PURPOSE: Odontogenic infections present challenging airway scenarios to surgeons and anesthesiologists. Among specialists, there is controversy over airway management for those patients with airways made difficult by trismus and swelling with anatomic impingement and derangement. Awake fiberoptic intubation has achieved favor in the oral and maxillofacial surgery and anesthesiology communities for management of such difficult airways, but patient comfort and anxiety management with traditional agents may prove hazardous because of potential suppression of protective mechanisms and respiratory depression. **PATIENTS AND METHODS:** Three cases are presented showing the utility and safety of the use of dexmedetomidine sedation for presurgical airway instrumentation and insertion in patients with challenging airways because of severe cervicofacial odontogenic infections. **RESULTS:** Dexmedetomidine administration provided safe and effective sedation and anxiolysis for awake fiberoptic airway instrumentation and airway insertion in patients presenting with severe cervicofacial infections with difficult airways because of anatomic obstruction. **CONCLUSIONS:** Dexmedetomidine sedation is advocated for use in awake fiberoptic intubation of patients with cervicofacial infections and difficult airways because of its ability to provide sedation, analgesia, reversible anterograde amnesia, and anxiolysis without impairment of protective reflexes, respiratory depression, or hemodynamic compromise. One of the most significant challenges facing oral and maxillofacial surgeons is the difficult airway. Anatomically compromised airways present unique clinically daunting situations to both surgeon and anesthesiologist, who are both charged with the provision of safe, effective preoperative, intraoperative, and postoperative airway management. Among these conditions, odontogenic infections and patients with head and neck trauma, temporomandibular disorders, orofacial tumors, and severe craniofacial anomalies present for surgical treatment by the oral and maxillofacial surgeon.

79. Boynes, S. G., J. Zovko, et al. (2011). "Dental hygienists' evaluation of local anesthesia education and administration in the United States." J Dent Hyg 85(1): 67-74.

PURPOSE: The goal of this project was to investigate the educational experiences and the use of local anesthesia by dental hygiene providers in the U.S. **METHODS:** Approved by the Institutional Review Board at the University of Pittsburgh and undertaken from February to May 2009, this study was designed using a questionnaire-based survey. Using a randomized list obtained via the American Dental Hygienists' Association (ADHA), the survey questionnaires were sent via mail to 1,200 dental hygienists in the U.S. Quantitative evaluations were confined to descriptive statistics including standard summation, an estimation of means and a valid percent for identified variables. **RESULTS:** A total of 432 (n=432) of the 1,200 survey questionnaires were returned, which represents a 36% response rate. The respondents

represented a total of 296 dental hygiene educational programs, and included practice sites that span all 50 states. Findings indicate that the majority of responding dental hygienists perceive a need for the use of this pain control modality in their practice and administer local anesthetic injections. Additionally, the majority of respondents that administer local anesthetic injections reported that they perform local anesthetic administration for cases in which the dentist provides total care. Furthermore, the results revealed that the hygienists that received training in the administration of local anesthesia injections reported a higher rate of educational preparedness in 6 of the 7 educational topics listed in this survey: local anesthesia related topics (local anesthesia administration, local anesthetic pharmacology and local anesthetic complications), basic pharmacology, medical emergency management and special needs care. **CONCLUSION:** This examination parallels the results presented in previous studies, while offering new data relating to local anesthesia administration by dental hygienists. With the majority of dental hygienists reporting a perceived need and the use of this method of pain control, this practice appears to be a significant addition to overall dental care and dental hygiene education.

80. Braga, J. M., M. F. Silva, et al. (2011). "Improvement of mouth opening for a patient with fibrodysplasia ossificans progressiva: a case report." *Spec Care Dentist* 31(6): 220-225.

The aim of this article is to describe the care of a patient with fibrodysplasia ossificans progressiva (FOP) and to provide dentists with a guide for how to safely care for patients with FOP. Treatment improved the patient's limited mouth opening. FOP is a rare autosomal dominant disorder characterized by congenital malformation of the fingers and toes by heterotopic ossification progressiva of the connective tissue. This ossification causes a limitation in osteoradicular mobility, mainly affecting the spine, shoulders, hips, and peripheral joints. The disease can manifest from pregnancy until adulthood, with no greater prevalence associated with race or gender. Although rare, the disease can be easily identified by its clinical features, and diagnosis can be confirmed by a radiographic examination. There is no known effective treatment for this disease. All therapeutic treatment must be conservative to avoid any condition that may cause heterotopic ossification. Guidelines to prevent new ossifications are important for patients with FOP. Dental professionals should be cautious in planning treatment, avoiding anesthesia, especially in the mandible, to prevent ankylosis of the temporo-mandibular joints. The prevention of dental caries is essential to avoid the need for more invasive treatment.

81. Braidy, H. F., P. Singh, et al. (2011). "Safety of deep sedation in an urban oral and maxillofacial surgery training program." *J Oral Maxillofac Surg* 69(8): 2112-2119.

PURPOSE: To study the safety of deep sedation in an urban-based oral maxillofacial surgery training program. **MATERIALS AND METHODS:** Charts of patients undergoing an intravenous sedation from January 2005 through December 2009 were reviewed. Data recorded included age, gender, type of procedures performed, and intravenous medications. Patients were divided in 2 groups depending on whether they received a general anesthetic agent (propofol or ketamine) or not. Anesthesia complications and failures were recorded and categorized. **RESULTS:** In total, 1,167 intravenous sedations were recorded. Eight patients developed adverse reactions, 3 of which required further evaluation in the emergency department. In addition, 7 intravenous sedations needed to be aborted because of patient agitation and combativeness. No deaths or long-term morbidities were reported. **CONCLUSIONS:** The safety of deep sedation in an urban-based oral maxillofacial training program is similar to office-based anesthesia. Sedations failures may be attributed to paradoxical benzodiazepine reactions.

82. Brajdic, D., M. Virag, et al. (2011). "Evaluation of sensitivity of teeth after mandibular fractures." *Int J Oral Maxillofac Surg* 40(3): 266-270.

The sensitivity of teeth anterior to a fracture between the mental and mandibular foramina has been tested and followed up until reinnervation or 3 years has passed. This study assessed the reinnervation period, the number of denervated teeth, and their clinical importance. Fifty patients and 459 teeth were examined. Two hundred and seventy-three teeth were affected and had potentially impaired innervation. Tests after injury showed non-responsive teeth in 81% of affected teeth. Six weeks after injury, 19% of teeth were reinnervated; by 1 year after injury, 92% of initially non-responsive teeth were reinnervated. Most teeth (34%) were reinnervated from 6 weeks to 3 months. All 23/186 initially non-responsive, unaffected, contralateral corresponding teeth were reinnervated within 6 weeks. A year after injury, 95% of incisors, 91% of canines, 94% of premolars, and 82% of molars were reinnervated. Three years after injury, 8% of teeth remain denervated. During the second and third years, no reinnervation occurred, but clinical signs of pulp devitalisation of denervated teeth occurred in 18% or 1% of the initially non-responsive affected teeth. The results revealed the stability of pulp 1 year after injury. Denervated teeth should not be treated if no clinical or radiological signs of devitalisation exist.

83. Brandt, R. G., P. F. Anderson, et al. (2011). "The pulpal anesthetic efficacy of articaine versus lidocaine in dentistry: a meta-analysis." J Am Dent Assoc 142(5): 493-504.

BACKGROUND: The authors evaluated published evidence from controlled clinical trials regarding the efficacy of two local anesthetic solutions in providing successful pulpal anesthesia. METHODS: The authors searched MEDLINE and Embase databases to identify peer-reviewed randomized controlled trials in which researchers directly compared articaine and lidocaine local anesthetic solutions in adult participants. They extracted study characteristics and outcomes data as a basis for meta-analysis. They completed subgroup analyses for both infiltration and mandibular inferior alveolar block anesthetic techniques. RESULTS: Articaine solutions had a probability of achieving anesthetic success superior to that of lidocaine, with an odds ratio of 2.44 (95 percent confidence interval [CI], 1.59-3.76; $P < .0001$). The greater odds ratio for articaine increased to 3.81 (95 percent CI, 2.71-5.36; $P < .00001$) when the authors analyzed only infiltration data. There was weaker, but still significant, evidence of articaine's being superior to lidocaine for mandibular block anesthesia, with an odds ratio of 1.57 (95 percent CI, 1.12-2.21; $P = .009$), and no difference when the authors considered only symptomatic teeth. CLINICAL IMPLICATIONS: Research evidence supports using articaine versus lidocaine for achieving pulpal anesthesia when the infiltration mode of administration is used. It is premature to recommend articaine for mandibular block anesthesia in cases involving irreversible pulpitis.

84. Broadbent, J. M., W. M. Thomson, et al. (2011). "Dental plaque and oral health during the first 32 years of life." J Am Dent Assoc 142(4): 415-426.

BACKGROUND: Studies investigating the role of dental plaque in oral disease have focused primarily on the quantity and quality of plaque at a given point in time. No large-scale epidemiologic research has been conducted regarding the continuity and change in plaque levels across the long term and the association of plaque levels with oral health. METHODS: The authors used data from the Dunedin Multidisciplinary Health and Development Study. Collection of dental plaque data occurred at ages 5, 9, 15, 18, 26 and 32 years by means of the Simplified Oral Hygiene Index. The authors assessed oral health outcomes when participants were aged 32 years. RESULTS: The authors identified three plaque trajectory groups (high, $n = 357$; medium, $n = 450$; and low; $n = 104$) and found substantial, statistically significant differences in both caries and periodontal disease experience among those groups. For example, after the authors controlled for sex, socioeconomic status and dental visiting pattern, they found that participants in the high-plaque-trajectory group lost nearly five times more teeth owing to caries than did those in the low-plaque-trajectory group. CONCLUSIONS: Across the long term, participants in the high-plaque-trajectory group were more likely to experience caries, periodontal disease and subsequent tooth loss than were those in the low- or medium-plaque-trajectory groups, and they experienced all those conditions with greater severity. CLINICAL IMPLICATIONS: Improving oral health requires emphasizing long-term self-care, as well as providing broad public health and health promotion measures that promote and support oral self-care. This study's findings suggest that poor oral hygiene and smoking have a synergistic effect on periodontal disease experience.

85. Brondani, M. and P. E. Park (2011). "Methadone and oral health--a brief review." J Dent Hyg 85(2): 92-98.

PURPOSE: Methadone is a prescription drug used to help individuals overcome withdraws from highly addictive illicit substances, such as heroin, but it has detrimental oral health effects. This manuscript reviews the oral health manifestations of methadone maintenance therapy, and considers its implications to oral care. It hopes to raise awareness among health care professionals, regulating bodies and the population at large about the oral side effects of methadone, the implications for dental treatment and considerations to better enhance the oral health of methadone users. The role of professional teams, particularly dentists and dental hygienists, is illustrated.

86. Brown, J. (2011). "Laughter as medicine." CDS Rev 104(7): 26-27.

87. Brown, L. J. and H. L. Bailit (2011). "Policy implications of assessing the impact of community-based education on dental school finances." J Dent Educ 75(10 Suppl): S54-56.

Dental schools are hard pressed to find the resources to adequately fund their mission of education, research, and service. Over the years, schools have tried to make up for the loss in public funds by increasing student tuition, increasing enrollment, and reducing the growth in faculty and staff salaries and program costs. Unfortunately, these strategies have not solved the financial problems. Declining resources are threatening the future of dental education. Data presented in this report attempt to answer the following question: will community-based dental education restore the fiscal health of dental schools and provide students an equal or better education? By reducing the number

of chairs per student and developing revenue-sharing relationships with community clinics, community-based dental education offers a realistic option for putting dental schools on a solid financial footing.

88. Browning, W. D. and J. P. McCarthy (2012). "A case series: herpes simplex virus as an occupational hazard." *J Esthet Restor Dent* 24(1): 61-66.

STATEMENT OF THE PROBLEM: Herpes labialis infections are common and present a serious risk to the dental team. Purpose of the Study: The purpose is to make dentists aware of the risks involved with treatment of patients with active herpes labialis. In addition, evidence-based risk-management strategies are presented. METHODS AND MATERIALS: The incidence and natural history of herpes simplex virus type 1 (HSV-1) are reviewed. Four previously unreported case histories are presented to illustrate the impact common sequelae of HSV-1 can have on the dental team. The differences between HSV-1 and the blood-borne diseases which are the focus of universal precautions are discussed. In particular, the highly contagious, highly transmissible nature of HSV-1 and its transmission through aerosols are highlighted. Finally, the need to include protection against aerosols in the profession's understanding of universal precautions is noted. RESULTS: The authors suggest limiting the treatment of patients with active lesions to urgent care only, and treating active HSV-1 lesions to reduce time of healing. For four common clinical situations involving HSV-1 infections, evidence-based methods for protecting the dental team and the patient from cross-contamination are also presented. CONCLUSION: While it is clear that the treatment of patients with active herpes labialis lesions increases risk of cross-infection, there are good protocols for controlling this risk. CLINICAL SIGNIFICANCE: By bringing common vectors of cross-infection to light and providing evidence-based protocols for preventing them, this article provides practitioners with positive steps that can be taken for controlling the risk of spreading herpes infections to the dental team.

89. Brukiene, V., J. Aleksejuniene, et al. (2011). "Salivary factors and dental plaque levels in relation to the general health of elderly residents in a long-term care facility: a pilot study." *Spec Care Dentist* 31(1): 27-32.

The goal of this study was to examine salivary factors and formation of dental plaque in elderly subjects who were institutionalized and to relate these factors to general health and medication use. This cross-sectional study consisted of 50 elderly individuals who were institutionalized and 25 healthy young volunteers who served as a reference group. For each subject, salivary flow rates, salivary pH, and buffering capacity were assessed. Baseline Plaque Index and Plaque Formation Rate Index were used as a measure of oral hygiene. Information on each patient's general health and medication use was acquired from the institution. An evaluation of the results of this study suggests that salivary protective qualities and dental plaque levels in the elderly subjects who were institutionalized were worse than in healthy young individuals. An association between the general health of the elderly and salivary flow rate was found.

90. Bryant, C. and C. Boyle (2011). "Sickle cell disease, dentistry and conscious sedation." *Dent Update* 38(7): 486-488, 491-482.

The features of sickle cell disease (SCD) are described. Two case reports of patients treated in a Dental Institute are presented and the dental management of patients with SCD discussed. Since infection is one of the major risk factors for sickle cell crisis, the prevention of oral disease and infection is vital for this group of patients and there is no contraindication to the delivery of dental treatment under local anaesthetic with inhalational sedation if required in the primary care setting. Since patients with sickle cell disease are particularly vulnerable to the effects of periods of hypoxia, which may produce significant morbidity, and because of the additional practical challenges in sedating this group of patients, intravenous sedation should be undertaken in a specialist unit. CLINICAL RELEVANCE: The increasing prevalence of sickle cell disease highlights the importance of dentists practising in multi-cultural communities having an understanding of this condition and its implications on their clinical practice. This will facilitate the safe management of patients with sickle cell disease.

91. Bucci, M. B., M. Aversa, et al. (2011). "Occlusion and temporomandibular disorders: a malpractice case with medical legal considerations." *Minerva Stomatol* 60(1-2): 65-74.

Occlusion and temporomandibular The issue of temporomandibular disorders (TMD) diagnosis and treatment has become a matter of increasing interest in the medical legal field in recent years. The old-fashioned theories based on the occlusal paradigm was proven to be erroneous, and clinicians who still provide irreversible treatments to TMD patients have to be conscious of the potential legal consequences of their behavior. The present paper described an illustrative case report of a patient to whom extensive and irreversible occlusal therapies were performed with the unique aim to provide relief from TMD symptoms. The treatment was unsuccessful and the dental practitioner was

called into cause for a professional liability claim. The clinician was judged guilty of malpractice on the basis of the lack of scientific evidence of the irreversible occlusal approaches to TMD, which were erroneously used and did not give the patient any benefit, thus forcing him to a non necessary financial and biological cost. The failure to satisfy the contract with the patient, which is usually not covered by any insurance company, forced the practitioner to give the money back to the patient. The ethical and legal implications of such case were discussed, with particular focus on the concept that medical legal advices need to satisfy the highest standards of evidence and have to be strictly based on scientific knowledge.

92. Buduneli, E., P. Mantyla, et al. (2011). "Acute myocardial infarction is reflected in salivary matrix metalloproteinase-8 activation level." J Periodontol 82(5): 716-725.

BACKGROUND: The aim of this study is to compare salivary and serum biomarker levels and degrees of matrix metalloproteinase (MMP) activation between patients with acute myocardial infarction (AMI) and systemically healthy patients (non-AMI) with similar periodontal conditions. METHODS: A total of 92 patients (47 AMI and 28 non-AMI patients with gingivitis or periodontitis; and 17 systemically and periodontally healthy patients as a control group) were recruited. Clinical periodontal measurements were recorded; stimulated whole saliva and serum samples were collected. AMI patients were clinically examined within 3 to 4 days after admission to the coronary care unit. Saliva samples were analyzed for levels of MMP-8, MMP-7, and tissue inhibitor of matrix metalloproteinase (TIMP)-1. Serums were tested for MMP-8, MMP-9, TIMP-1, and TIMP-2 levels by immunofluorometric assay and enzyme-linked immunosorbent assay. Molecular forms and degree of activation of salivary MMP-8, MMP-9, and MMP-13 were analyzed by computer-scanned immunoblots. RESULTS: Total salivary MMP-8 assessed by immunofluorometric assay method and immunoblot densitometric units was higher in non-AMI than in AMI patients' saliva, but a significantly higher percentage of AMI patients' MMP-8 was activated polymorphonuclear leukocyte (PMN) type ($P < 0.001$) regardless of periodontal diagnosis. Serum MMP-8, MMP-9, and TIMP-1 levels were significantly higher in AMI (for all markers and all comparisons, $P < 0.05$). Characteristic for AMI was dominance of active PMN MMP-8 in saliva [corrected].

93. Burbelo, P. D., A. Bayat, et al. (2012). "New technologies for studying the complexity of oral diseases." Oral Dis 18(2): 121-126.

Several new technologies are providing useful diagnostic tools and new information related to the pathogenesis of certain oral diseases. In this review, we describe several of these technologies including gene and microRNA arrays, proteomics, and antigen arrays as they relate to the study of Sjogren's syndrome and head and neck cancer. A common theme is the systematic analysis of large-scale inventories of RNAs, proteins, and autoantibody biomarkers revealing information not previously recognized. We also discuss metagenomic approaches that characterize the many different microorganisms present in the oral cavity that may impact oral and human health. Lastly, we describe applications of a new type of antibody-profiling technology termed Luciferase Immunoprecipitation Systems (LIPS), which has a wide dynamic range of detection of both linear and conformational epitopes needed for optimum diagnostics and biomarker discovery. We propose that the information offered by these technologies will enhance our ability to diagnose, treat, and further understand the pathogenesis of multiple oral diseases.

94. Busby, M. (2011). "The 'secret' of success part 4." Dent Update 38(5): 348-350.

Practice success is defined across the four 'dimensions' of oral health, patient satisfaction, job satisfaction and financial profit. It is suggested that the 'secret' of success in dental practice is to make patient (customer) satisfaction the primary focus. Not a very earth shattering or surprising 'secret' perhaps! This is hardly a new idea, and not a concept restricted to dental practice. This principle applies to all businesses. This series of articles reviews evidence from across a broad spectrum of publications: from populist business publications through to refereed scientific papers, this 'secret' seems to be confirmed. The evidence for which aspects of our service are most important in achieving patient satisfaction (and therefore success) is explored. CLINICAL RELEVANCE: Good oral health outcomes for patients are defined as the primary purpose of dental practice and, therefore, an essential dimension of success. The link between positive patient perceptions of general care and their own oral health to practice success is explored.

95. Bush, M. and R. Miller (2011). "The crash of Colgan Air flight 3407: Advanced techniques in victim identification." J Am Dent Assoc 142(12): 1352-1356.

BACKGROUND: Identifying disaster victims by means of dental records is a well-established technique. In cases in which high temperatures are involved, destruction of the structural relationship of the dentition necessitates that adjunctive aids be used in the identification process. Analysis of tooth fragments by means of scanning electron microscopy with

energy dispersive x-ray spectroscopy can reveal evidence of restorative procedures, as well as trace amounts of dental materials remaining on tooth surfaces. In addition, dental materials can be analyzed and identified according to brand, even if the materials have been cremated. CASE DESCRIPTION: The authors describe the identification of three victims from the crash of Colgan Air flight 3407, a commuter airplane flying between Newark, N.J., and Buffalo, N.Y. The crash involved a fire, and a portion of the airplane burned for nearly 11 hours. Dental fragments that had restorative material adhering to them were recovered and analyzed. These fragments contained corroborative information that helped confirm the identity of the victims. CLINICAL IMPLICATIONS: Detailed record keeping is part of clinical practice. The level of detail present in dental records can affect the ability of forensic odontologists to determine the identity of a victim's remains. Documenting the brand names of dental materials used in restorative procedures can make the difference between identifying and not identifying a victim's remains.

96. Buzalaf, M. A. and S. M. Levy (2011). "Fluoride intake of children: considerations for dental caries and dental fluorosis." *Monogr Oral Sci* 22: 1-19.

Caries incidence and prevalence have decreased significantly over the last few decades due to the widespread use of fluoride. However, an increase in the prevalence of dental fluorosis has been reported simultaneously in both fluoridated and non-fluoridated communities. Dental fluorosis occurs due to excessive fluoride intake during the critical period of tooth development. For the permanent maxillary central incisors, the window of maximum susceptibility to the occurrence of fluorosis is the first 3 years of life. Thus, during this time, a close monitoring of fluoride intake must be accomplished in order to avoid dental fluorosis. This review describes the main sources of fluoride intake that have been identified: fluoridated drinking water, fluoride toothpaste, dietary fluoride supplements and infant formulas. Recommendations on how to avoid excessive fluoride intake from these sources are also given.

97. Buzalaf, M. A., J. P. Pessan, et al. (2011). "Mechanisms of action of fluoride for caries control." *Monogr Oral Sci* 22: 97-114.

Fluoride was introduced into dentistry over 70 years ago, and it is now recognized as the main factor responsible for the dramatic decline in caries prevalence that has been observed worldwide. However, excessive fluoride intake during the period of tooth development can cause dental fluorosis. In order that the maximum benefits of fluoride for caries control can be achieved with the minimum risk of side effects, it is necessary to have a profound understanding of the mechanisms by which fluoride promotes caries control. In the 1980s, it was established that fluoride controls caries mainly through its topical effect. Fluoride present in low, sustained concentrations (sub-ppm range) in the oral fluids during an acidic challenge is able to adsorb to the surface of the apatite crystals, inhibiting demineralization. When the pH is re-established, traces of fluoride in solution will make it highly supersaturated with respect to fluorhydroxyapatite, which will speed up the process of remineralization. The mineral formed under the nucleating action of the partially dissolved minerals will then preferentially include fluoride and exclude carbonate, rendering the enamel more resistant to future acidic challenges. Topical fluoride can also provide antimicrobial action. Fluoride concentrations as found in dental plaque have biological activity on critical virulence factors of *S. mutans* in vitro, such as acid production and glucan synthesis, but the in vivo implications of this are still not clear. Evidence also supports fluoride's systemic mechanism of caries inhibition in pit and fissure surfaces of permanent first molars when it is incorporated into these teeth pre-eruptively.

98. Cahlin, B. J. and L. Dahlstrom (2011). "No effect of glucosamine sulfate on osteoarthritis in the temporomandibular joints--a randomized, controlled, short-term study." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 112(6): 760-766.

OBJECTIVE: The aim of this study was to evaluate the clinical effects of oral glucosamine sulfate, compared with placebo, on osteoarthritis in the temporomandibular joints (TMJs). STUDY DESIGN: Fifty-nine patients, consecutive referrals fulfilling the research diagnostic criteria for temporomandibular disorder for TMJ osteoarthritis, confirmed roentgenographically, were randomized to the daily intake of 1,200 mg glucosamine sulfate or identical placebo capsules in this double-blind trial. Pain on visual and verbal rating scales and opening capacity were registered before and after 6 weeks of medication. RESULTS: The signs and symptoms were similar in the groups initially and they were ameliorated over time. No differences in improvement between groups after treatment were indicated. Eight patients in the glucosamine group and 2 in the placebo group stopped the medication prematurely. Gastrointestinal side effects were reported by a total of 10 and 3 patients, respectively. CONCLUSIONS: Oral glucosamine sulfate was not superior to placebo in reducing signs and symptoms of osteoarthritis in the TMJs in this short-term trial.

99. Calderon Pdos, S., L. Tabaquim Mde, et al. (2011). "Effectiveness of cognitive-behavioral therapy and amitriptyline in patients with chronic temporomandibular disorders: a pilot study." *Braz Dent J* 22(5): 415-421.

The aim of this pilot study was to evaluate the effectiveness of cognitive-behavioral therapy (CBT) and use of amitriptyline, a tricyclic antidepressant, in patients with chronic temporomandibular disorders (TMD). Forty-seven women (mean age = 35.4 years old) with chronic TMD were enrolled in the study and divided into 4 groups: amitriptyline; amitriptyline and CBT; placebo and CBT; and placebo only (control). Patients were managed for 7 consecutive weeks. Follow-up evaluations were done at the 1st, 7th and 11th weeks of treatment. The presence and severity of pain, levels of depression, and quality of life and sleep were measured. Data were analyzed using ANOVA, Chi-square and Cochran tests, considering a significance level of 5%. Improvements were found for all factors considered in the intragroup analysis, although no significant differences were detected among groups. However, at the end of the treatment (11 weeks of follow-up), these positive outcomes persisted only for the women treated with amitriptyline and CBT. The obtained results suggest that the combination of amitriptyline and CBT may be effective in reducing pain and depression levels as well as in improving the quality of life and sleep in patients with chronic TMD.

100. Campus, G., M. G. Cagetti, et al. (2011). "Does smoking increase risk for caries? a cross-sectional study in an Italian military academy." *Caries Res* 45(1): 40-46.

BACKGROUND/AIMS: Traditionally, tobacco is considered as part of the military culture. A cross-sectional survey was designed to clarify if smoking habit increases the caries risk in a sample of Italian adults attending a Military Academy. **METHODS:** Clinical examinations including dental caries and presence of bleeding at probing were carried out following WHO criteria. Related socio-behavioural factors were collected. Four calibrated examiners observed 763 subjects (men = 722; 94.6% and women = 41; 5.4%). **RESULTS:** One of the 763 subjects did not declare the smoking status and was excluded from the analysis. Hundred twenty-six (16.5%) subjects claimed to have never smoked, 200 (26.3%) were coded as light smokers and 436 (57.2%) as heavy tobacco users. Statistically significant linear trend across the educational level ($p = 0.03$), self-satisfaction with the appearance of teeth and gums ($p = 0.04$) and dental check-up in the past 6 months ($p = 0.02$) was found among the 3 subgroups. Almost the entire sample showed caries experience (84.1%). Mean DS ranged from 0.6 in the nonsmokers subgroup to 1.1 in the heavy smokers. Differences among means were statistically significant for DS, DMFS and Significant Caries Index ($p = 0.01$, 0.04 and 0.03, respectively). The zero-inflated regression model showed that caries severity was significantly associated with smoking habit ($p = 0.02$), dental check-up in the past 6 months ($p = 0.01$), self-satisfaction with the appearance of teeth and gums ($p < 0.01$) and healthy gums ($p = 0.04$). **CONCLUSION:** Heavy smokers attending a Military Academy showed a higher prevalence of caries, confirming a correlation between the disease and tobacco use.

101. Canham, L. (2011). "The first step in infection control is hand hygiene." *Dent Assist* 80(1): 42-46.

A dental health care worker (DHCW) has an obligation to prevent the spread of health care associated infections. Adhering to proper hand hygiene procedures, selecting appropriate hand hygiene products and the use of gloves are all important elements of infection control. The CDC Guidelines for Hand Hygiene state that improved hand hygiene practices can reduce transmission of pathogenic microorganisms to patients and personnel in health care settings. DHCWs must also protect themselves by recognizing pitfalls such as irritants or allergies that may pose obstacles to proper hand hygiene. Occupational irritants and allergies can be caused by frequent hand washing, exposure to hand hygiene products, exposure to chemicals and shear forces associated with wearing or removing gloves. Since the primary defense against infection and transmission of pathogens is healthy, unbroken skin, DHCWs must take steps to ensure that their skin remains healthy and intact. These steps include evaluating different types of hand hygiene products, lotions and gloves for the best compatibility. If the DHCW sees a breakdown of his or her skin barrier, steps should be taken to determine the cause and remedy. Remedies can include the use of alcohol-based hand sanitizers containing emollients and moisturizers and regular use of a medical grade hand lotion. The bottom line: healthy skin protects you at work and at home. Selection and use of appropriate hand hygiene products, including moisturizers, are an essential part of a dental office infection control program. My coworker lost the use of her thumb for several months due to complications of a staph infection. She was unable to work and found even simple tasks such as closing a button hard to do. Think of how difficult your work would be if something happened to your hands. Injury, irritation or allergies could alter your ability to work or even perform routine tasks. Our hands provide us with the ability to work in clinical dentistry. It makes good sense to protect your hands, your most valuable tools.

102. Carey, B. and L. Stassen (2011). "An audit comparing the discrepancies between a verbal enquiry, a written history, and an electronic medical history questionnaire: a suggested medical

history/social history form for clinical practice." J Ir Dent Assoc 57(1): 54-59.

In everyday practice, dentists are confronted with an increasing number of patients with complex medical problems. There is divergence of opinion among dentists regarding how to obtain a thorough medical/social history. **PURPOSE:** The objective of this audit is to produce a standardised medical history in order to identify the medically compromised patient attending the general dental practitioner. At present in the Dublin Dental School and Hospital, there are three different methods: a verbal enquiry, and a written or an electronic questionnaire. This study was undertaken to identify any differences or discrepancies between each of the three methods in eliciting the medical history, and to determine whether one method was superior to the others. The results are used to recommend the most accurate method for obtaining a thorough health history for practitioners, both in a hospital and a general practice setting. **METHOD:** One hundred and fifty charts within the Dublin Dental School and Hospital of all new patients at a randomly chosen clinic were selected and then audited: 50 charts from the oral and maxillofacial surgery assessment clinics (written pro forma questionnaire), 50 from the oral medicine clinic (consultant verbal enquiry), and 50 from A&E (electronic questionnaire) were compared to determine if an adequate medical history was taken, and to detect differences and discrepancies in patients' medical histories. The records pertained to 91 females and 59 males. The age distribution was 5-87 years for females and 3-85 years for males. The mean age was 45 years for females and 42 years for males. **RESULTS:** The written patient-administered pro forma questionnaire, combined with verbal verification by the clinician/consultant, proved to be the most useful and consistent method for detecting medical problems in dental patients. The consultant verbal enquiry alone showed more inconsistency than the other two methods. Based on these results, a modified questionnaire for use within all departments in the Dental Hospital has been proposed. This may also be suitable for use by general dental practitioners in their practice setting. **CONCLUSION:** It is incumbent on the clinician/dentist to evaluate each patient's general health prior to delivering treatment in order to avoid unnecessary and preventable complications. The use of written patient-administered pro forma questionnaires is beneficial but must be verified by the examining clinician/dentist and assessed at each new visit (6-12 monthly) to be contemporaneous.

103.Carrilho Neto, A., S. De Paula Ramos, et al. (2011). "Oral health status among hospitalized patients." Int J Dent Hyg 9(1): 21-29.

AIM: To investigate into oral health status and its association with health status in hospitalized patients. **METHODS:** A total of 82 patients were examined and 49 (59.7%) patients were men. The patients answered a survey and oral examinations to detect the number of teeth, oral hygiene index, prostheses hygiene, oral lesions, caries, dental plaque index (DPI), gingival inflammation index (GI), gingival bleeding index, periodontitis and periodontal index. **RESULTS:** Oral hygiene was associated with age, but it was not related to physical disability. Difficulty eating was mainly associated with age and tooth loss. All full and partially dentate patients presented dental plaque, 38 (69%) poor oral hygiene, 58 (98.1%) gingival inflammation, 41 (74.5%) periodontal disease and 33 (60%) caries. Oral lesions were detected in 30 (36.5%) and candidiasis (n = 16, 19.6%) was the most frequent mucous lesion. Caries were associated with smoking and poor oral hygiene. Hospital length of stay and age were associated with increased DPI and GI. **CONCLUSIONS:** The majority of hospitalized patients did not present satisfactory oral hygiene. Caries and periodontal diseases are associated with health behaviours. Increased time length at hospital could increase gingival inflammation and dental plaque accumulation.

104.Cavalcanti, R., F. Oreglia, et al. (2011). "The influence of smoking on the survival of dental implants: a 5-year pragmatic multicentre retrospective cohort study of 1727 patients." Eur J Oral Implantol 4(1): 39-45.

PURPOSE: To evaluate the influence of cigarette smoking on the survival of dental implants with a retrospective observational study of 5 years. **MATERIALS AND METHODS:** A total of 1727 consecutively treated patients at four private practices were divided into non-smokers (NS group, 1178 patients) and smokers (S group; 549 patients) according to what they declared prior to implant placement. Non-smokers received 4460 implants and 2583 implant-supported prostheses, whereas smokers received 2260 implants and 1292 implant supported prostheses. Various implant systems and procedures were used. Outcome measures were prosthesis and implant survival. **RESULTS:** Over the 5 years after loading, 159 (17%) non-smokers and 91 (13%) smokers were lost to follow-up; 20 (0.9%) prostheses could not be placed or failed in 15 non-smokers and 12 prostheses (1.2%) could not be placed or failed in 12 smokers. One hundred and twelve (2.9%) implants failed in 105 non-smokers and 107 (5.5%) implants failed in 75 smokers. Most of the implant failures (90%) occurred before implant loading. Fitting a logistic regression for early implant failures and total implant failures, taking into account the clustering of implants in patients, there were no statistically significant differences for prosthesis failures (P value not calculated as too few failures) and early implant failures between the two groups (P = 0.13). However, when considering all implant failures up to 5 years after loading, significantly more

failures (5.5%) occurred in smokers compared with non-smokers (2.9%) (OR 1.72; 95% CI 1.20 to 2.50; P = 0.003). CONCLUSIONS: Due to the retrospective nature of this study, conclusions have to be interpreted with caution. Five years after loading, smokers experienced almost twice as many implant failures compared with non-smokers. Non-statistically significant trends in favour of non-smokers were observed for early implant failures and prosthesis failures.

105.Cella, L., A. Oppici, et al. (2011). "Autologous bone marrow stem cell intralesional transplantation repairing bisphosphonate related osteonecrosis of the jaw." Head Face Med 7: 16.

PURPOSE: Bisphosphonate - related osteonecrosis of the JAW (BRONJ) is a well known side effect of bisphosphonate therapies in oncologic and non oncologic patients. Since to date no definitive consensus has been reached on the treatment of BRONJ, novel strategies for the prevention, risk reduction and treatment need to be developed. We report a 75 year old woman with stage 3 BRONJ secondary to alendronate and pamidronate treatment of osteoporosis. The patient was unresponsive to recommended treatment of the disease, and her BRONJ was worsening. Since bone marrow stem cells are know as being multipotent and exhibit the potential for differentiation into different cells/tissue lineages, including cartilage, bone and other tissue, we performed autologous bone marrow stem cell transplantation into the BRONJ lesion of the patient. METHODS: Under local anesthesia a volume of 75 ml of bone marrow were harvested from the posterior superior iliac crest by aspiration into heparinized syringes. The cell suspension was concentrated, using Ficoll - Hypaque(R) centrifugation procedures, in a final volume of 6 ml. Before the injection of stem cells into the osteonecrosis, the patient underwent surgical toilet, local anesthesia was done and spongostan was applied as a carrier of stem cells suspension in the bone cavity, then 4 ml of stem cells suspension and 1 ml of patient's activated platelet-rich plasma were injected in the lesion of BRONJ. RESULTS: A week later the residual spongostan was removed and two weeks later resolution of symptoms was obtained. Then the lesion improved with progressive superficialization of the mucosal layer and CT scan, performed 15 months later, shows improvement also of bone via concentric ossification: so complete healing of BRONJ (stage 0) was obtained in our patient, and 30 months later the patient is well and without signs of BRONJ. CONCLUSION: To our knowledge this is the first case of BRONJ successfully treated with autologous stem cells transplantation with a complete response.

106.Chainani-Wu, N., E. Madden, et al. (2011). "A case-control study of burning mouth syndrome and sleep dysfunction." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 112(2): 203-208.

OBJECTIVE: The objective of this study was to evaluate whether sleep dysfunction is a risk factor for burning mouth syndrome (BMS). STUDY DESIGN: An age- and sex-matched case-control study of patients with BMS and controls with various oral conditions was conducted. A numerical rating scale for oral discomfort and the sleep scale from the medical outcomes study were used for measurements, and statistical analyses included use of logistic regression models. RESULTS: The odds ratios for lowest versus highest quartiles were sleep disturbance (OR = 9.7, P = .0095), sleep problems index (SLP)6 (OR = 7.5, P = .032), and SLP9 (OR = 27, P = .0058), which remained significant after controlling for age and number of sedating medications. CONCLUSIONS: Findings from this cross-sectional study, although unable to establish a causal relationship, demonstrate that patients with BMS report a greater degree of sleep problems as compared with controls, and suggest that sleep dysfunction may be a risk factor for BMS and a possible target for treatment.

107.Chalmers, J. M., R. A. Kuthy, et al. (2011). "Dental utilization by adult Medicaid enrollees who have indicators of intellectual and developmental disabilities (IDD)." Spec Care Dentist 31(1): 18-26.

The purpose of this study was to determine dental utilization and type of dental services for Medicaid-enrolled adults who had been identified as having intellectual and developmental disabilities (IDD). Using Iowa claims data, the authors identified adults who met any of five IDD criteria for inclusion during calendar year 2005. Service utilization rates, including use of preventive dental, routine restorative, and complex restorative services, were determined. Approximately 60% of adults with IDD had at least one dental visit in 2005. Among adults with at least one dental visit, 83% received a preventive service, 31% a routine restorative service, and 16% a complex dental service. Those age 65 and older had fewer preventive dental services than other age groups. In Iowa, dental utilization for adults 22-64 years of age with IDD was reasonably high (64%) in 2005, but individuals over age 65 had lower utilization (45%).

108.Chambers, D. W. (2011). "How to make moral choices." J Am Coll Dent 78(4): 56-63.

Moral choice is committing to act for what one believes is right and good. It is less about what we know than about defining who we are. Three cases typical of those used in the principles or dilemmas approach to teaching ethics are presented. But they are analyzed using an alternative approach based on seven moral choice heuristics--approaches proven to increase the likelihood of locating the best course of action. The approaches suggested for analyzing moral

choice situations include: (a) identify the outcomes of available alternative courses of action; (b) rule out strategies that involve deception, coercion, reneging on promises, collusion, and contempt for others; (c) be authentic (do not deceive yourself); (d) relate to others on a human basis; (e) downplay rational justifications; (f) match the solution to the problem, not the other way around; (g) execute on the best solution, do not hold out for the perfect one; and (h) take action to improve the choice after it has been made.

109. Chandwani, B., C. Ceneviz, et al. (2011). "Incidence of bruxism in TMD population." N Y State Dent J 77(5): 54-57.

The objective of the study presented here was to examine the incidence of bruxism in patients suffering from temporomandibular disorders. Two cohorts of patients suffering from temporomandibular disorders were evaluated. One group, composed of 163 patients, was asked specifically about the occurrence of bruxism, while the other group, composed of 200 patients, was not specifically asked about bruxism (self-reporting). The incidence of bruxism was only 20.5% for the group that only self-reported bruxism, while the incidence was 65% when asked specifically about bruxism. It is critical to ask specifically about bruxism. Patients are more likely to report bruxism when asked specifically about it. It is important to incorporate this as part of a TMD evaluation.

110. Chang, J. and K. S. Seo (2011). "Multiple bonded restorations in a patient with severe mental disability: a case report." Oper Dent 36(1): 104-111.

Dental treatment for patients with special needs may require general anesthesia, if these patients are unable or unwilling to cooperate. To administer a restorative treatment in a limited timeframe requires an interdisciplinary approach adapted to the individual. This case report describes a comprehensive restorative procedure in a patient with severe mental disability who has serious dental caries. Direct resin composites were used to reconstruct most of the damaged dentition. In the 22-month follow-up conducted by the authors, they found one restoration failure, several primary caries lesions and one secondary-caries lesion. Every other restoration remained stable, despite limited postoperative care.

111. Charles, C. A., J. A. McGuire, et al. (2011). "Comparative efficacy of two daily use mouthrinses: randomized clinical trial using an experimental gingivitis model." Braz Oral Res 25(4): 338-344.

Two antimicrobial agents, a fixed combination of essential oils (EOs) and 0.07% cetylpyridinium chloride (CPC) are found in commercially available mouthrinses, Listerine(R) Antiseptic and Crest(R) Pro Health™, respectively. Both mouthrinses have been shown to control dental plaque and gingivitis in short and longer term studies. The aim of this study was to determine the comparative effectiveness of these two mouthrinses using a 2-week experimental gingivitis model. Qualified subjects were randomly assigned to one of three mouthrinse groups: a fixed combination of EOs, 0.07% CPC, or negative control (C) rinse. Following baseline clinical assessments and a dental prophylaxis, subjects began a two-week period in which they rinsed twice daily with their assigned rinse and abstained from any mechanical oral hygiene procedures or other oral care products. Subjects were reassessed at the end of the two-week period. One hundred and forty-seven subjects were randomized and 142 completed this study. After two weeks use, the EOs rinse was superior ($p < 0.011$) to the CPC rinse in inhibiting the development of gingivitis, plaque, and bleeding, with 9.4% and 6.6% reductions compared to CPC for gingivitis and plaque, respectively. Both rinses were superior to the negative control rinse ($p < 0.001$). This study demonstrates that the essential oil-containing mouthrinse has superior antiplaque/antigingivitis effectiveness compared to the 0.07% CPC-containing mouthrinse without mechanical oral hygiene influence.

112. Chavez, E. M., P. E. Subar, et al. (2011). "Perceptions of predoctoral dental education and practice patterns in special care dentistry." J Dent Educ 75(6): 726-732.

The objective of this research project was to compare alumni perceptions of predoctoral dental education in the care and management of patients with complex needs to alumni practice patterns. Alumni from the University of the Pacific Arthur A. Dugoni School of Dentistry who graduated from 1997 to 2007 were surveyed regarding perceptions of their predoctoral education in the care of patients categorized and defined as medically compromised, frail elders, and developmentally disabled, as well as their practice patterns. Perceptions were rated on a Likert scale. Regression analyses were utilized. Three primary relationships were identified: 1) positive relationships emerged between perceptions of educational value, as students and practitioners, of the training they received compared to percentages of medically compromised patients they currently treat ($p < 0.05$); 2) after practice experience, 2003-07 graduates reported significantly higher value of their education in this area compared to 1997-2002 graduates; and 3) alumni who reported treating more patients with complex needs during school reported treating significantly more of these

patients in practice ($p < 0.05$). We conclude that alumni who reported educational experiences as more valuable treat more patients with complex needs compared to those who valued them less. Alumni who reported having more opportunities to treat patients with complex needs as students treat a higher percentage of those patients than those reporting fewer. Even positive perceptions may underestimate the value of educational experiences as they relate to future practice.

113. Chen, C. T., C. H. Feng, et al. (2011). "Functional outcomes following surgical treatment of bilateral mandibular condylar fractures." *Int J Oral Maxillofac Surg* 40(1): 38-44.

Debate continues regarding unilateral or bilateral treatment for mandibular condylar fractures. This retrospective study evaluates the functional outcomes of bilateral condylar process fractures after surgical intervention. From May 1994 to December 2004, 51 adult patients with bilateral mandibular condylar process fractures were studied. There were 33 cases of bilateral condylar fractures (type I); 12 cases of condylar-subcondylar fractures (type II); and six cases of bilateral subcondylar fractures (type III). All patients underwent open reduction and internal fixation. Four patients had chin deviation, six had malocclusion, three had poor chewing function and eight had limited mouth opening. Type I patients had a significantly higher incidence of limited mouth opening ($P=0.039$) and associated maxillary fractures ($n=12$) and psychiatric disease ($n=6$) which yielded significantly poor functional outcomes. Complications included transient facial paresis ($n=4$), fracture and loosening of postoperative plates ($n=3$) and surgical wound infections ($n=2$). Open reduction with rigid fixation for bilateral condylar fractures provided satisfactory functional outcomes in this study. Concomitant maxillary fractures and underlying psychiatric problems are poor outcome factors. Aggressive rehabilitation in the first 9 months is important for early functional recovery.

114. Chen, X. and J. J. Clark (2011). "Tooth loss patterns in older adults with special needs: a Minnesota cohort." *Int J Oral Sci* 3(1): 27-33.

This study was conducted to detail tooth loss patterns in older adults with special needs. A total of 491 elderly subjects with special needs were retrospectively selected and followed during 10/1999-12/2006. Medical, dental, cognitive, and functional assessments were abstracted from dental records and used to predict risk of tooth loss. Tooth loss events were recorded for subjects during follow-up. Chi-squared tests were used to study the association between tooth loss and the selected risk factors. Logistic, poisson, and negative binomial regressions were developed to study tooth loss patterns. Overall, 27% of the subjects lost at least one tooth during follow-up. Fourteen subjects had tooth loss events per 100 person-years. Tooth loss pattern did not differ significantly among different special-needs subgroups (i.e. community-dwelling vs. long-term care, physically disabled vs. functionally independent). Special-needs subjects with three or more active dental conditions at arrival had more than twice the risk of losing teeth than those without any existing conditions. After adjusting other factors, the number of carious teeth or retained roots at arrival was a significant predictor of tooth loss for older adults with special needs ($P = 0.001$). These findings indicate that appropriately managing active caries and associated conditions is important to prevent tooth loss for older adults with special needs.

115. Cheng, A., R. Kunchur, et al. (2011). "Management challenges in psychiatric patients with severe mandibular pain: a case report." *Aust Dent J* 56(1): 82-84.

A 68-year-old man was admitted to the psychiatric unit of a major hospital as he was threatening self-harm due to uncontrolled left mandibular pain. Although he had significant psychiatric issues, psychiatric treatment did not help him. Further review at three weeks post-admission showed that he had had many months of unsuccessful dental treatment and this had triggered his psychiatric crisis. Multidisciplinary investigation and communication showed that he had trigeminal neuralgia secondary to vascular changes in his temporal lobe. He responded well to explanation and anti-neuralgic medication. Simple guidelines on how dental practitioners can cope with such patients are presented.

116. Chibinski, A. C., M. T. Pochapski, et al. (2011). "Clinical evaluation of chlorhexidine for the control of dental biofilm in children with special needs." *Community Dent Health* 28(3): 222-226.

OBJECTIVE: The aim of the present study was to assess two vehicles and forms of the in-home administration of chlorhexidine for the control of dental biofilm in children with special needs. **BASIC RESEARCH DESIGN:** Twenty-nine children aged seven to 12 years (mixed dentition phase) participated in the study. A double-blind, placebo-controlled, cross-over clinical trial was carried out with the following treatment groups: 1 - 0.12% chlorhexidine gel (CG); 2 - placebo gel (PG); 3 - 0.12% chlorhexidine spray (CS); 4 - placebo spray (PS). Ten-day experiment periods were separated by 15-day washout intervals. **MAIN OUTCOME MEASURES:** The parameters evaluated were plaque, gingival bleeding, and preferences of parents/caregivers. **RESULTS:** The initial conditions were similar in each phase of the experiment (p

> 0.05). The treatments with chlorhexidine (gel and spray) achieved a significant reduction ($p < 0.0001$) in plaque and bleeding. The placebo treatments did not achieve significant differences ($p > 0.05$). The parents/caregivers preferred the administration of chlorhexidine in spray form. CONCLUSIONS: The topical administration of chlorhexidine associated to tooth brushing led to a reduction in dental biofilm and gingival bleeding in children with special needs. Administration in spray form proved easier and was preferred by parents/caregivers.

117. Choi, B. J., S. Park, et al. (2011). "Effect of lower third molars on the incidence of mandibular angle and condylar fractures." J Craniofac Surg 22(4): 1521-1525.

PURPOSE: Numerous previous studies already have proven that mandibles with a third molar are significantly more susceptible to angle fracture by external force. Similarly, other data suggest that the absence of a third molar increases the risk of condylar fracture, while concurrently decreasing the risk of angular fracture. We attempt to characterize the effect of a third molar on the incidence of mandibular angle and condylar fractures. METHODS: This retrospective study reviews data from 385 patients, all of whom were seen in our clinics between February 2006 and November 2009. All data were collected from clinical examination notes and panoramic radiographs, with third-molar state evaluated by the Pell and Gregory classification system. RESULTS: Our results mirror those of previous studies. The incidence of mandibular angle fracture was significantly greater on sides with a third molar, whereas the condylar fracture rate significantly increased in mandibles lacking a third molar or without a fully erupted third molar. The rate of symphysis and mandibular angle fracture was also high in cases of multiple comorbid fractures. CONCLUSIONS: Both the presence and the state of the lower third molar affect the risk of future mandibular angle and condylar fracture.

118. Chu, C. H., A. Lam, et al. (2011). "Dentin hypersensitivity and its management." Gen Dent 59(2): 115-122; quiz 123-114.

Dentin hypersensitivity is a common patient complaint that is more prevalent than the profession realizes. It is important for dentists to diagnose dentin hypersensitivity by exclusion and provide appropriate treatment recommendations for patients. Various treatment methods have been proposed but no universally accepted desensitizing agent or treatment has been identified. When a patient has symptoms that can be attributed to dentin hypersensitivity, a thorough clinical examination should be carried out to rule out other likely causes prior to diagnosis and treatment. Depending on the identified cause, a combination of individualized instructions on proper oral health behaviors, use of at-home products, and professional treatment may be required to manage the problem.

119. Coleman, M., A. McCormick, et al. (2011). "The incidence of periodontal defects distal to the maxillary second molar after impacted third molar extraction." J Oral Maxillofac Surg 69(2): 319-321.

PURPOSE: This study assessed the incidence of periodontal defects on the distal aspect of maxillary second molars after extraction of impacted maxillary third molars. PATIENTS AND METHODS: Subjects enrolled in this institutional review board-approved prospective study consisted of healthy young patients having extraction of at least 1 asymptomatic impacted maxillary third molar adjacent to a second molar. Preoperative periodontal probing data were collected from 4 sites (midbuccal, distobuccal, midpalatal, and distopalatal) on each adjacent second molar, and a similar probing examination was performed at a mean of 6 months postoperatively. All subjects were treated under general anesthesia or conscious sedation by upper-level residents in the outpatient clinic. RESULTS: Twenty subjects with a total of 38 impacted maxillary third molars were treated. There were 9 male subjects (45%) and 11 female subjects (55%), with a mean age of 17 years (range, 14-22 years). The mean follow-up interval was 6 months, with a range of 3 to 15 months. Of the 152 probing sites measured, 92 (61%) decreased, 56 (37%) remained unchanged, and only 4 (2.6%) increased. A decrease in probing depth of 1 mm was found in 35 (23%) of the sites, a decrease of 2 mm was seen in 32 (21%), and 25 (16%) decreased by 3 mm or more. Of the 152 sites probed, 4 (2.6%) increased by 1 or 2 mm. CONCLUSION: Extraction of the impacted maxillary third molar does not result in significant periodontal defects on the distal aspect of the adjacent second molar, and in many cases it results in an improvement of the probing depths on these teeth.

120. Conley, R. S. (2011). "Evidence for dental and dental specialty treatment of obstructive sleep apnoea. Part 1: the adult OSA patient and Part 2: the paediatric and adolescent patient." J Oral Rehabil 38(2): 136-156.

Until recently, obstructive sleep apnoea was a largely unknown condition. Because of the well-publicised death of some high-profile people resulting from untreated obstructive sleep apnoea, now mostly everyone has heard of the condition. Following diagnosis, several medical treatment modalities are available to patients. However, the role that dentistry and its various specialties can play in successful treatment for obstructive sleep apnoea should not be overlooked. The common causes for adult and paediatric obstructive sleep apnoea will be presented as well as a review

of the more successful forms of dental treatment. Finally, a summary of the current evidence regarding obstructive sleep apnoea treatment will be presented.

121. Costa, J. R., M. A. Torriani, et al. (2011). "Sclerotherapy for vascular malformations in the oral and maxillofacial region: treatment and follow-up of 66 lesions." J Oral Maxillofac Surg 69(6): e88-92.

PURPOSE: The aim of the present study was to relate the use of 5% monoethanolamine oleate in sclerotherapy for vascular malformations and to suggest a protocol for its use. **PATIENTS AND METHODS:** A total of 53 patients with 66 vascular malformation lesions were treated with an intralesional injection of 5% monoethanolamine oleate at 0.1 mL/cm of lesion with at least a 15-day interval and as many as 4 applications. A descriptive statistical analysis was performed using SigmaPlot, version 9.0, software. **RESULTS:** The treatment with the protocol suggested was effective in 65 cases, and in 1 case, surgical intervention was required. **CONCLUSIONS:** Sclerotherapy was effective in the treatment of vascular malformations, and the method chosen was adequate for lesion resolution without complications.

122. Cowart, B. J. (2011). "Taste dysfunction: a practical guide for oral medicine." Oral Dis 17(1): 2-6.

Dental practitioners are often the first clinicians to be presented with complaints about changes in taste. This raises a problem in terms of appropriate evaluative response. It is a difficult issue both because of the common confusion between smell and taste problems (with smell being the more vulnerable sense and contributing substantially to the flavor of food that most patients equate with 'taste'), and because of the lack of widely accepted standardized techniques to assess true taste function. This brief review provides a summary of some of the problems associated with assessing taste function in a clinical setting and of patient management options available to the practitioner of oral medicine.

123. Cox, I. C., J. B. Krikken, et al. (2011). "Influence of parental presence on the child's perception of, and behaviour, during dental treatment." Eur Arch Paediatr Dent 12(4): 200-204.

AIM: To analyse the influence of the presence of the parent in the dental operatory on their child's behaviour during dental treatment. **METHODS:** This study was a randomised controlled trial performed in a secondary paediatric dental care clinic. The child's perception of the dental treatment and its behaviour during treatment according to the parent and dentist were compared with parental presence in the operatory as independent variable. Age and dental anxiety were also calculated as co-variable. The child's perception of the treatment was assessed using the Wong-Baker Faces Rating Scale. The behaviour of the child according to parent and dentist was measured using Venham's (modified) clinical rating of anxiety and cooperative behaviour. Statistical analysis was performed using Mann Whitney U tests and Independent Samples T Test. **RESULTS:** 90 children participated (50% girls, mean age 6.21 years old, SD +/- 1.56). During the habituation session child's behaviour was better according to the dentist when the parents were not present in the operatory during treatment ($p < 0.01$). There were no significant differences in a child's perception of the treatment in relation to parental presence or absence. Dentally anxious children behaved better according to the parent (treatment session 2) and the dentist (habituation session and treatment session 2) when the parent was not present in the operatory ($p < 0.05$). **CONCLUSION:** Relying on a child's perception of dental treatment, a made no difference whether the child was treated with or without the parent(s) in the dental operatory. For anxious children it was mainly the dentist who was aware of the disadvantages of the parental presence.

124. Cummings, D. R., D. D. Yamashita, et al. (2011). "Complications of local anesthesia used in oral and maxillofacial surgery." Oral Maxillofac Surg Clin North Am 23(3): 369-377.

Local anesthetics are used routinely in oral and maxillofacial surgery. Local anesthetics are safe and effective drugs but do have risks that practitioners need to be aware of. This article reviews the complications of local anesthesia. A brief history is provided and the regional and systemic complications that can arise from using local anesthesia are discussed. These complications include paresthesia, ocular complications, allergies, toxicity, and methemoglobinemia. Understanding the risks involved with local anesthesia decreases the chances of adverse events occurring and ultimately leads to improved patient care.

125. Cummins, D. (2011). "Advances in the clinical management of dentin hypersensitivity: a review of recent evidence for the efficacy of dentifrices in providing instant and lasting relief." J Clin Dent 22(4): 100-107.

This paper summarizes the current state of knowledge of the epidemiology, etiology, and clinical management of dentin hypersensitivity, with special emphasis on the evidence for the effectiveness of commonly available sensitivity relief toothpastes. It reviews the scientific and clinical research validating the effectiveness of a recently introduced toothpaste containing 8.0% arginine and calcium carbonate, known as Pro-Argin technology, including clinical evidence

for the superior efficacy of this toothpaste versus potassium-based sensitivity relief toothpastes. It critiques recently published studies on a strontium-based sensitivity relief toothpaste. Finally, it summarizes new clinical data from three parallel, randomized, head-to-head studies comparing the efficacy of a toothpaste containing 8.0% arginine and calcium carbonate (positive control) to a strontium-based sensitivity relief toothpaste (test) in delivering superior instant and lasting sensitivity relief. The results of these new clinical studies clearly support the conclusions that 1) a toothpaste containing 8.0% arginine and calcium carbonate provides superior efficacy with respect to both immediate and lasting relief of dentin hypersensitivity compared to a toothpaste containing 8% strontium acetate, and 2) a toothpaste containing 8% strontium acetate is no more effective in providing immediate relief of dentin hypersensitivity than a regular fluoride toothpaste.

126. Cummins, D. (2011). "Clinical evidence for the superior efficacy of a dentifrice containing 8.0% arginine and calcium carbonate in providing instant and lasting relief of dentin hypersensitivity." J Clin Dent 22(4): 97-99.

This paper briefly discusses recent scientific and clinical research validating the effectiveness of a toothpaste containing 8.0% arginine and calcium carbonate, known as Pro-Argin technology, including clinical evidence for the superior efficacy of this toothpaste versus a potassium-based desensitizing toothpaste. It also introduces new clinical data which prove that a toothpaste containing 8.0% arginine and calcium carbonate delivers superior instant and lasting relief of dentin hypersensitivity compared to a toothpaste containing 8% strontium acetate.

127. Curley, A. W. (2011). "The law and dentoalveolar complications: trends and controversies." Oral Maxillofac Surg Clin North Am 23(3): 475-484.

Complications are an inherent part of oral and maxillofacial surgery. A risk in surgery is a complication that occurs despite treatment that meets or exceeds the professional standard of care. When treatment fails to meet the standard of care, a complication may be considered the result of malpractice, resulting in claims for compensation. Whether a surgical procedure meets the standard of care is determined by expert witnesses evaluating the evidence. This article reviews legal issues and cases where complications have resulted in claims of malpractice. Recommendations for patient communication and documentation to reduce or eliminate such claims are presented.

128. da Fonseca, M. A. (2011). "Osteoporosis: an increasing concern in pediatric dentistry." Pediatr Dent 33(3): 241-245.

Increasing numbers of children are being affected by low bone density and osteoporosis. Bone fractures are the main reason for hospitalization between 10 and 14 years of age and, over the past 3 decades, there has been an increase in the incidence of fractures in children. Childhood factors such as lifestyle, diet, chronic illness, and medications have a vital short-term impact on bone health and a long-term effect on the achievement of peak bone mass, with the potential for morbidity in adulthood. The primary forms of osteoporosis consist of rare inherited conditions, but the secondary forms are becoming more common given that chronically ill children are surviving longer. This subject should be of interest to pediatric dentists, because low mineral density and osteoporosis, together with drugs used to treat them (eg, bisphosphonates), may cause adverse effects in the oral cavity. Furthermore, the pediatric dentist is an important health care professional to counsel patients about healthy lifestyles that can help prevent the condition from an early age.

129. da Fonseca, M. A. and P. Casamassimo (2011). "Old drugs, new uses." Pediatr Dent 33(1): 67-74.

Advances in pediatric health care have prolonged lives and improved the quality of life for children and adolescents. These advances include not only high-tech devices and new medications but also re-application of available medications to take advantage of unexpected benefits which may not have been known previously or even side effects that can have therapeutic value for diseases and conditions refractory to other treatment. This review describes new uses for anti-epileptic medications, thalidomide, intravenous immunoglobulin, hydroxyurea, methotrexate, botulinum toxin, bisphosphonates, and aspirin in the medical care of children. Methods of action and concerns for the pediatric dentist are described for children benefiting from these new applications.

130. da Silva, L. A., M. J. Teixeira, et al. (2011). "Xerostomia and salivary flow in patients with orofacial pain compared with controls." Arch Oral Biol 56(10): 1142-1147.

OBJECTIVES: Pain in the orofacial region is frequently reported by patients in dental and medical offices. Facial pain, headache, masticatory abnormalities and other complaints often become chronic and may be associated with local disturbances, such as xerostomia and teeth abnormalities. The objective of this study was to investigate salivary flow

and xerostomia in patients with orofacial pain. DESIGN: This was a case-control study; we evaluated 82 patients with chronic orofacial pain compared with 56 healthy subjects using a Clinical Pain Questionnaire (pain characteristics, duration, intensity and descriptors), complete dental examination (including static and dynamic evaluation of the jaw) and a Xerostomia Inventory. The salivary flow was quantitatively evaluated. Data was compared through Pearson's chi-square, Fisher's exact, analysis of variance (ANOVA) 1 factor and Mann-Whitney tests. RESULTS: Patients often had temporomandibular disorder (TMD) ($P=0.001$) and pain during facial ($P<0.001$) and neck palpation ($P=0.002$). There were no differences in dental examination or other structural aspects of the jaw between the groups. There were more complaints associated with xerostomia in the study group, including burning sensation in the oral mucosa ($P=0.003$), in the throat ($P=0.035$) and in the stomach ($P=0.050$). Patients had lower salivary flow ($P=0.008$). CONCLUSIONS: Orofacial pain patients need to be evaluated with regard to their salivary function, which was often found abnormal in this sample and may have contributed to the complaints of these patients. Assessing salivary flow and xerostomia may help in the treatment of chronic orofacial pain.

131. Danaheer, R. J., C. Wang, et al. (2011). "Antiviral effects of blackberry extract against herpes simplex virus type 1." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 112(3): e31-35.

OBJECTIVE: The aim of this study was to evaluate antiviral properties of blackberry extract against herpes simplex virus type 1 (HSV-1) in vitro. STUDY DESIGN: HSV-infected oral epithelial (OKF6) cells and cell-free virus suspensions were treated with blackberry extract (2.24-1,400 $\mu\text{g}/\text{mL}$), and virus yield and infectivity were quantified by direct plaque assay. RESULTS: Blackberry extract $\geq 56 \mu\text{g}/\text{mL}$ inhibited HSV-1 replication in oral epithelial cells by $>99\%$ ($P < .005$). Concentrations $\geq 280 \mu\text{g}/\text{mL}$ were antiviral when the extract was added after virus adsorption and entry. Exposure of cell-free virus to $\geq 280 \mu\text{g}/\text{mL}$ blackberry extract for 15 minutes at room temperature was virucidal ($P = .0002$). The virucidal effects were not due to pH changes at concentrations up to 1,500 $\mu\text{g}/\text{mL}$. CONCLUSIONS: Blackberry extract inhibited the early stages of HSV-1 replication and had potent virucidal activity. These properties suggest that this natural fruit extract could provide advantage as a topical prophylactic/therapeutic agent for HSV infections.

132. Das, M., V. Upadhyaya, et al. (2011). "Periodontal treatment needs in diabetic and non-diabetic individuals: a case-control study." *Indian J Dent Res* 22(2): 291-294.

AIM: Diabetes mellitus is a chronic metabolic disorder of the carbohydrate, protein and fat metabolism, resulting in increased blood glucose levels. Various complications of diabetes have been described with periodontitis being added as the sixth complication of diabetes mellitus. The aim of this study was to assess periodontal status and treatment needs (TN) in diabetic patients and to compare the findings between diabetic and non-diabetic individuals using community periodontal index (CPI). MATERIALS AND METHODS: We evaluated the periodontal status and periodontal TN in diabetic and non-diabetic individuals in Guwahati, Assam. A total of 459 (223 diabetic and 236 non-diabetic) individuals were assessed. A person was considered to be diabetic when his blood glucose levels were above 140 mg/dl under fasting condition and 200 mg/dl 2 hours postprandially. Periodontal status was assessed using CPI. RESULTS: Periodontal destruction was found to be increased in diabetic individuals, with periodontal destruction increasing with increased blood glucose levels. The necessity of complex periodontal treatment also increased with increasing blood glucose levels. CONCLUSIONS: Individuals with diabetes are more prone to periodontal destruction, and hence, regular periodontal screening and treatment is essential in these individuals.

133. Davies, J. G., K. I. Wilson, et al. (2011). "A joint approach to treating dental phobia: a re-evaluation of a collaboration between community dental services and specialist psychotherapy services ten years on." *Br Dent J* 211(4): 159-162.

OBJECTIVE: To audit the records of a group of patients who had previously benefited from cognitive behavioural therapy (CBT) for dental phobia. AIM: To ascertain if they had returned to the use of intravenous (IV) sedation to facilitate dental treatment. Ten years ago these patients were routinely requiring IV sedation to facilitate dental treatment due to severe dental phobia. METHOD: Sixty patients entered the original pilot project. Of those, 30 were offered CBT and 21 attended. Twenty of those patients (95.2%) were subsequently able to have dental treatment without IV sedation. In this follow-up study the electronic records of 19 of the 20 patients who had originally been successful with CBT were re-audited. Our purpose was to see if there was any record of subsequent IV sedation administration in the intervening ten years. RESULTS: Of the 19 successful CBT patients available to follow-up, 100% had not received IV sedation since the study ten years ago. This may suggest the initial benefit of CBT has endured over the ten-year period. CONCLUSION: This study indicates that the use of CBT for patients with dental phobia proves beneficial not only in the initial treatment but that the benefits may endure over time. This results in a significant reduction in health risks to the patient from repeated IV sedation. It may also translate into significant financial savings

for dental care providers. Our evidence for CBT as treatment for dental phobia suggests dental services should be implementing this approach now rather than pursuing further research.

134. de Almeida Neves, A., E. Coutinho, et al. (2011). "Current concepts and techniques for caries excavation and adhesion to residual dentin." *J Adhes Dent* 13(1): 7-22.

The advent of "Adhesive Dentistry" has simplified the guidelines for cavity preparation enormously. The design and extent of the current preparations are basically defined by the extent and shape of the caries lesion, potentially slightly extended by bevelling the cavity margins in order to meet the modern concept of minimally invasive dentistry. New caries excavation techniques have been introduced, such as the use of plastic and ceramic burs, improved caries-disclosing dyes, enzymatic caries-dissolving agents, caries-selective sono/air abrasion and laser ablation. They all aim to remove or help remove caries-infected tissue as selectively as possible, while being minimally invasive through maximum preservation of caries-affected tissue. Each technique entails a specific caries-removal endpoint and produces residual dentin substrates of different natures and thus different receptiveness for adhesive procedures. This paper reviews the newest developments in caries excavation techniques and their effect on the remaining dentin tissue with regard to its bonding receptiveness.

135. de Amorim Lde, F., C. Estrela, et al. (2011). "Effects of traumatic dental injuries to primary teeth on permanent teeth--a clinical follow-up study." *Dent Traumatol* 27(2): 117-121.

AIM: This study evaluated the prevalence of developmental sequelae to permanent teeth (DSP) after traumatic dental injuries to primary teeth (TDI-1) and their association with age, gender, type of injury, recurrence of injury and post-traumatic damage to primary teeth. MATERIALS AND METHODS: Dental records of 2725 children treated from February 1993 to December 2008 in a private pediatric dental clinic were examined. A total of 308 records had 412 primary teeth that sustained traumatic injuries. Age at the time of injury ranged from 4 months to 7 years. A chi-squared test and logistic regression were used for statistical analyses. RESULTS: One hundred forty-eight children (241 teeth) were followed up until the eruption of the permanent successor. The prevalence of DSP was 22.4%. Discoloration and hypoplasia were the most frequent abnormalities (74.1%), followed by eruption disorders (25.9%). Age at the time of TDI-1 was the only variable significantly associated with DSP. Sequelae were most prevalent among children who suffered an injury between 1 and 3 years of age. CONCLUSIONS: Children who sustain traumatic dental injuries should be followed up regularly for an early diagnosis and treatment of possible DSP.

136. de Carvalho, R. B., R. F. Mendes, et al. (2011). "Oral health and oral motor function in children with cerebral palsy." *Spec Care Dentist* 31(2): 58-62.

The objective of this study was to evaluate the influence of the type of cerebral palsy (CP) and oral motor function (OMF) on the oral health status of children and adolescents with CP in Teresina, Piaui, Brazil. The sample consisted of 52 children with CP, aged 7 to 18 years. The data were statistically analyzed using chi-square tests. In 73.1% of the sample, the subjects' caregivers carried out the daily oral care. There was a significant association between the frequency of daily care and the subject's level of oral hygiene ($p = .037$). A diagnosis of Class II malocclusion was made for 55.8% of the sample, and defects of enamel formation were found in 38.5% of the subjects. There was no significant correlation between DMFT (decayed, missing, filled teeth) (mean = 1.09 +/- 1.64) and socioeconomic status of the subjects ($r = .254$, $p = .069$). A significant association was found between quadriplegia and OMF ($\chi^2 = 7.88$, $p = .019$). The type of CP and OMF did not influence the levels of plaque and caries indices in the children with CP, but increased frequency of toothbrushing did result in an improved oral hygiene index.

137. De Lucena, S. C., S. G. Gomes, et al. (2011). "Patients' satisfaction and functional assessment of existing complete dentures: correlation with objective masticatory function." *J Oral Rehabil* 38(6): 440-446.

The aim of this study was to evaluate the correlation between patients' and dentist's assessment of dentures and to correlate these variables with objective measures of masticatory function. A sample of 28 edentulous individuals was selected, all wearing both complete dentures for at least 6 months and with no signs or symptoms of temporomandibular joint disorders. They rated their level of satisfaction with their dentures from 0 to 100 by means of a visual analogue scale, and dentures were scored by a dentist from 0 to 9 considering functional aspects. Tooth wear was evaluated on the posterior teeth of dentures considering the lack of occlusal anatomy. Masticatory performance and swallowing threshold tests were performed with an artificial test food (Optocal), and the median particle size was determined by the sieving method. The results showed that the mean satisfaction value of volunteers with their dentures was 49.1 and the median score of dentist's evaluation was 6. The Spearman correlation coefficient revealed no significant correlation between patients' and dentist's assessment of dentures ($P > 0.05$). The median particle size for

masticatory performance and swallowing thresholds was 5.5 +/- 1.0 and 4.9 +/- 1.2 mm, respectively. Data of both masticatory tests showed no significant correlation with patients' satisfaction or with dentist's evaluation of dentures. There was no difference of food comminution between subjects with and without excessive posterior tooth wear. It can be concluded that dentist's and patients' assessment of dentures were not correlated, and no correlation was observed between these variables and masticatory function.

138. de Mata, C., G. McKenna, et al. (2011). "Caries and the older patient." *Dent Update* 38(6): 376-378, 381. Ageing of the population, together with prolonged retention of teeth, has brought new challenges to dentistry. Whereas in the past oral care for the elderly was restricted to provision of dentures, older patients are now presenting with dental caries and failed restorations. These problems may have an impact on their general health and quality of life. Poor oral hygiene, xerostomia and diet are among the risk factors for caries in older patients and need to be addressed in order to achieve control of the disease. Carious lesions can be treated conservatively in many cases or may need surgical management. CLINICAL RELEVANCE: Caries is an oral health issue among older patients and can result in tooth loss. Oral health has a great impact on general health and quality of life of elderly people.

139. De Visschere, L., C. de Baat, et al. (2011). "Evaluation of the implementation of an 'oral hygiene protocol' in nursing homes: a 5-year longitudinal study." *Community Dent Oral Epidemiol* 39(5): 416-425. OBJECTIVES: To explore the long-term effects of the implementation of an oral hygiene protocol in nursing homes. METHODS: Out of 14 nursing homes (Flanders) seven nursing homes were randomly allocated to the intervention group and confirmed to implement an 'oral hygiene protocol'. The remaining nursing homes (the control group) continued to perform oral hygiene as usual. Oral hygiene levels were scored and factors related to plaque levels were recorded. Mixed model analysis with random institution effect, were performed to explore differences in oral hygiene levels owing to the intervention, and the predictive value of explanatory variables. RESULTS: At baseline, no significant differences were found between plaque levels in both study groups. In an unadjusted analysis, different effects were observed on denture and dental plaque. The lowest denture plaque levels were found 2 years after the start of the study, while the lowest dental plaque levels were found at the end of the study. The effect of the intervention could not be confirmed in an adjusted mixed model, where significant indicators for dental plaque were resident's dependency ($P < 0.01$) and presence of mouth rinse ($P < 0.01$). Capacity of the nursing home ($P < 0.05$) and the presence of toothpaste ($P < 0.01$) were dominant influencing factors for denture plaque. CONCLUSIONS: After 5 years of implementation obtained plaque levels were unsatisfactory. A lot of uncertainties remained on the impact of characteristics of individual nursing homes. Obtaining adequate oral hygiene levels in nursing homes remain an important ongoing challenge and needs further research.

140. Deliberador, T. M., G. Marengo, et al. (2011). "Accidental aspiration in a patient with Parkinson's disease during implant-supported prosthesis construction: a case report." *Spec Care Dentist* 31(5): 156-161. This article reports on a case history of an elderly patient with Parkinson's disease (PD) who sought treatment at a private dental office. His chief complaint was "difficulty in eating due to an illfitting prosthesis." Laboratory tests and oral radiographs were made. The surgical placement of an implant was done and, subsequently, an implant-supported prosthesis was fitted for the patient. During the impression for the construction of the implant-supported prosthesis, the patient accidentally aspirated the implant screwdriver. The object was found in the lower right lobe of the bronchus, and its removal was necessary in a hospital using bronchoscopy under general anesthesia. Patients with PD are considered at risk of aspirating and/or ingesting dental instruments. Short treatment periods are recommended, preferably during the morning, when the medication prescribed for PD is most effective. When treating patients who have a risk for aspirating and ingesting small objects, it is important to treat them in a more vertical position, and small-sized objects should be secured with dental floss to aid retrieval.

141. Denisco, R. C., G. A. Kenna, et al. (2011). "Prevention of prescription opioid abuse: the role of the dentist." *J Am Dent Assoc* 142(7): 800-810. BACKGROUND: Opioids are analgesics that have potential for misuse, abuse or addiction. Up to an estimated 23 percent of prescribed doses are used nonmedically. As prescribers of 12 percent of immediate-release (IR) opioids in the United States, dentists can minimize the potential for misuse or abuse. METHODS: The authors participated in a two-day meeting in March 2010 cohosted by Tufts Health Care Institute Program on Opioid Risk Management, Boston, and Tufts University School of Dental Medicine, Boston. The purpose of the meeting was to synthesize available opioid abuse literature and data from a 2010 survey regarding West Virginia dentists' analgesic prescribing practices, identify dentists' roles in prescribing opioids that are used nonmedically, highlight practices that dentists can implement and

identify research gaps. RESULTS: Dentists can play a role in minimizing opioid abuse through patient education, careful patient assessment and referral for substance abuse treatment when indicated, and using tools such as prescription monitoring programs. Research is needed to determine the optimal number of doses needed to treat dental-related pain. CONCLUSIONS: Dentists cannot assume that their prescribing of opioids does not affect the opioid abuse problem in the United States. The authors suggest that dentists, along with other prescribers, take steps to identify problems and minimize prescription opioid abuse through greater prescriber and patient education; use of peer-reviewed recommendations for analgesia; and, when indicated, the tailoring of the appropriate and legitimate prescribing of opioids to adequately treat pain. Practice Implications. The authors encourage dentists to incorporate practical safeguards when prescribing opioids, consistently educate patients about how to secure unused opioids properly, screen patients for substance use disorders and develop a referral network for the treatment of substance use disorders.

142. Dennis, D. A. (2011). "Protecting your reputation in a digital world." *Today's FDA* 23(3): 14-15, 17-18.

This article is not a substitute for professional services, nor is it meant to be a comprehensive list. It is intended to be a primer in helping you protect your greatest asset, your reputation. Be proactive in the way you treat your patients.

Treat them with respect and courtesy and do your best to keep all your patients from becoming the disgruntled patient that attacks your reputation. Be vigilant in monitoring what people are saying about you on the Internet. If you are not aware of what they are saying, you can not defend your reputation. Be ready to act when you find unfair criticism of your reputation. Finally, be smart in how you present your online image. Don't post anything online unless you are comfortable with the entire world seeing it. Remember the old saying, "It takes a lifetime to build a reputation, but only a moment to undo it."

143. Devine, B. (2011). "Reaching the Texas dental goals of healthy people 2010." *Tex Dent J* 128(12): 1255-1259.

BACKGROUND: The U.S. Department of Health and Human Services has promoted Healthy People 2010, which is a set of national health objectives for the nation to achieve over the first decade of the new century (1). Texas has not yet met its target of 50 percent of 8-year-old children with dental sealants having been placed on their 6-year molars, which is one of the Healthy People 2010 goals. An assessment of the dental needs of children in Tarrant County, Texas, was initiated by the JPS Health Network (named after John Peter Smith). The JPS Health Network established the Healthy Smiles program to address the dental needs of the students in this county because a school based dental sealant program would be effective in reducing dental decay. METHODS: Approved Title One elementary schools in Tarrant County were scheduled for dental screenings, education, and fluoride and dental sealant applications. Students were given visual dental screenings and classified as to future dental needs. First grade students received fluoride varnish and second and third grade students received fluoride and dental sealants. RESULTS: For the 2010-2011 school year: A total of 28,322 students were seen by dental professionals from the JPS Health Network; 8,348 dental sealants were placed; and 11,825 fluoride applications were given by dental staff. CONCLUSIONS: The JPS Health Network Healthy Smiles Program proved to be an effective way to deliver oral preventive care and dental education to a large number of low-income students. CLINICAL IMPLICATIONS: Dental caries prevention programs such as Healthy Smiles could help Texas reach its goals for improved oral health for the children of Texas.

144. Discepolo, K. and A. S. Kaplan (2011). "The patient protection and affordable care act: effects on dental care." *N Y State Dent J* 77(5): 34-38.

Health care reform has been a subject of debate long before the presidential campaign of 2008, through the presidential signing of the Patient Protection and Affordable Care Act (PPACA) on March 23, 2010, and is likely to continue as a topic of discussion well into the future. The effects of this historic reform on the delivery of healthcare and on the economy are subject to speculation. While most people are at least generally aware that access to medical care will be improved in many ways, few people, including many in the dental profession, are aware that this legislation also addresses oral health disparities and access to dental care. It is the purpose of this paper to review how dental care is currently accessed in the United States and where oral health care disparities exist, to suggest approaches to alleviating these disparities and to delineate how the changes in dental policies found in the PPACA hope to address these concerns. The main arguments of organized dentistry, both those in support of and in opposition to the PPACA, are summarized.

145. Divaris, K., R. G. Rozier, et al. (2012). "Effectiveness of a school-based fluoride mouthrinse program." J Dent Res 91(3): 282-287.

The aims of this study were to estimate the caries-preventive effects of a school-based weekly fluoride mouthrinse (FMR) program and to determine whether its effectiveness varied by school-level caries risk. We used clinical and parent-reported data for 1,363 children in grades 1 through 5 from a probability sample of North Carolina (NC) schoolchildren. Children's caries experience was measured using decayed and filled primary (d(2,3)fs) and total (d(2,3)fs+D(2,3)MFS) tooth surfaces. Program participation was quantified using 'FMR years'. To estimate caries risk at program entry, children were matched with NC kindergarten-surveillance data representing school-level mean untreated decay (low-risk school: < 1 and high-risk school: >= 1 untreated carious teeth). Mean d(2,3)fs was 4.1 [95% confidence limits (CL) = 3.7, 4.5]. Overall, each 'FMR year' was associated with weak reduction of caries prevalence in the primary [prevalence ratio (PR) = 0.98; 95% CL = 0.90, 1.06] and the mixed dentition (PR = 0.98; 95% CL = 0.91, 1.05). We found a trend toward a larger caries-preventive benefit among children in high-risk schools compared with those in low-risk schools (i.e., 55% vs. 10% caries reduction for 5 to 6 yrs of FMR participation compared to none). Although this difference was not confirmed statistically, our results indicate that children in high-risk schools, as identified by school-level surveillance data, may experience substantial caries-preventive benefits from long-term FMR participation.

146. Docimo, R., C. Perugia, et al. (2011). "Comparative evaluation of the efficacy of three commercially available toothpastes on dentin hypersensitivity reduction: an eight-week clinical study." J Clin Dent 22(4): 121-127.

OBJECTIVE: The objective of this eight-week, single-center, three-cell, double-blind, and randomized clinical study was to evaluate the dentin hypersensitivity reduction efficacy of three commercially available toothpastes: 1) Colgate Sensitive Pro-Relief Toothpaste (also marketed as elmex Sensitive Professional); 2) Sensodyne Rapid Relief Toothpaste; and (3) Crest Cavity Protection Toothpaste. **METHODS:** 150 subjects, having two teeth with tactile and air blast hypersensitivity, were assigned to one of the three study groups (50/group). Subjects were then asked to brush their teeth for one minute, twice daily, with the given toothpaste. The dentin hypersensitivity and oral tissues were evaluated at baseline, two weeks, four weeks, and eight weeks. Comparison of the treatment groups with respect to gender was conducted using a chi-square analysis, and with respect to age and baseline hypersensitivity scores was performed using the analysis of variance (ANOVA). Within-treatment effects were analyzed using the paired t-test, while the analysis of covariance (ANCOVA) was used to examine between-treatment effects. The post hoc Tukey test was performed for pair-wise comparisons. All statistical tests were two-sided using a significance level of alpha = 0.05. **RESULTS:** After two, four, and eight weeks of daily use of the products, all three groups showed a statistically significant reduction from baseline in tactile and air blast dentin hypersensitivity ($p < 0.05$). Colgate Sensitive Pro-Relief toothpaste produced a significant improvement in mean tactile and air blast dentin hypersensitivity scores, and was more effective than Sensodyne Rapid Relief toothpaste and Crest Cavity Protection toothpastes ($p < 0.05$). **CONCLUSION:** Colgate Sensitive Pro-Relief Toothpaste, used twice daily, significantly reduces dentin hypersensitivity, and is significantly more effective in reducing dentin hypersensitivity than Sensodyne Rapid Relief Toothpaste and Crest Cavity Protection Toothpaste.

147. Dodson, R. (2011). "Value for your profession. Monitoring breathing in the sedated patient: three ways to do it, and tools to help you." Tex Dent J 128(8): 774-775.

148. Doepel, M., M. Nilner, et al. (2011). "Headache: short- and long-term effectiveness of a prefabricated appliance compared to a stabilization appliance." Acta Odontol Scand 69(3): 129-136.

OBJECTIVE: To compare the short- and long-term effectiveness of a prefabricated occlusal appliance with that of a stabilization appliance when treating headache in patients with myofascial pain. **MATERIAL AND METHODS:** Sixty-six patients, 94% of whom suffered concomitantly from headache, at two centres for Stomatognathic Physiology in Sweden and Finland were included in a randomized controlled trial. History questionnaires and clinical examination according to the Research Diagnostic Criteria for Temporomandibular Disorders were used at baseline and at 10-week and 6- and 12-month follow-ups. Patients were randomly assigned to either a prefabricated (R) or a stabilization appliance (S) group. **RESULTS:** There were significant decreases in the frequency and intensity of headache in both groups at all follow-ups, without statistically significant differences between groups. At baseline, 23 patients in both groups reported recurrent-continuous headache and, at 12 months, seven in the R group and four in the S group. The mean intensity (numeric rating scale) of headache prior to treatment decreased significantly at 12 months from 5.3 to 2.1 in the R group and from 6.1 to 2.9 in the S group. At the 12-month follow-up, 56% of patients in the R group

reported a 30% reduction in intensity of headache and 50% a 50% reduction. In the S group, corresponding values were 39% and 36%, respectively. Non-specific physical symptoms were significantly associated with frequency of headache at baseline and at 6 months, and with depression at 6 and 12 months. CONCLUSION: The effectiveness of the prefabricated appliance seems to be similar to that of the stabilization appliance in the treatment of headache in patients with myofascial pain in both the short and long term.

149. Doepel, M., M. Nilner, et al. (2012). "Long-term effectiveness of a prefabricated oral appliance for myofascial pain." J Oral Rehabil 39(4): 252-260.

The long-term effectiveness of a prefabricated oral appliance (R) was compared with a stabilisation appliance (S) in patients with myofascial pain. Sixty-five patients diagnosed with myofascial pain at two centres for Stomatognathic Physiology in Sweden and Finland were included in a randomised controlled trial using Research Diagnostic Criteria for Temporomandibular Disorders, with history questionnaires and clinical examinations performed by blinded examiners at baseline and at 6- and 12-month follow-ups. Patients were randomly assigned either to the R or the S group. Treatment outcome was measured according to IMMPACT for four chronic pain outcome domains: pain intensity, overall improvement, physical functioning and emotional functioning. Physical functioning was classified for Graded Chronic Pain severities and assessed by the Jaw Functional Limitation scale. Emotional functioning composed of scores of non-specific physical symptoms and depression. There were no differences between groups at baseline. At both follow-ups, all outcome domains showed significant within-group improvement, without significant differences between groups. At 12 months, 72% of all patients reported a 30% reduction in worst pain and 63% of the patients a

50% reduction in worst pain. Overall improvement 'better' to 'symptom-free' was observed in 81% in the R and 64% in the S group at the 12-month follow-up. Graded Chronic Pain, Functional Limitation of the Jaw, non-specific physical symptoms and depression showed statistically significant reduction at 12-month follow-up. Results support the hypothesis that the effectiveness of the prefabricated appliance is similar to that of the stabilisation appliance in the long-term when treating patients with myofascial pain.

150. Edry, R., M. Rovner, et al. (2011). "Entropy values of intellectually-disabled and normal children undergoing deep intravenous sedation for dental treatment." Alpha Omega 104(3-4): 79-84.

BACKGROUND: Intravenous sedation is an efficient method to facilitate dental treatment delivery to uncooperative children. Entropy is used for monitoring anesthetic depth. Nonetheless, scarce data is found on entropy monitoring in intellectually-disabled patients during sedation. OBJECTIVE: This comparative study set out to evaluate entropy values of normal and intellectually-disabled patients during the steady state period of deep sedation and awakening. Additionally, the study aimed to establish whether normal and intellectually-disabled patients reached a comparable clinically assessed state of sedation and the doses of total anesthetic drugs administered. Materials and Methods: 30 patients were included in the study and divided into two groups: 16 normal and 14 intellectually-disabled children. Ages ranged between 2 to 16 years. All patients were assigned to receive dental treatment under intravenous sedation. Entropy tracings were recorded for all patients. Clinical sedation level was assessed every 5 minutes. Drug administration was guided clinically. The anesthesiologist was blinded to entropy tracing. RESULTS: Although sedation levels assessed clinically were similar between groups, entropy values were significantly lower in the group of intellectually-disabled patients both during sedation steady state and waking. The total amount of anesthetic drugs administered to normal patients was higher compared to intellectually-disabled patients. CONCLUSION: In this study, entropy monitoring was found to be a more sensitive modality for assessing intra-operative brain activity during steady state sedation compared to clinical assessment of sedation. Despite similar clinical assessment of sedation level, brain activity was lower in the intellectually-disabled group as were their anesthetic drug requirements. We conclude that intellectually-disabled patients may need less anesthetic drugs to reach a good level of sedation. Whether the lower level of brain activity during sedation, reflected by lower entropy tracings, is characteristic of the intellectually disabled warrants additional studies.

151. El Aidi, H., E. M. Bronkhorst, et al. (2011). "Multifactorial analysis of factors associated with the incidence and progression of erosive tooth wear." Caries Res 45(3): 303-312.

To prevent erosive tooth wear, early diagnosis and identification of causative factors are essential. The aim of the present 3-year longitudinal study was to investigate the association between a broad collection of biological and behavioural factors and the incidence and progression of erosive tooth wear among adolescents. The study sample consisted of 656 attendees of a dental clinic with at baseline a mean age of 11.9 years (SD = 0.9). The criteria for the assessment of erosive wear were a modification of the erosion criteria developed by Lussi [Eur J Oral Sci 1996;104:191-

198]. Information on biological and behavioural factors was gathered by clinical examinations (at baseline, after 1.5 and 3 years) and by self-reported questionnaires (completed semi-annually). Of the erosion-free children at baseline, 24.2% developed erosive wear. In children with erosion at baseline, 68.3% showed progression. Multivariate analyses showed significant associations between the incidence of erosive tooth wear and alcoholic mixed drinks (odds ratio, OR = 1.82), sour vegetables (OR = 1.16) and tooth grinding (OR = 4.03). The intake of yoghurt products was significantly negatively associated with the incidence of erosive wear (OR = 0.79). The interaction of acidic products and tooth grinding showed a significant extra risk (OR = 1.2). The intake of vitamins was positively associated with progression (OR = 2.03). Erosive wear was less likely to progress in subjects who consumed milk and yoghurt products (OR = 0.89 and 0.76, respectively). The present study showed that the aetiology of erosive tooth wear is complex. Possible aetiological factors include more than acidic drinks, and factors such as tooth grinding play a large role.

152. Elad, S., E. Binenfeld-Alon, et al. (2011). "Survey of acceptance of the 2007 American Heart Association guidelines for the prevention of infective endocarditis: a pilot study." *Quintessence Int* 42(3): 243-251.

OBJECTIVE: To evaluate the acceptance rate of the 2007 American Heart Association (AHA) prophylactic protocol by the patients for whom the need for prophylaxis for infective endocarditis was downgraded. **METHOD AND MATERIALS:** A survey among patients was conducted. Patients were included if they had to receive antibiotic prophylaxis prior to dental treatment according to the 1997 AHA protocol and did not require antibiotic prophylaxis prior to dental treatment according to the 2007 AHA guidelines. The perception of the patients and their physicians to the change was analyzed. Possible contributing parameters were assessed. **RESULTS:** The slight decrease in the rate of acceptance with an increase in time since the AHA publication demonstrated by the logistic regression (odds ratio, 0.93; 95% CI, 0.79 to 1.10) was not statistically significant ($P=.41$). Parameters related to lower patient acceptance rates were invasiveness of dental treatment and the type of dental setting ($P=.046$ and $.001$, respectively). Parameters that were found not to affect the patient acceptance rate were the severity of cardiac condition and a durable history of dental treatments in the same institute ($P=.06$ and $.26$, respectively). **CONCLUSIONS:** Sixteen months after publication of the 2007 AHA guidelines, the acceptance rate of the protocol is moderate to high. Reasons for this partial acceptance are discussed.

153. Eldarrat, A. H. (2011). "Awareness and attitude of diabetic patients about their increased risk for oral diseases." *Oral Health Prev Dent* 9(3): 235-241.

PURPOSE: To assess: 1) awareness of diabetic patients about their increased risk for oral diseases, 2) attitudes of diabetic patients towards maintaining good oral health through oral self-care and regular dental visits and 3) their sources of information on oral health. **MATERIALS AND METHODS:** A self-administered questionnaire was used to assess the main objectives of the study. Two hundred diabetic patients ranging in age from 17 to 78 years old participated in the study. **RESULTS:** A majority of the participants had type 2 diabetes. The awareness of diabetic patients of their increased risk for oral diseases is low compared to their awareness of systemic diseases. Their attitude towards maintaining good oral health is poor. Of the participants, only 17% brush their teeth twice daily, 61% never use dental floss, and 67% had not visited a dental clinic within the last year. Regarding participants' sources of awareness, 53% learned from a dentist and 30% through other media sources. A significant association ($P < 0.05$) was found between glycaemic control and oral infections and between duration of diabetes and denture problems. **CONCLUSIONS:** Diabetic patients were found to have little awareness of their increased risk for oral diseases. In order to promote proper oral health and to reduce the risk of oral diseases, health professionals in both the dental and medical fields need to develop programs to educate the public about the oral manifestations of diabetes and its complications for oral health.

154. Eldarrat, A. H. (2011). "Influence of oral health and lifestyle on oral malodour." *Int Dent J* 61(1): 47-51.

OBJECTIVE: To assess the influence of oral health and lifestyle on the prevalence of oral malodour among university students. **MATERIALS AND METHODS:** Self-administered questionnaires. Chi-square test was used to detect any significant association between malodour and various variables. **RESULTS:** 9% of males and 6% of females complained of malodour, while 36% of males and 31% of females did not complain of malodour. Nevertheless, 12% of the males and 6% of females were unable to decide. The highest percentage of respondents not complaining of malodour were non-smokers (55%). A significant number of respondents were free from caries (48%), gingival disease (55%) and also were not complaining of malodour. Statistically, a significant association was found between malodour and gingival disease ($p < 0.05$) and between malodour and the use of a toothbrush on a daily basis ($p < 0.001$). **CONCLUSIONS:** The results highlight the influence of oral self-care and lifestyle on malodour. Public awareness, diagnosis and treatment of malodour are primarily the responsibility of dentists. Malodour can have a distressing effect and the affected person may avoid socialising.

155. Endo, H., K. Kanemura, et al. (2011). "Clenching occurring during the day is influenced by psychological factors." *J Prosthodont Res* 55(3): 159-164.

PURPOSE: We investigated the relationship between clenching occurring during the day under natural conditions and psychological attributes. **METHOD:** Subjects were 37 dentistry students and staff (14 women, 23 men; mean age 27.4+/-4.7 years). A portable EMG recording device was used to record muscle activity in the temporal muscles for a continuous 5-h period under subjects' natural conditions, including having lunch. Clenching was identified by electromyography, and subjects were categorized into clenching and non-clenching groups. Psychological testing was performed during the same period using the Modified Taylor Manifest Anxiety Scale (MAS), the Self-rating Depression Scale (SDS), and the Cornell Medical Index (CMI), and the psychological attributes of clenching and non-clenching groups were compared. **RESULTS:** Of the 37 subjects, 23 were assigned to the clenching group and 14 to the non-clenching group. Thirteen of the 23 subjects of the clenching group and none of the 14 subjects of the non-clenching group were determined to have psychological problems according to the MAS, with a significant difference observed between the clenching and non-clenching groups in terms of anxious tendency ($p < 0.001$; Fisher's exact test). Total muscle activity in the clenching group, excluding eating and talking, was 3.5 times greater compared with the non-clenching group, and a significant difference between the groups was observed ($p < 0.05$; Mann-Whitney U-test). **CONCLUSIONS:** Daytime clenching was shown to be associated with anxious tendency. Total muscle activity in the clenching group was 3.5 times greater compared with the non-clenching group.

156. Epstein, J. B. and M. B. Huhmann (2011). "Dietary and nutritional needs of patients undergoing therapy for head and neck cancer." *J Am Dent Assoc* 142(10): 1163-1167.

BACKGROUND: Nutrient and caloric intake is critical during therapy for head and neck cancer. **METHODS:** The authors review the oral complications experienced by, and dietary and nutritional needs of, patients during therapy. They also present recommendations for oral care and calorie and nutrient intake. **CONCLUSIONS:** Oral health care professionals can assist patients during treatment for cancer in maintaining oral, systemic and nutritional health, as well as in controlling oral symptoms. Recovery from the acute toxicities of therapy often requires diet modification, tube feeding or both to meet patients' energy and nutrient demands. **CLINICAL IMPLICATIONS:** Effective management of oral complications of therapy for cancer is necessary to facilitate oral intake throughout treatment. Oral health care professionals should be part of the multidisciplinary team helping meet the needs of patients during treatment.

157. Fadel, H. T., K. A. Al-Kindy, et al. (2011). "Caries risk and periodontitis in patients with coronary artery disease." *J Periodontol* 82(9): 1295-1303.

BACKGROUND: There is considerable variation in studies on the oral health of patients with coronary artery disease (CAD). The aims of this investigation are to study the caries risk profile using the Cariogram computer program and the periodontal disease severity in patients with CAD. **METHODS:** A total of 127 participants (54 test and 73 control) were included. Participants were asked about their general health and daily habits. Clinical examinations, radiographs, and salivary sampling were performed. Cariologic data were entered into the computer program for risk-profile illustration. The onset of CAD conditions was also documented. **RESULTS:** Compared with controls, participants with CAD consumed less sugar, used fluoride toothpaste less frequently, and had significantly less favorable periodontal parameters ($P < 0.005$). Generally, differences in cariologic parameters between the two groups were not significant. Significantly more participants with CAD exhibited low salivary-secretion rates than controls. The actual chance (percentage) of avoiding new cavities according to the Cariogram was low in the test and control groups (31% and 40%, respectively; $P < 0.05$). Only gingival recession was correlated with the onset of CAD. **CONCLUSIONS:** Test and control groups had a relatively high caries risk. More severe periodontal disease was observed in participants with CAD.

158. Ferracane, J. L. (2011). "Resin composite--state of the art." *Dent Mater* 27(1): 29-38.

OBJECTIVES: The objective is to review the current state of the art of dental composite materials. **METHODS:** An outline of the most important aspects of dental composites was created, and a subsequent literature search for articles related to their formulation, properties and clinical considerations was conducted using PubMed followed by hand searching citations from relevant articles. **RESULTS:** The current state of the art of dental composites includes a wide variety of materials with a broad range of mechanical properties, handling characteristics, and esthetic possibilities. This highly competitive market continues to evolve, with the major emphasis in the past being to produce materials with adequate strength, and high wear resistance and polishability retention. The more recent research and development efforts have addressed the issue of polymerization shrinkage and its accompanying stress, which may have a deleterious effect on

the composite/tooth interfacial bond. Current efforts are focused on the delivery of materials with potentially therapeutic benefits and self-adhesive properties, the latter leading to truly simplified placement in the mouth. SIGNIFICANCE: There is no one ideal material available to the clinician, but the commercial materials that comprise the current armamentarium are of high quality and when used appropriately, have proven to deliver excellent clinical outcomes of adequate longevity.

159. Ferreira, M. C., C. Pastore, et al. (2011). "Autonomic nervous system in individuals with cerebral palsy: a controlled study." *J Oral Pathol Med* 40(7): 576-581.

BACKGROUND: Disturbances in homeostatic functions have been observed in individuals with cerebral palsy (CP), possibly resulting from autonomic dysfunction. Salivary flow rate and saliva composition are controlled by the autonomic nervous system, and CP individuals exhibit alterations in salivary parameters that suggest autonomic impairment. This study aimed to investigate cardiac parameters as indicative of autonomic disturbances, possibly associated with salivary changes observed in CP individuals. METHODS: Ninety individuals with CP were compared with 35 sibling volunteers with no neurological damage (CG). Twenty-four-hour ECG/Holter monitoring (SEER((R)) Light; GE Medical Systems, Milwaukee, WI, USA) and 12-lead electrocardiographic recordings were performed on the CP and control groups. Total saliva was collected, and the salivary flow rate and total protein concentration were determined. RESULTS: Cerebral palsy (CP) individuals presented a significant reduction in salivary flow rate ($P < 0.01$) and increased protein concentrations ($P < 0.01$) compared to CG. Twenty-four-hour Holter ECG analysis showed differences for high frequency (HF), low frequency (LF) and LF/HF ratio between the groups, with the CP group presenting higher HF and LF values and lower LF/HF. Electrocardiographic parameters showed a statistically significant difference for heart rate, and its correlates, and mean corrected QT interval between the groups studied ($P < 0.05$). Snoring was frequent among CP patients. ECG and autonomic changes were independently associated with CP. CONCLUSION: Individuals with cerebral palsy present cardiovascular changes principally manifested as disturbed sympathovagal balance. These autonomic dysfunctions could contribute to the salivary changes observed.

160. Ferrus-Torres, E., E. Valmaseda-Castellon, et al. (2011). "Informed consent in oral surgery: the value of written information." *J Oral Maxillofac Surg* 69(1): 54-58.

OBJECTIVE: To evaluate the efficacy of the written explanation given to patients when obtaining informed consent for oral surgery, taking the surgical extraction of the impacted mandibular third molar as the clinical model for this study. PATIENTS AND METHODS: This study included 87 patients requiring surgical extraction of an impacted lower third molar. Residents of the Oral Surgery Department explained verbally and in writing 7 possible complications that could arise as a result of the operation, after which informed consent was obtained from the patient. These complications were as follows: altered sensation of the homolateral lower lip and chin; altered sensation of the tongue; swelling; trismus; pain; allergies; and infection. The patients completed a Corah anxiety test on the same day, as well as a preoperative questionnaire about their level of understanding of the informed consent. Seven days after the operation, the patients returned to have their stitches removed and for a postoperative interview. RESULTS: A total of 87 patients participated in the study. Of these, 64% ($n = 56$) had understood the objective of the informed consent. All but 1 (1%) of the patients remembered having been informed of the possible risks before the operation. Changes in sensation of homolateral lower lip and chin (98%, $n = 85$) and of the tongue (86%, $n = 75$) were among the complications most recalled by the patients. Ninety-six percent of patients ($n = 84$) preferred to be informed preoperatively, and 71% ($n = 61$) described the signs and symptoms to be exactly as explained by the residents. CONCLUSIONS: Patients do not remember the majority of the information they receive before giving informed consent. Paresthesia of the lower lip and chin on the operated side and of the tongue are among the most recalled complications. This may be due to the seriousness of this complication, to the effect it can have on the patients' daily life, and to the possibility that it may be irreversible.

161. Forsell, M., P. Sjogren, et al. (2011). "Attitudes and perceptions towards oral hygiene tasks among geriatric nursing home staff." *Int J Dent Hyg* 9(3): 199-203.

OBJECTIVES: To assess attitudes and perceptions towards oral hygiene tasks among geriatric nursing home staff, before and after a dental hygiene education. METHODOLOGY: A survey questionnaire was distributed to the nursing staff ($n = 105$), at a geriatric nursing home in Stockholm, Sweden. RESULTS: The response rate to the questionnaire was 83%. A vast majority (87%) of the nursing staff considered oral hygiene tasks unpleasant. The main reason for considering oral care unpleasant was a perceived unwillingness from the residents. The perceived unwillingness from the residents among the nursing staff was reduced after the dental hygiene education (chi-square test, $P = 0.02$). A vast majority of the nursing staff experienced, always or sometimes, resistance from the residents towards oral care. CONCLUSIONS:

Nursing home staff members consider oral care tasks unpleasant, and frequently experience resistance from the nursing home residents towards oral care. The perceived unwillingness from the residents is reduced after an advanced dental hygiene education. Further studies are needed to evaluate the effects of education on nursing staff's attitudes and perceptions towards oral care tasks, with the overall aim of improving the oral health among older people in hospitals and nursing homes.

162. Garcia, M. N., C. F. Hildebolt, et al. (2011). "One-year effects of vitamin D and calcium supplementation on chronic periodontitis." J Periodontol 82(1): 25-32.

BACKGROUND: A previous study reported by this group found that patients in periodontal maintenance programs taking vitamin D and calcium supplementation had a trend for better periodontal health compared to patients not taking supplementation. The objective of the present study is to determine, for the same cohort of subjects, whether such differences persist over a 1-year period. **METHODS:** Fifty-one patients enrolled in maintenance programs from two dental clinics were recruited. Of these, 23 were taking vitamin D (≥ 400 IU/day) and calcium ($\geq 1,000$ mg/day) supplementation, and 28 were not. All subjects had at least two interproximal sites with ≥ 3 mm clinical attachment loss. For mandibular-posterior teeth, gingival index, plaque index, probing depth, attachment loss, bleeding on probing, calculus index, and furcation involvement were evaluated. Photostimulable-phosphor, posterior bitewing radiographs were taken to assess alveolar bone. Daily vitamin D and calcium intakes were estimated by nutritional analysis. Data were collected at baseline, 6 months, and 12 months. **RESULTS:** Total daily calcium and vitamin D intakes were 1,769 mg (95% confidence interval, 1,606 to 1,933) and 1,049 IU (781 to 1,317) in the taker group, and 642 mg (505 to 779) and 156 IU (117 to 195) in the non-taker group, respectively ($P < 0.001$ for both). Clinical parameters of periodontal

health improved with time in both groups ($P < 0.001$). When clinical measures were considered collectively, the differences between supplement takers and non-takers had the following P values: baseline ($P = 0.061$); 6 months ($P = 0.049$); and 12 months ($P = 0.114$). After adjusting for covariates, the P values for the effect of supplementation were as follows: baseline ($P = 0.028$); 6 months ($P = 0.034$); and 12 months ($P = 0.058$). **CONCLUSIONS:** Calcium and vitamin D supplementation ($\leq 1,000$ IU/day) had a modest positive effect on periodontal health, and consistent dental care improved clinical parameters of periodontal disease regardless of such supplements. Our findings support the possibility that vitamin D may positively impact periodontal health and confirm the need for randomized clinical trials on the effects of vitamin D on periodontitis.

163. Garg, A. and G. Guez (2011). "Debate rages over antibiotic prophylaxis in patients with total joint replacements." Dent Implantol Update 22(5): 33-37.

164. Garip, H., T. Satilmis, et al. (2011). "Effects of midazolam/low-dose ketamine conscious intravenous sedation on pain, swelling, and trismus after surgical extraction of third molars." J Oral Maxillofac Surg 69(4): 1023-1030.

PURPOSE: To assess the clinical efficacy of midazolam plus low-dose ketamine conscious intravenous sedation on relief from or prevention of postoperative pain, swelling, and trismus after the surgical extraction of third molars. **PATIENTS AND METHODS:** Patients admitted for surgical extraction of mandibular third molars ($n = 50$) were included. All patients received an initial dose of 0.03 mg/kg intravenous midazolam; then patients in the midazolam-placebo (MP) group received 2 mL of a placebo IV, while patients in the midazolam-ketamine (MK) group received 2 mL of a ketamine + saline combination (0.3 mg/kg ketamine + saline) IV. **RESULTS:** Facial swelling on postoperative days was significantly lower in the MK group than in the MP group ($P = .001$). Mouth opening on postoperative days was significantly greater in the MK group than in the MP group ($P = .001$). Pain scores measured on a visual analog scale at 4, 12, and 24 hours after surgery were significantly higher in the MP group than in the MK group ($P = .001$). **CONCLUSIONS:** Conscious intravenous sedation with midazolam/low-dose ketamine during surgical extraction of third molars can provide the patient with a comfortable procedure and good postoperative analgesia, with less swelling and significantly less trismus. Intravenous low-dose ketamine may be safe and effective in reducing postoperative pain.

165. Gaudio, R. M., S. Barbieri, et al. (2011). "Traumatic dental injuries during anaesthesia. Part II: medico-legal evaluation and liability." Dent Traumatol 27(1): 40-45.

INTRODUCTION: Claims for tooth damage following intubation are increasing. An anaesthetic chart (AC) has been proposed to describe patient's pre-existent dental diseases and any possible lesions caused during intubation and extubation. **MATERIALS AND METHODS:** We conducted a retrospective study of 235 cases of dental lesions reported in litigation files from January 2000 to June 2009. Based on preoperative oral inspection the anaesthetist decided whether

or not to use a protective aid. Two different tooth protectors were applied: (i) a standard mouthguard and (ii) silicone impression putty. RESULTS: The study population consisted of 110 female (age 6-88 years) and 125 male patients (11-90 years) patients. In 66% of cases greater risk of perianesthetic dental injury was reported in the AC due to pre-existing poor dentition. In intubation procedures without protective devices dental subluxation/luxation occurred in 55% of patients, dental avulsion in 43%, exfoliation in 2%, and soft tissue damage in five patients. One patient suffered from transient facial nerve paralysis. The costs of treatments and of impression materials, as well as the total value of compensation for injuries are reported. DISCUSSION: Definition and demonstrability of damages on the AC is important in order to separate the cases worthy of compensation from the non-compensable ones, as to evaluate the possibility of solving the litigation by extrajudicial channels. There are cases in which, based on AC reporting and device adoption the damage resulted to be compensable, but the costs were defined on different estimates of lesions. The use of a protective device makes it possible to down-modulate the damage compensation. CONCLUSION: The analysis of litigation records and 'incident reports' has suggested that the choice of accurate proceeding and the use of protection aids could reduce the number of claims, insurance premiums and the costs of litigation process, thus improving physician-patient relationship.

166. Goktay, O., T. Satilmis, et al. (2011). "A comparison of the effects of midazolam/fentanyl and midazolam/tramadol for conscious intravenous sedation during third molar extraction." J Oral Maxillofac Surg 69(6): 1594-1599.

PURPOSE: This study evaluated the effects of fentanyl and tramadol, used in combination, as sedation for third molar surgical extraction. PATIENTS AND METHODS: This prospective, randomized, double-blind, placebo-controlled study included 60 patients undergoing extraction of a horizontal third molar with an Amsterdam Preoperative Anxiety and Information Scale score above 10 points. All of the patients were first given a 0.03-mg/kg bolus of midazolam, and then

they were randomized into 3 groups: group A, midazolam only; group B, midazolam and 1-mug/kg fentanyl; and group C, midazolam and 1-mg/kg tramadol. The vital signs were recorded. Patients were assessed for postoperative pain and adverse effects, and patient and surgeon satisfaction was assessed. RESULTS: No differences were found in the heart rate among groups ($P > .05$). The mean blood pressure was also similar until the 40th minute, after which the mean blood pressure in the patients in group A was lower than that in the other 2 groups ($P < .01$). In the postoperative pain assessment, the visual analog scale scores of the patients in group C were lower than those in the other 2 groups in the first postoperative hour ($P < .05$). The time at which the first rescue analgesic was taken in groups A, B, and C was 3, 3.5, and 5 hours postoperatively, respectively, and was significantly later in group C ($P < .01$). No difference was found in patient/surgeon satisfaction among the groups. CONCLUSIONS: Tramadol has a better analgesic effect in third molar surgery than fentanyl and placebo.

167. Gonzalez, O., C. Tobia, et al. (2012). "Caloric restriction and chronic inflammatory diseases." Oral Dis 18(1): 16-31.

A reduction in calorie intake [caloric restriction (CR)] appears to consistently decrease the biological rate of aging in a variety of organisms as well as protect against age-associated diseases including chronic inflammatory disorders such as cardiovascular disease and diabetes. Although the mechanisms behind this observation are not fully understood, identification of the main metabolic pathways affected by CR has generated interest in finding molecular targets that could be modulated by CR mimetics. This review describes the general concepts of CR and CR mimetics as well as discusses evidence related to their effects on inflammation and chronic inflammatory disorders. Additionally, emerging evidence related to the effects of CR on periodontal disease in non-human primates is presented. While the implementation of this type of dietary intervention appears to be challenging in our modern society where obesity is a major public health problem, CR mimetics could offer a promising alternative to control and perhaps prevent several chronic inflammatory disorders including periodontal disease.

168. Guggenheimer, J. and P. A. Moore (2011). "The therapeutic applications of and risks associated with acetaminophen use: a review and update." J Am Dent Assoc 142(1): 38-44.

BACKGROUND: In response to the April 2010 U.S. Food and Drug Administration's (FDA's) revision of warning labeling for over-the-counter (OTC) acetaminophen, or N-acetyl-p-aminophenol (APAP), products, the authors reviewed APAP's potential for liver toxicity. TYPES OF STUDIES REVIEWED: The authors reviewed the literature in which investigators examined data related to the epidemiology of APAP-related liver toxicity, studies in which the investigators evaluated the risk factors for its occurrence and case reports. They included articles that were used by the FDA as the basis for establishing the new labeling requirements. RESULTS: Findings from the literature in which investigators have

examined the relationship between APAP and liver toxicity indicate several key risk factors. Foremost are the extensive use of one or more APAP-containing compounds (particularly combinations with opioid agents) and the small margin of safety between the therapeutic and toxic doses. Both of these factors lead to unintentional or intentional drug overdose. Concurrent use of alcohol may contribute to hepatotoxicity, but it may be related to behavior rather than biochemical mechanisms involved in liver damage. **CONCLUSIONS:** The widespread use of APAP has contributed to a substantial increase in the number of cases of acute liver toxicity in the United States. Since APAP is a component of many prescription and OTC medications, unintentional overdose can occur. **CLINICAL IMPLICATIONS:** APAP has numerous applications in dentistry, but if it is used conjointly for other conditions, the risk of the patient's experiencing an overdose increases. In the context of recent FDA concerns about the increased incidence of APAP-related liver toxicity, the authors provide recommendations for safe prescribing practices for APAP. Practitioners should caution patients to follow recommended dosage instructions and avoid taking multiple APAP-containing products.

169. Haas, D. A. (2011). "Alternative mandibular nerve block techniques: a review of the Gow-Gates and Akinosi-Vazirani closed-mouth mandibular nerve block techniques." J Am Dent Assoc 142 Suppl 3: 8S-12S.

BACKGROUND: and Overview. The limited success rate of the standard inferior alveolar nerve block (IANB) has led to the development of alternative approaches for providing mandibular anesthesia. Two techniques, the Gow-Gates mandibular nerve block and the Akinosi-Vazirani closed-mouth mandibular nerve block, are reliable alternatives to the traditional IANB. The Gow-Gates technique requires the patient's mouth to be open wide, and the dentist aims to administer local anesthetic just anterior to the neck of the condyle in proximity to the mandibular branch of the trigeminal nerve after its exit from the foramen ovale. The Akinosi-Vazirani technique requires the patient's mouth to be closed, and the dentist aims to fill the pterygomandibular space with local anesthetic. **CONCLUSION:** Both techniques are indicated for any type of dentistry performed in the mandibular arch, but they are particularly advantageous when the patient has a history of standard IANB failure owing to anatomical variability or accessory

innervation. **CLINICAL IMPLICATIONS:** Having the skill to perform these alternative anesthetic techniques increases dentists' ability to provide successful local anesthesia consistently for all procedures in mandibular teeth.

170. Herd, M. K., R. J. Smith, et al. (2011). "Long buccal nerve block: a previously unreported complication." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 112(2): e1-3.

Although local anesthetic injections are commonly used in dental practice, the complex neurovascular anatomy of the face can present the practitioner with unexpected complications. Several reports document adverse events related to inferior dental blocks (IDBs), whereas long buccal nerve blocks are usually performed without incident. We describe a previously unreported complication of a long buccal nerve block involving blanching, pain, and paresthesia specifically within the infraorbital arterial territory of the face. We had previously reported an identical event resulting from an IDB. We discuss the facial vascular relationships that might explain this complication and how to manage it.

171. Hillerup, S., R. H. Jensen, et al. (2011). "Trigeminal nerve injury associated with injection of local anesthetics: needle lesion or neurotoxicity?" J Am Dent Assoc 142(5): 531-539.

BACKGROUND: The authors used comprehensive national registry and clinical data to conduct a study of adverse drug reactions (ADRs), in particular neurosensory disturbance (NSD), associated with local anesthetics used in dentistry **METHODS:** The study included data sets of annual sales of local anesthetics (from 1995 through 2007), 292 reports to the Danish Medicines Agency, Copenhagen, Denmark, of adverse reactions to local anesthetic drugs, and a clinical sample of 115 patients with NSD associated with local anesthetics. The authors assessed lidocaine 2 percent, mepivacaine 2 percent and 3 percent, prilocaine 3 percent, and articaine 4 percent sold in cartridges. **RESULTS:** The study results showed a highly significant overrepresentation of NSDs associated with articaine 4 percent, in particular with mandibular blocks. **CONCLUSIONS:** The distribution of NSDs was disproportionate to the market share of three of the four drugs in both national registry data and clinical data. These findings indicate that the main cause of injury was neurotoxicity resulting from administration of the local anesthetic rather than the needle penetration. **CLINICAL IMPLICATIONS:** Clinicians may consider avoiding use of high-concentration (4 percent) anesthetic formulations for block anesthesia in the trigeminal area in cases in which there are viable alternatives.

172. Hossainian, N., D. E. Slot, et al. (2011). "The effects of hydrogen peroxide mouthwashes on the prevention of plaque and gingival inflammation: a systematic review." Int J Dent Hyg 9(3): 171-181.

OBJECTIVES: The purpose of this review was to describe systematically the effects of hydrogen peroxide mouthwashes as an adjunct to daily oral hygiene or as a mono-therapy in the prevention of plaque accumulation and gingival

inflammation. MATERIALS AND METHODS: PubMed-MEDLINE and the Cochrane-CENTRAL were searched up to December 2009 to identify appropriate papers. The primary outcome measures included plaque accumulation and parameters of gingivitis. RESULTS: Independent screening of titles and abstracts of 229 articles resulted in 10 publications that met the criteria for eligibility. Descriptive comparisons are presented for hydrogen peroxide mouthwash as compared with control mouthwashes or no oral hygiene. Mean values and standard deviations were obtained by data extraction. Based on a quality assessment, three studies, of which one evaluated H₂O₂ over a period of 6 months, were considered to represent a low risk of bias. This 6-month study showed a positive effect of the use of H₂O₂ on the modified gingival index. CONCLUSIONS: The results of the studies included in this review showed that H₂O₂ mouthwashes do not consistently prevent plaque accumulation when used as a short-term monotherapy. When used as a long-term adjunct to daily oral hygiene, the results of one study indicate that oxygenating mouthwashes reduce gingival redness.

173. Humber, C. C., J. B. Albilal, et al. (2011). "Chronic osteomyelitis following an uncomplicated dental extraction." J Can Dent Assoc 77: b98.

The general dentist is usually the first health care practitioner to evaluate oral disease, initiate treatment and manage complications. Although rare, devastating outcomes of dental surgery can include Ludwig angina, mediastinitis, hemorrhage, necrotizing fasciitis, Lemierre syndrome and osteomyelitis. Osteomyelitis is a well known, but rare complication of dental extractions that can mimic multiple benign and malignant processes. In this case report, we review the diagnosis and management of an advanced postoperative mandibular osteomyelitis that developed following the removal of a mandibular third molar.

174. Jaiswal, G., V. Deo, et al. (2011). "Serum alkaline phosphatase: a potential marker in the progression of periodontal disease in cirrhosis patients." Quintessence Int 42(4): 345-348.

OBJECTIVE: As a consequence of their liver dysfunction, cirrhotic patients have elevated levels of serum alkaline phosphatase (ALP). Increased ALP activity is seen in periodontal tissues during the progression of periodontitis. The present study was carried out to compare ALP levels in cirrhosis patients with and without periodontitis and to correlate ALP levels with the severity of periodontitis. METHOD AND MATERIALS: Both the test and control groups consisted of 30 liver cirrhosis patients with or without periodontitis. The parameters recorded were modified OHI-S Index, Gingival Index (GI), and clinical attachment level (CAL). All patients underwent standardized panoramic radiographs to assess alveolar bone height. The total serum ALP was determined with the kinetic method (R.A 50). RESULTS: Alveolar bone loss (ABL) was 1.62 +/- 0.32 mm in the test group and 0.28 +/- 0.04 mm in the control group. Mean clinical attachment level (CAL) for the test group was greater than the control group: 2.34 +/- 0.67 mm and 0.43 +/- 0.14 mm, respectively. The mean serum alkaline phosphatase level in the test group was higher (39.94 +/- 3.34) than the control group (29.42 +/- 6.11) and the differences was statistically significant (P > .05). When comparison was made between age group (20 to 40 years and 41 to 60 years), the older age group liver cirrhosis patients exhibited significantly higher values for bone loss, clinical attachment level, and serum ALP level. CONCLUSION: There is strong positive correlation between periodontal breakdown and serum alkaline phosphatase level in liver cirrhosis patients.

175. Janardhanan, T., C. I. Cohen, et al. (2011). "Dental care and associated factors among older adults with schizophrenia." J Am Dent Assoc 142(1): 57-65.

BACKGROUND: Few data are available concerning dental care in older adults with schizophrenia. The authors examined the utilization of dental care and factors related to dental treatment in this population. METHODS: The sample consisted of 198 community-dwelling participants 55 years and older with schizophrenia and a community comparison group of 113 participants. The authors adapted a model of illness behavior in later life as the basis for selection of 18 predictor variables of annual dental care visits. RESULTS: The study results showed no significant differences between the schizophrenia and community comparison groups with regard to the percentage of participants (28 and 31 percent, respectively) reporting having had at least two dental visits in the previous year or one dental visit (48 and 54 percent, respectively). However, the results showed significant differences in the percentage of participants in the schizophrenia and community comparison groups who stated that they experienced problems with their teeth or dentures (41 and 23 percent, respectively). When examining participants in the schizophrenia group separately, the authors found four variables that were significantly associated with having had at least one dental visit: financial well-being (odds ratio [OR] = 1.12), better executive cognitive functioning (OR = 1.11), fewer perceived problems with teeth or dentures (OR = 0.33) and fewer oral dyskinesias (OR = 0.86). CONCLUSIONS: Most older adults with schizophrenia in this study did not receive at least two dental visits per year, although their frequency of care was no worse than that of their age-matched peers. Psychiatric assessments should include questions about dental care. The greatest improvement in

dental care for such patients likely is to occur by targeting people who report having more problems with their teeth, including oral dyskinesias; those who have greater cognitive impairments, especially in executive functioning; and those who have diminished financial resources

176. Karsli, E. D., O. Erdogan, et al. (2011). "Comparison of the effects of warfarin and heparin on bleeding caused by dental extraction: a clinical study." J Oral Maxillofac Surg 69(10): 2500-2507.

PURPOSE: Replacement of warfarin with heparin for dental extractions in patients on long-term warfarin therapy is associated with wasted time, consumed labor, and increased treatment expenses. The aim of this study was to evaluate the safety of dental extraction without altering the warfarin regimen in patients with an international normalized ratio from 1 to 4. **PATIENTS AND METHODS:** Forty patients who underwent tooth extraction were divided into 4 groups: continuation of warfarin without interruption (group 1), warfarin bridged with low-molecular-weight heparin (group 2), warfarin bridged with unfractionated heparin (group 3), and a control group of healthy individuals (group 4). Total amount of bleeding (milligrams) was measured for 20 minutes after tooth extraction. International normalized ratio values on the operative day and number of extra gauze swabs used for bleeding control in the first 48 hours were recorded for each patient. Results were statistically analyzed by analysis of variance, Fisher least-significant difference post hoc test, Pearson correlation, chi(2) test, and Student t test. **RESULTS:** Mean amounts of bleeding were 2,486 +/- 1,408; 999 +/- 425; 1,288 +/- 982; and 1,736 +/- 876 mg for groups 1, 2, 3, and 4, respectively. There was no severe postoperative bleeding in any patient and the number of used extra gauze swabs did not differ significantly among groups. **CONCLUSION:** With the aid of local hemostatic agents, dental extraction in patients receiving warfarin who have an international normalized ratio from 1 to 4 could be carried out without a significant risk of bleeding and without altering the anticoagulant regimen.

177. Kassab, M. M., T. W. Radmer, et al. (2011). "A retrospective review of clinical international normalized ratio results and their implications." J Am Dent Assoc 142(11): 1252-1257.

BACKGROUND: Warfarin is a key element in therapy for atrial fibrillation, deep venous thrombosis (DVT), stroke (cerebrovascular accident) and cardiac valve replacement. Often, patients' warfarin blood levels are not tightly controlled with regard to accepted therapeutic ranges, by virtue of the drug's unpredictable nature. **METHODS:** The authors searched 16,017 active clinical charts for active patients of record from the three campuses of the School of Dentistry, Marquette University (MU), Milwaukee, for the years 2009 and 2010. Dental records of 315 patients contained entries including "INR," the abbreviation for the term "international normalized ratio." Only 247 of those records contained an indication of whether the patient's INR values were within therapeutic range. The authors found that 1.96 percent of the total MU dental clinic patient population had a history of warfarin use. **RESULTS:** When the authors compared the INR values for patients with diagnoses of atrial fibrillation, DVT, stroke and cardiac valve replacement, they found that INR values for 107 of the 247 patients (43.3 percent) were not within therapeutic range for the respective diagnoses. For example, only 50 percent of the patients being treated for atrial fibrillation presented themselves for surgical dental treatment while their INR values were in tight control. **CONCLUSION:** The INR values for a significant number of dental patients are not within the therapeutic range for their medical conditions. These patients need to seek follow-up care from their medical care providers. **CLINICAL IMPLICATIONS:** Screening for INR in the dental office-especially before invasive dental treatment such as periodontal surgery, tooth extraction and dental implant placement-can help prevent postoperative complications. It also can aid the clinician in evaluating whether a patient's INR is within therapeutic range and, subsequently, whether the patient's physician needs to adjust the warfarin dosage.

178. Kerins, C., P. S. Casamassimo, et al. (2011). "A preliminary analysis of the US dental health care system's capacity to treat children with special health care needs." Pediatr Dent 33(2): 107-112.

PURPOSE: The purpose of this study was to use existing data to determine capacity of the US dental care system to treat children with special health care needs (CSHCN). **METHODS:** A deductive analysis using recent existing data was used to determine the: possible available appointments for CSHCN in hospitals and educational programs/institutions; and the ratio of CSHCN to potential available and able providers in the United States sorted by 6 American Academy of Pediatric Dentistry (AAPD) districts. **RESULTS:** Using existing data sets, this analysis found 57 dental schools, 61 advanced education in general dentistry programs, 174 general practice residencies, and 87 children's hospital dental clinics in the United States. Nationally, the number of CSHCN was determined to be 10,221,436. The distribution, on average, of CSHCN per care source/provider ranged from 1,327 to 2,357 in the 6 AAPD districts. Children's hospital dental clinics had fewer than 1 clinic appointment or 1 operating room appointment available per CSHCN. The mean

number of CSHCN patients per provider, if distributed equally, was 1,792. CONCLUSIONS: The current US dental care system has extremely limited capacity to care for children with special health care needs.

179. Kingon, A., P. Sambrook, et al. (2011). "Higher concentration local anaesthetics causing prolonged anaesthesia. Do they? A literature review and case reports." Aust Dent J 56(4): 348-351.

Higher concentration dental local anaesthetics (3% and 4%) have become more available in Australia in recent years. Benefits claimed include a faster onset of anaesthesia and improved success with injections compared to 2% solutions. Recent reports suggest that the higher concentration carries a greater risk of prolonged anaesthesia to the mandibular and particularly the lingual nerves. The literature was reviewed and those studies which demonstrated adverse effects of different concentrations of local anaesthetics were analysed. Recent cases are presented. There is an extensive international literature which confirms increased concentration of local anaesthetic does show an increased risk, by about x6, of prolonged anaesthesia. Five case reports illustrate the impact of this complication on patients' quality of life. Careful consideration needs to be given before using higher concentration local anaesthetic agents for mandibular and lingual blocks as lower concentration local anaesthetics are safer. If acceptable to individual patients, avoidance of block injections or any local anaesthetic for minor restorative tasks could be encouraged given the severity of the complication. It is safe to use the higher concentration agents for infiltrations away from major nerves.

180. Kodovazenitis, G., C. Pitsavos, et al. (2011). "Periodontal disease is associated with higher levels of C-reactive protein in non-diabetic, non-smoking acute myocardial infarction patients." J Dent 39(12): 849-854.

OBJECTIVES: A link between periodontal disease (PD) and cardiovascular events has been proposed, but confounding by shared risk factors such as smoking and diabetes remains a concern. We examined the prevalence of PD and its contribution to C-reactive protein (CRP) levels in acute myocardial infarction (AMI) patients and in subjects without AMI and with angiographically nonobstructive coronary disease in the absence of these confounding risk factors. METHODS: Periodontal status and admission CRP levels were evaluated in 87 non-diabetic and non-smoking subjects undergoing cardiac catheterization. The study group comprised of 47 patients with documented AMI, and 40 subjects without AMI and with angiographically nonobstructive coronary disease (ANCD group). RESULTS: Both the prevalence of PD and CRP levels were significantly higher in AMI patients compared with ANCD subjects (38.3% vs. 17.5%, $p=0.03$ and 44.3 vs. 8.5 mg/L, $p<0.001$ respectively). PD was associated with higher CRP levels in AMI patients (52.5 vs. 36.1 mg/L, $p=0.04$) as well as in ANCD subjects, however, in this group this was not significant (12.6 vs. 7.6 mg/L, $p=0.5$). Multivariable regression analysis confirmed two separate measures of PD as strong and independent contributors to elevated CRP levels in AMI patients ($R^2 = 0.28$, $R^2 = 0.30$, $p=0.001$). CONCLUSIONS: PD contributes to elevated CRP levels in non-diabetic, non-smoking AMI patients, independently of other confounding factors. These findings imply that periodontitis may emerge as a novel target for reducing future risk in AMI survivors.

181. Koromantzou, P. A., K. Makrilakis, et al. (2012). "Effect of non-surgical periodontal therapy on C-reactive protein, oxidative stress, and matrix metalloproteinase (MMP)-9 and MMP-2 levels in patients with type 2 diabetes: a randomized controlled study." J Periodontol 83(1): 3-10.

BACKGROUND: It is well accepted that glycemic control in patients with diabetes mellitus (DM) is affected by systemic inflammation and oxidative stress. The effect of periodontal therapy on these systemic factors may be related to improvement on glycemic status. The aim of the present study is to assess over a period of 6 months the effect of non-surgical periodontal therapy on serum levels of high-sensitivity C-reactive protein (hsCRP), d-8-iso prostaglandin F_{2a} (d-8-iso) as a marker of oxidative stress, and matrix metalloproteinase (MMP)-2 and MMP-9 on patients with type 2 DM. METHODS: Sixty participants with type 2 DM and moderate to severe periodontal disease were randomized into intervention (IG) and control (CG) groups. IG received scaling and root planing, whereas CG received supragingival cleaning at baseline and scaling and root planing at 6 months. Participants of both groups were evaluated at baseline and 1, 3, and 6 months. Periodontal data recorded at each visit included probing depth, clinical attachment loss, bleeding on probing, and gingival index. Blood was collected at each visit for the assay of serum glycated hemoglobin A1c (A1c), hsCRP, d-8-iso, MMP-2, and MMP-9. RESULTS: Although there was a trend to a reduction in hsCRP, d-8-iso and MMP-9 it did not reach statistical significance. MMP-2 levels remained unchanged after periodontal treatment. CONCLUSION: Effective non-surgical periodontal treatment of participants with type 2 DM and moderate to severe periodontal disease improved significantly A1c levels but did not result in a statistically significant improvement in hsCRP, d-8-iso, MMP-2, and MMP-9 levels.

182. Kumar, S., P. Satheesh, et al. (2011). "Gagging." N Y State Dent J 77(4): 22-27.

Gagging is a protective reflex to stop unwanted entry into the mouth and oropharynx. Some people have a reduced or absent reflex, while others have a pronounced one. Pronounced gag reflexes can compromise all aspects of dentistry, from the diagnostic procedures of examination and radiography to any form of active treatment. In some patients with marked gagging reflexes, it can lead to avoidance of treatment. Many techniques have been described that attempt to overcome this problem, and a variety of management strategies is necessary to aid the delivery of dental care. This is a review of the etiology of gagging problems, clinical assessment, and their classification and categorization prior to clinical treatment. It discusses as well methods for managing patients with gag reflexes during dental treatment.

183. Kunimatsu, T., S. Greenan, et al. (2011). "Use of moderate sedation for a patient with Down syndrome, intellectual disability, and Eisenmenger syndrome: a case report." *Spec Care Dentist* 31(1): 41-43.

For patients who have Eisenmenger syndrome (ES), perioperative risks are high even for noncardiac surgery, such as dental extractions. We report on the case history of a 38-year-old male patient with Down syndrome (DS), intellectual disability (ID), and ES. The patient was scheduled for extraction of the right maxillary second molar tooth. His physical health was poor. Following oxygenation, midazolam was administered intravenously very slowly until the optimum sedative level was obtained, with a total dosage of 3.5 mg. There were no marked changes in vital signs during the perioperative period, and the patient was discharged the same day. This case suggests that moderate or conscious sedation using midazolam for dental treatment of a patient with DS, ID, and ES was well tolerated. Several critical points are presented in this review.

184. Levin, L., R. Ofec, et al. (2011). "Periodontal disease as a risk for dental implant failure over time: a long-term historical cohort study." *J Clin Periodontol* 38(8): 732-737.

OBJECTIVES: To evaluate the long-term survival rates of dental implants according to the patient's periodontal status, as well as to estimate if the effect of periodontal status regarding implant failure is constant throughout the long-term follow-up. **MATERIALS AND METHODS:** This was a historical prospective cohort study design of all consecutive patients operated from 1996 to 2006 at a periodontal clinic. The cohort consisted of 736 patients, with a total of 2336 dental implants. An extended Cox proportional hazards model, which includes interaction terms between survival time and variables of interest, was used. **RESULTS:** Patients' mean (SD) age was 51.13 (12.35). The follow-up time was up to 144 months, with a mean (SD) of 54.4 (35.6) months. The overall implant raw survival rate was 95.9%. The Kaplan-Meier estimates for the cumulative survival rate (CSR) at 108 months were 0.96 and 0.95 for implants inserted into healthy and moderate chronic periodontal patients, respectively. The CSR declined to 0.88 at 108 months for the severe periodontitis group. The extended Cox model revealed that severe chronic status turned out to be a significant risk factor for implant failure after 50 months of follow-up [hazard ratio (HR)=8.06; $p<0.01$]. The extended Cox model for smoking indicates a near-significant effect after 50 months (HR=2.76; $p=0.061$). **CONCLUSIONS:** Periodontal status and smoking are significant risk factors for late implant failures. The HR for periodontal and smoking status are not constant throughout the follow-up period.

185. Liu, Z., W. Zhang, et al. (2012). "Oral hygiene, periodontal health and chronic obstructive pulmonary disease exacerbations." *J Clin Periodontol* 39(1): 45-52.

AIM: To assess the associations of oral hygiene and periodontal health with chronic obstructive pulmonary disease (COPD) exacerbations. **MATERIAL AND METHODS:** In total, 392 COPD patients were divided into frequent and infrequent exacerbation (≥ 2 times and < 2 times in last 12 months) groups. Their lung function and periodontal status were examined. Information on oral hygiene behaviours was obtained by interview. **RESULTS:** In the univariate analysis, fewer remaining teeth, high plaque index (PLI) scores, low tooth brushing times, and low regular supra-gingival scaling were significantly associated with COPD exacerbations (all p -values < 0.05). After adjustment for age, gender, body mass index, COPD severity and dyspnoea severity, the associations with fewer remaining teeth ($p = 0.02$), high PLI scores ($p = 0.02$) and low tooth brushing times ($p = 0.008$) remained statistically significant. When stratified by smoking, fewer remaining teeth (OR = 2.05, 95% CI: 1.04-4.02) and low tooth brushing times (OR = 4.90, 95% CI: 1.26-19.1) among past smokers and high PLI scores (OR = 3.43, 95% CI: 1.19-9.94) among never smokers were significantly associated with COPD exacerbations. **CONCLUSIONS:** Fewer remaining teeth, high PLI scores, and low tooth brushing times are significant correlates of COPD exacerbations, indicating that improving periodontal health and oral hygiene may be a potentially preventive strategy against COPD exacerbations.

186. Lohe, V. K., R. P. Kadu, et al. (2011). "Dental considerations in the patient with Wilson's disease." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 111(1): 20-23.

Wilson's disease was described by Wilson in 1912. It is an autosomal recessive disorder caused by mutations in the ATP7B gene, a membrane-bound copper transporting ATPase. The deficiency of ATP7B protein impairs the biliary copper excretion, resulting in positive copper balance, hepatic copper accumulation, and copper toxicity from oxidant damage. The disease is a form of copper poisoning caused by a defect in the transport of copper that renders the patient unable to handle trace amounts of copper normally present in the diet and hence the clinical manifestations are those typically caused by copper toxicity and primarily involve the liver and the brain. Because effective treatment is available, it is important to make an early diagnosis. In this article, a review of clinical aspects of Wilson's disease, and its impact on dental management and dental considerations are discussed.

187. Malamed, S. F. (2011). "Is the mandibular nerve block passe?" J Am Dent Assoc 142 Suppl 3: 3S-7S.

BACKGROUND: Providing effective pain control is a critical part of dental treatment, yet achieving consistently reliable anesthesia in the mandible has proved elusive. The traditional inferior alveolar nerve block (IANB) has a high failure rate; for example, the failure rate in lateral incisors is 81 percent. As a consequence, new approaches and techniques have been developed. The purpose of this supplement to The Journal of the American Dental Association is to determine whether the mandibular nerve block has become passe. **CONCLUSIONS:** The high failure rate of the IANB can be frustrating for dentists and lead to discomfort for the patient during treatment. The reasons for this high failure rate include thickness of the cortical plate of bone in adults, thickness of the soft tissue at the injection site leading to increased needle deflection, the difficulty of locating the inferior alveolar nerve and the possibility of accessory innervation. Although the IANB can be unreliable, it is used commonly to provide mandibular anesthesia. **CLINICAL IMPLICATIONS:** Pain control is an essential part of dental treatment. Alternative injection techniques and devices that can help increase the success rate of mandibular anesthesia are available.

188. Mandel, L. and M. J. Carunchio (2011). "Rampant caries from oral transmucosal fentanyl citrate lozenge abuse." J Am Dent Assoc 142(4): 406-409.

BACKGROUND: Oral transmucosal fentanyl citrate lozenges (lollipops) are indicated for the oral management of breakthrough cancer pain. When abused, these sucrose-containing lozenges can cause rampant dental caries. **CASE DESCRIPTION:** The authors examined a 19-year-old man whose dentist referred him because of total dental coronal destruction. After the authors questioned the patient, they concluded that his frequent oral use of sucrose-containing opioid fentanyl citrate lozenges across a three-year period caused the dental condition. **CLINICAL IMPLICATIONS:** Dentists should be aware that oral transmucosal fentanyl citrate lozenges are being prescribed off-label for the control of pain from nonmalignant sources. Fentanyl citrate's effective analgesic potency can lead to misuse and potential abuse. Early recognition of its misuse could prevent severe dental caries and the need for extensive dental restoration.

189. Manfredi, M., E. Merigo, et al. (2011). "Bisphosphonate-related osteonecrosis of the jaws: a case series of 25 patients affected by osteoporosis." Int J Oral Maxillofac Surg 40(3): 277-284.

Bisphosphonates (BPs) are used to treat metabolic bone diseases, such as osteoporosis. In this study the occurrence of bisphosphonates-related osteonecrosis of the jaws (BRONJ) is reported in 25 patients who received BP therapy for osteoporosis with different drug schedules. From June 2005 to May 2009, 25 patients affected by BRONJ were observed. A history of oral surgery was reported for 18 patients (72%). Of the 22 patients treated by the authors, 20 (91%) recorded healing improvement with a mean follow-up of 16.6 months, with particular regard for those treated with oral surgery and laser applications (10/22, 45%) who were all characterised by complete mucosal healing over time. The risk of developing BRONJ in patients treated with BP for osteoporosis is lower than in cancer patients, but is not negligible. It is advisable for the prescribing physician to recommend a dental check-up prior to treatment, at least for patients who have not been to the dentist in the last 12 months. An early surgical and possible laser-assisted approach for patients who develop BRONJ is recommended.

190. Martin, W. J. and T. Forouzanfar (2011). "The efficacy of anticonvulsants on orofacial pain: a systematic review." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 111(5): 627-633.

OBJECTIVE: Controversy exists about the effectiveness of anticonvulsants for the management of orofacial pain disorders. To ascertain appropriate therapies, a systematic review was conducted of existing randomized controlled trials. **STUDY DESIGN:** Trials were identified from PubMed, Cochrane, and Ovid Medline databases from 1962 through March 2010, from references in retrieved reports, and from references in review articles. Eight useful trials were identified for this review. Six studies were randomized placebo-controlled trials and 2 studies were randomized active-controlled. Two independent investigators reviewed these articles by using a 15-item checklist. **RESULTS:** Four studies were classified as "high quality." However, heterogeneity of the trials and the small sample sizes precluded the drawing

of firm conclusions about the efficacy of the interventions studied on orofacial pain patients. CONCLUSIONS: There is limited to moderate evidence supporting the efficacy of commonly used anticonvulsants for treatment of patients with orofacial pain disorders. More randomized controlled trials are needed on the efficacy of anticonvulsants.

191. McGrady, M. G., R. P. Ellwood, et al. (2011). "The water fluoridation debate." Dent Update 38(1): 12-14, 16-18, 20-12.

Water fluoridation schemes have been employed for over 50 years. Water fluoridation has been a source of continuous debate between those who advocate its use as a public health measure and those who oppose it. There have been no new fluoridation schemes in the U.K. for nearly 30 years owing to principally legislative, but also geographic, financial, and political reasons. However, in early 2008, the U.K. Secretary of State for Health promoted the use of water fluoridation schemes for areas in England with the highest rates of decay. This article, the third and final article of three, aims to discuss the arguments surrounding water fluoridation and its continued relevance as a public health measure. CLINICAL RELEVANCE: This article aims to provide an update for general practitioners for the background and the current status of the water fluoridation debate and to enable them to answer non-clinical questions raised by patients

192. Moller, E., M. Karlsborg, et al. (2011). "Treatment of severe drooling with botulinum toxin in amyotrophic lateral sclerosis and Parkinson's disease: efficacy and possible mechanisms." Acta Odontol Scand 69(3): 151-157.

OBJECTIVE: Drooling in neurodegenerative diseases is associated with social impediment. Previous treatments of drooling have little effect or are effective but with severe side effects. Therefore, there is a need to test new methods such as the use of botulinum toxin type A (BTX-A). MATERIAL AND METHODS: This open, prospective study deals with treatment of drooling in 12 patients with amyotrophic lateral sclerosis and three with Parkinson's disease. Injections of BTX-A (Botox) were given into the parotid (25-40 units) and submandibular (15-30 units) glands with ultrasonographic guidance. After BTX-A treatment, the patients were followed for 2 months with evaluations every second week by means of self-assessed rating scales for drooling intensity, discomfort and treatment effect, and determination of unstimulated whole saliva (UWS) flow rate, and inorganic and organic UWS composition. The treatment was repeated up to four times, but seven patients dropped out shortly after the first treatment due to marked worsening of their disease-related condition. RESULTS: Drooling and flow were reduced ($P < 0.05$) 2 weeks after treatment, without side-effects. The maximal reductions during the observation period were 40% for drooling and 30% for flow. There was a systematic variation in flow during the observation period, with an initial decrease and then an increase followed by a second decrease. Amylase activity and total protein concentration generally increased with decreasing flow ($P \leq 0.03$). CONCLUSION: Inhibition of acetylcholine release from postganglionic parasympathetic nerve endings by injection of BTX-A into salivary glands seemed useful for secondary sialorrhoea, although cyclic variations in flow may occur, possibly due to transitory sprouting and regeneration.

193. Moore, P. A., M. A. Cuddy, et al. (2011). "Periodontal ligament and intraosseous anesthetic injection techniques: alternatives to mandibular nerve blocks." J Am Dent Assoc 142 Suppl 3: 13S-18S.

BACKGROUND: and Overview. The provision of mandibular anesthesia traditionally has relied on nerve block anesthetic techniques such as the Halsted, the Gow-Gates and the Akinosi-Vazirani methods. The authors present two alternative techniques to provide local anesthesia in mandibular teeth: the periodontal ligament (PDL) injection and the intraosseous (IO) injection. The authors also present indications for and complications associated with these techniques. CONCLUSIONS: The PDL injection and the IO injection are effective anesthetic techniques for managing nerve block failures and for providing localized anesthesia in the mandible. CLINICAL IMPLICATIONS: Dentists may find these techniques to be useful alternatives to nerve block anesthesia.

194. Moravec, L. J. and L. D. Boyd (2011). "Bariatric surgery and implications for oral health: a case report." J Dent Hyg 85(3): 166-176.

PURPOSE: A case representative of issues dental practitioners may face when providing care to patients with a history of bariatric surgery is reviewed. Meta-analysis shows that, following bariatric surgery, 43 to 79% of diabetes, hyperlipidemia and hypertension in patients resolved to normal levels or no longer required therapy. However, bariatric surgery side effects have implications for oral health, including nutrient deficiencies impacting healing of oral tissues and gastroesophageal reflux, resulting in tooth erosion. Patients who have undergone bariatric surgery are seen with increasing frequency in dental offices and dental professionals need to be familiar with the challenges these patients present.

195. Morita, I., K. Inagaki, et al. (2012). "Relationship between periodontal status and levels of glycated hemoglobin." J Dent Res 91(2): 161-166.

The objective of this study was to assess whether there is a bi-directional relationship between periodontal status and diabetes. Study 1 included 5,856 people without periodontal pockets of ≥ 4 mm at baseline. Relative risk was estimated for the 5-year incidence of periodontal pockets of ≥ 4 mm (CPI scores 3 and 4, with the CPI probe), in individuals with glycated hemoglobin (HbA1c) levels of $\geq 6.5\%$ at baseline. Study 2 included 6,125 people with HbA1c $< 6.5\%$ at baseline. The relative risk was assessed for elevation of HbA1c levels in 5 years, with baseline periodontal status, assessed by CPI. Relative risk of developing a periodontal pocket was 1.17 ($p = 0.038$) times greater in those with HbA1c of $\geq 6.5\%$ at baseline, adjusted for body mass index (BMI), smoking status, sex, and age. Relative risks for having HbA1c $\geq 6.5\%$ at 5-year follow-up in groups with periodontal pockets of 4 to 5 mm and ≥ 6 mm at baseline were 2.47 ($p = 0.122$) and 3.45 ($p = 0.037$), respectively, adjusted for BMI, alcohol consumption, smoking status, sex, and age. The risk of developing periodontal disease was associated with levels of HbA1c, and the risk of elevations of HbA1c was associated with developing periodontal pockets of more than 4 mm.

196. Needleman, I. G., N. P. Hirsch, et al. (2011). "Randomized controlled trial of toothbrushing to reduce ventilator-associated pneumonia pathogens and dental plaque in a critical care unit." J Clin Periodontol 38(3): 246-252.

AIM: To investigate the effect of a powered toothbrush on colonization of dental plaque by ventilator-associated pneumonia (VAP)-associated organisms and dental plaque removal. MATERIALS AND METHODS: Parallel-arm, single-centre, examiner- and analyst-masked randomized controlled trial. Forty-six adults were recruited within 48 h of admission. Test intervention: powered toothbrush, control intervention: sponge toothette, both used four times per day for 2 min. Groups received 20 ml, 0.2% chlorhexidine mouthwash at each time point. RESULTS: The results showed a low prevalence of respiratory pathogens throughout with no statistically significant differences between groups. A highly statistically significantly greater reduction in dental plaque was produced by the powered toothbrush compared with the control treatment; mean plaque index at day 5, powered toothbrush 0.75 [95% confidence interval (CI) 0.53, 1.00], sponge toothette 1.35 (95% CI 0.95, 1.74), $p=0.006$. Total bacterial viable count was also highly statistically significantly lower in the test group at day 5; Log(10) mean total bacterial counts: powered toothbrush 5.12 (95% CI 4.60, 5.63), sponge toothette 6.61 (95% CI 5.93, 7.28), $p=0.002$. CONCLUSIONS: Powered toothbrushes are highly effective for plaque removal in intubated patients in a critical unit and should be tested for their potential to reduce VAP incidence and health complications.

197. Noble, W. H., T. E. Donovan, et al. (2011). "Sports drinks and dental erosion." J Calif Dent Assoc 39(4): 233-238.

Sports drinks were originally developed to improve hydration and performance in athletes taking part in intense or endurance sporting events. These drinks contain relatively high amounts of carbohydrates (sugars), salt, and citric acid. These ingredients create the potential for dental ramifications and overall public health consequences such as obesity and diabetes. High intake of sports drinks during exercise, coupled with xerostomia from dehydration, may lead to the possibility of erosive damage to teeth.

198. Orr, T. M. and D. L. Orr, 2nd (2011). "Methemoglobinemia secondary to over-the-counter Anbesol." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 111(2): e7-e11.

BACKGROUND: Methemoglobinemia is a potentially lethal condition which may result from exposure to benzocaine. It must be treated promptly, because it may cause a significant decrease in oxygen delivery to tissues and organs. CASE DESCRIPTION: A 39-year-old caucasian man presented to the emergency department (ED) with dental pain. After a review of systems and a dental exam, an oxygen saturation of 90% was noted. The patient reported no previous cardiac or pulmonary pathology, but did report using a large amount of over-the-counter Anbesol. A second oxygen saturation measurement had fallen to 87%. An arterial blood gas sample was taken, and the patient was found to have high levels of methemoglobin. He was transferred to the critical care ED and treated with 2 mg/kg intravenous methylene blue. CLINICAL IMPLICATIONS: Dentists must be aware of the possible lethal effects of benzocaine toxicity, including methemoglobinemia. It is important to recognize the signs and symptoms and act in a judicious manner.

199. Padhye, M., S. Gupta, et al. (2011). "PSA block for maxillary molar's anesthesia - an obsolete technique?" Oral Surg Oral Med Oral Pathol Oral Radiol Endod 112(6): e39-43.

BACKGROUND: Routine use of posterior superior alveolar (PSA) nerve block or maxillary infiltration for the removal of maxillary molars has been validated. **OBJECTIVE:** The present study was undertaken to determine the relative contribution of posterior superior alveolar (PSA) block in cases of anesthesia required for maxillary molars. **STUDY DESIGN:** One hundred patients requiring removal of maxillary second and third molars were enrolled. These patients were divided into 2 groups. One group received infiltration for anesthesia and other group received PSA nerve block using lignocaine with vasoconstrictor. All extractions were performed using a consistent technique of intraalveolar extraction. Data relating to the pain during extraction obtained on a visual analog scale and a verbal response scale, requirement of repeated injection for anesthesia, efficacy of these injections in localized infections, and requirement of rescue analgesics 3 hours after extraction. **RESULTS:** Statistical data confirmed clinical equivalence between infiltration and PSA nerve block. **CONCLUSIONS:** Considering the difficulty in mastering the technique of PSA nerve block, and the possibility of more complications associated with it (compared with infiltration); it may not be necessary for anesthesia of maxillary molars.

200. Parthasarathi, K., A. Smith, et al. (2011). "Factors affecting incidence of dry socket: a prospective community-based study." J Oral Maxillofac Surg 69(7): 1880-1884.

Dry socket, or alveolar osteitis, can occur because of the removal of teeth. No clear etiology has been acknowledged; however, numerous risk factors have been proposed and tested. We report on the results of a prospective, multicenter study of the incidence and factors affecting the occurrence of alveolar osteitis at the Royal Dental Hospital of Melbourne and Community Dental Clinics in Melbourne, Australia. Ethics approval was gained from the University of Melbourne and Dental Health Services Victoria. The data were analyzed in a descriptive fashion, and the factors affecting alveolar osteitis were assessed using logistic regression analysis. The incidence of alveolar osteitis was 2.3% of all teeth extracted, with 4.2% of all patients experiencing alveolar osteitis in a public dental setting. Multivariate analysis revealed operator experience, perioperative crown and root fractures, periodontal disease, posterior teeth, and, interestingly, the use of mental health medications to be significant independent risk factors for the development of alveolar osteitis. No alveolar osteitis was reported in patients taking antibiotics, the oral contraceptive pill, bisphosphonates, or oral steroid drugs. Smoking and extraction technique (either operative or nonoperative) were also not found to significantly affect the development of alveolar osteitis.

201. Patel, A., J. A. von Fraunhofer, et al. (2011). "What every dentist should know about zinc." Gen Dent 59(2): 110-114.

Zinc plays an important role in human physiology, from its involvement in the proper function of the immune system to its role in cellular growth, cell proliferation, and cell apoptosis as well as its essential role in the activity of numerous zinc-binding proteins. However, zinc also plays a key pathophysiological role in major neurological disorders and diabetes. Zinc deficiency is a worldwide problem, whereas excessive intake of zinc is relatively rare. Many patients are exposed to zinc on a regular basis through dentistry as a result of its use in certain restorative materials, mouthwashes, toothpastes and, notably, denture adhesives. Of particular importance to dental professionals are various case reports concerning the neurologic effects of excess zinc intake by patients who routinely use large quantities of zinc-containing denture adhesives. This review presents relevant information concerning the use of zinc in dentistry.

202. Priest, G. (2011). "Revisiting tooth preservation in prosthodontic therapy." J Prosthodont 20(2): 144-152.

Dental implants have been established as long-term supports for tooth replacements, and they have profoundly altered treatment concepts of traditional prosthodontics. The use of teeth as prosthetic abutments is revisited relative to implants as predictable support mechanisms for fixed and removable prostheses. The purpose of this review is to appraise tooth preservation in a different manner while considering implants as additional and even preferred support mechanisms for dental prostheses. Data reviewed in this article include a comparison of implants and traditional prostheses and their effects on abutment teeth, the use of periodontally and endodontically compromised teeth as abutments, and prosthetic complications potentially created by healthy remaining teeth. The evidence presented suggests that the longstanding objective of tooth preservation during prosthetic treatment be appended to include the use of dental implants for fixed/removable prostheses, and to avoid or remove teeth presenting as liabilities that diminish the overall prognosis. Patients are not well served if they are faced with biologic, economic, and psychological burdens associated with ongoing revisions of dental rehabilitations using natural teeth. Dentists must use all means available to carefully evaluate remaining teeth to determine if they benefit or impair proposed prosthetic outcomes.

203. Rosema, N. A., N. L. Hennequin-Hoenderdos, et al. (2011). "The effect of different interdental cleaning devices on gingival bleeding." J Int Acad Periodontol 13(1): 2-10.

OBJECTIVE: To compare the effectiveness of an oral irrigator (OI) with a prototype jet tip or a standard jet tip to floss as adjunct to daily toothbrushing on gingival bleeding. **METHODS:** In this single masked, 3-group parallel, 4-week home use experiment, 108 subjects were randomly assigned to one of three groups: 1) OI with a prototype jet tip; 2) OI with a standard jet tip; 3) waxed dental floss. All groups used their assigned product once a day as adjunct to twice daily toothbrushing for two minutes with a standard ADA reference toothbrush. Professional instructions were given by a dental hygienist in OI use or floss use according to written instructions. All subjects also received a toothbrush instruction leaflet (Bass technique). Subjects were assessed for both bleeding and plaque at baseline and after two weeks and four weeks and were instructed to brush their teeth approximately 2 to 3 hours prior to their assessment. **RESULTS:** With respect to mean bleeding scores the ANCOVA analysis with baseline as covariate and week 4 as dependent variable showed a significant difference between groups in favor of both the oral irrigator groups. For plaque, however, no significant difference among groups was observed. **CONCLUSION:** When combined with manual toothbrushing the daily use of an oral irrigator, either with prototype or standard jet tip, is significantly more effective in reducing gingival bleeding scores than is the use of dental floss, as determined within the limits of this 4-week study design.

204. Salama, F. S., A. Kebriaei, et al. (2011). "Oral care for special needs patients: a survey of Nebraska general dentists." Pediatr Dent 33(5): 409-414.

PURPOSE: The purpose of this survey was to assess the attitudes, behavior, and demographics of general dentists in Nebraska regarding their providing oral health care to patients with special health care needs (PSHCN). **METHODS:** A 14-item questionnaire and accompanying cover letter were sent to 800 licensed general dentists in Nebraska. The survey asked for the dentists' demographic information and questions about their PSCHN. Responses to the questionnaire were tabulated, and percent frequency distributions for responses to each item were computed. **RESULTS:** Of the 800 surveys sent, 371 (approximately 46%) were returned. Solo practitioners were more likely to report seeing PSCHN ($P < .001$). Most respondents see all ages, but approximately 10% see only PSCHN over 18-years-old. The most common reasons given to improve the practitioners' ability to care for PSCHN were improved reimbursement (approximately 35%) and more continuing education (approximately 36%). **CONCLUSIONS:** These data indicate that most general dentists surveyed in Nebraska see special needs patients of all ages. The most common

reasons for not seeing more special needs patients were the level of the patient's disease, the patient's behavior, and insufficient training/experience.

205. Sammartino, G., D. M. Dohan Ehrenfest, et al. (2011). "Prevention of hemorrhagic complications after dental extractions into open heart surgery patients under anticoagulant therapy: the use of leukocyte- and platelet-rich fibrin." J Oral Implantol 37(6): 681-690.

Leukocyte- and platelet-rich fibrin (L-PRF) is a biomaterial commonly used in periodontology and implant dentistry to improve healing and tissue regeneration, particularly as filling material in alveolar sockets to regenerate bone for optimal dental implant placement. The objective of this work was to evaluate the use of L-PRF as a safe filling and hemostatic material after dental extractions (or avulsions) for the prevention of hemorrhagic complications in heart surgery patients without modification of the anticoagulant oral therapy. Fifty heart surgery patients under oral anticoagulant therapy who needed dental extractions were selected for the study. Patients were treated with L-PRF clots placed into 168 postextraction sockets without modification of anticoagulant therapy (mean international normalized ratio = 3.16 ± 0.39). Only 2 patients reported hemorrhagic complications (4%), all of which resolved a few hours after the surgery by compression and hemostatic topical agents. Ten patients (20%) showed mild bleeding, which spontaneously resolved or was resolved by minimal compression less than 2 hours after surgery. No case of delayed bleeding was reported. The remaining 38 patients (76%) showed an adequate hemostasis after the dental extractions. In all cases, no alveolitis or painful events were reported, soft tissue healing was quick, and wound closure was always complete at the time of suture removal one week after surgery. The proposed protocol is a reliable therapeutic option to avoid significant bleeding after dental extractions without the suspension of the continuous oral anticoagulant therapy in heart surgery patients. Other applications of the hemostatic and healing properties of L-PRF should be investigated in oral implantology.

206. Sanikop, S., P. Agrawal, et al. (2011). "Relationship between dental anxiety and pain perception during scaling." J Oral Sci 53(3): 341-348.

Dental pain, anxiety and fear are important factors that prevent patients from seeking dental care. In this study, we aimed to evaluate the pain perception of patients during scaling and its relationship with dental anxiety. One hundred dental patients participated in the study. Pain levels after scaling were assessed with a Visual Analog Scale (VAS) and an Anxiety Questionnaire consisting of seven questions. The mean VAS score for the entire study group was 17.3 +/- 13.8 with no statistically significant differences between gender and different age groups. The mean anxiety score was 11.66 +/- 4.17. This was significantly higher in women ($P = 0.005$), but there were no statistically significant differences between different age groups. There was a statistically significant correlation between VAS and total anxiety score ($P < 0.001$) as well as each question, except for questions number 3 and 4 in men. Patients were found to experience only limited pain during scaling. They were anxious because they expected pain, women being more anxious than men. Hence, dentists should seek to alleviate or reduce pain and anxiety related to treatment not only to successfully complete the treatment, but also to sustain and carry the patients into successful maintenance and patient recall.

207. Sant'Ana, A. C., M. R. Campos, et al. (2011). "Periodontal treatment during pregnancy decreases the rate of adverse pregnancy outcome: a controlled clinical trial." *J Appl Oral Sci* 19(2): 130-136.

OBJECTIVES: The aim of this study was to evaluate the effects of non-surgical treatment of periodontal disease during the second trimester of gestation on adverse pregnancy outcomes. **MATERIAL AND METHODS:** Pregnant patients during the 1st and 2nd trimesters at antenatal care in a Public Health Center were divided into 2 groups: NIG--"no intervention" ($n=17$) or IG--"intervention" ($n=16$). IG patients were submitted to a non-surgical periodontal treatment performed by a single periodontist consisting of scaling and root planning (SRP), professional prophylaxis (PROPH) and oral hygiene instruction (OHI). NIG received PROPH and OHI during pregnancy and were referred for treatment after delivery. Periodontal evaluation was performed by a single trained examiner, blinded to periodontal treatment, according to probing depth (PD), clinical attachment level (CAL), plaque index (PI) and sulcular bleeding index (SBI) at baseline and 35 gestational weeks-28 days post-partum. Primary adverse pregnancy outcomes were preterm birth (<37 weeks), low birth weight (<2.5 kg), late abortion (14-24 weeks) or abortion (<14 weeks). The results obtained were statistically evaluated according to OR, unpaired t test and paired t test at 5% significance level. **RESULTS:** No significant differences were observed between groups at baseline examination. Periodontal treatment resulted in stabilization of CAL and PI ($p>0.05$) at IG and worsening of all periodontal parameters at NIG ($p<0.0001$), except for PI. Significant differences in periodontal conditions of IG and NIG were observed at 2nd examination ($p<0.001$). The rate of adverse pregnancy outcomes was 47.05% in NIG and 6.25% in IG. Periodontal treatment during pregnancy was associated to a decreased risk of developing adverse pregnancy outcomes [OR=13.50; CI: 1.47-123.45; $p=0.02$]. **CONCLUSIONS:** Periodontal treatment during the second trimester of gestation contributes to decrease adverse pregnancy outcomes.

208. Sharaf, B. and T. B. Dodson (2011). "Does the use of prophylactic antibiotics decrease implant failure?" *Oral Maxillofac Surg Clin North Am* 23(4): 547-550, vi.

The use of prophylactic antibiotics in implant dentistry is controversial. Given the known risks of antibiotic treatment and lack of consensus on using antibiotics at the time of implant insertion, the purpose of this article was to review available studies on use of perioperative prophylactic antibiotics at the time of implant placement and to provide evidence-based recommendations for antibiotic use. The reviewed studies suggest that a single preoperative dose of 2 g amoxicillin 1 hour before implant placement or 1 g amoxicillin 1 hour preoperatively and 500 mg 4 times daily 2 days postoperatively can reduce the rate of implant failure.

209. Sharma, N. C., J. Qaqish, et al. (2011). "The plaque removal efficacy of a novel power brush head." *J Clin Dent* 22(1): 19-22.

OBJECTIVE: To assess the plaque removal efficacy of an oscillating/rotating power toothbrush with novel brush head (Oral-B Precision Clean) in comparison to an American Dental Association (ADA) reference manual toothbrush. **METHODS:** This was a replicate-use, single-brushing, two-treatment, examiner-blind, randomized, four-period (visit) study with a crossover design. At each visit, subjects disclosed their plaque with disclosing solution for one minute, and an examiner performed a baseline (pre-brushing) plaque examination (Rustogi, et al. Modification of the Navy Plaque Index). Subjects were then instructed to brush for two minutes (according to manufacturer's instructions) with their assigned power toothbrush or as they normally do with the ADA manual brush under supervision, after which they again disclosed their plaque and were given a post-brushing plaque examination. **RESULTS:** Both the power brush and manual brush showed statistically significant plaque reductions from baseline for the whole mouth, along the gingival margin, and on approximal surfaces. The power brush showed statistically significant advantages ($p < 0.001$) over the manual brush in plaque reduction for whole mouth (28.8%), gingival margin (44.3%), and approximal surfaces (20.7%).

CONCLUSION: The oscillating/rotating power toothbrush with a novel brush head showed statistically significantly superior plaque reduction (whole mouth, gingival margin, and approximal surfaces) compared to a manual toothbrush.

210. Sischo, L. and H. L. Broder (2011). "Oral health-related quality of life: what, why, how, and future implications." J Dent Res 90(11): 1264-1270.

Despite its relatively recent emergence over the past few decades, oral health-related quality of life (OHRQoL) has important implications for the clinical practice of dentistry and dental research. OHRQoL is a multidimensional construct that includes a subjective evaluation of the individual's oral health, functional well-being, emotional well-being, expectations and satisfaction with care, and sense of self. It has wide-reaching applications in survey and clinical research. OHRQoL is an integral part of general health and well-being. In fact, it is recognized by the World Health Organization (WHO) as an important segment of the Global Oral Health Program (2003). This paper identifies the what, why, and how of OHRQoL and presents an oral health theoretical model. The relevance of OHRQoL for dental practitioners and patients in community-based dental practices is presented. Implications for health policy and related oral health disparities are also discussed. A supplemental Appendix contains a Medline and ProQuest literature search regarding OHRQoL research from 1990-2010 by discipline and research design (e.g., descriptive, longitudinal, clinical trial, etc.). The search identified 300 articles with a notable surge in OHRQoL research in pediatrics and orthodontics in recent years.

211. Solanki, M., D. K. Baweja, et al. (2011). "Ascorbic acid deficiency: a case report." J Dent Child (Chic) 78(2): 115-119.

Scurvy is well known since ancient times, but it is rarely seen in the developed world today owing to the discovery of its link to the dietary deficiency of ascorbic acid. It is very uncommon in the pediatric population, and is usually seen in children with severely restricted diet attributable to psychiatric or developmental disturbances. The condition presents itself by the formation of perifollicular petechiae and bruising, gingival inflammation and bleeding, and, in children, bone disease. We report a case of scurvy in a 10-year-old developmentally delayed boy who had a diet markedly deficient in vitamin C resulting from extremely limited food choices. He presented with debilitating bone pain, inflammatory gingival disease, and perifollicular hyperkeratosis. The diagnosis was made based on clinical and radiographic findings. The importance of diet history is emphasized. We present this case with the aim to help the clinician identify scurvy and implement treatment for a potentially fatal but easily curable disease.

212. van der Weijden, F. and D. E. Slot (2011). "Oral hygiene in the prevention of periodontal diseases: the evidence." Periodontol 2000 55(1): 104-123.

213. Waldman, H. B., D. Cannella, et al. (2011). "A more intellectually, medically and physically disabled society: the case of the United States." Pa Dent J (Harrisb) 78(2): 22-26.

To bring attention to the fact that repeated emphasis on the worldwide increasing number of elderly, with only a passing reference to the magnitude and consequences of the hundreds of millions of elderly with disabilities, neglects to consider the associated burgeoning human and financial costs.

214. Weiss, A., R. Movahed, et al. (2011). "Schizophrenia: current therapy and review." J Oral Maxillofac Surg 69(1): 192-198.

Schizophrenia is a disorder that affects a significant portion of the population. This case report and review article discusses potential causes and pathophysiology. The treatment of schizophrenia is outlined in detail, followed by a discussion of the perioperative management of schizophrenic patients, highlighting important information to keep in mind when treating this patient population.

215. Wilson, K. E., R. J. Thorpe, et al. (2011). "Complications associated with intravenous midazolam sedation in anxious dental patients." Prim Dent Care 18(4): 161-166.

AIM: This prospective study was designed to establish the nature, frequency and sequelae of complications arising in patients receiving dental treatment under intravenous midazolam sedation. METHODS: All patients attending the Sedation Department at New-castle Dental Hospital for intravenous sedation over a six-month period were audited. A standardised data-collection pro forma was designed in order to collect data relating to the patient, the sedation episode, the dental treatment and any complications arising. The published standard used in this study states that the incidence of complications should be no more than 8%. RESULTS: Four hundred and one patients were included. The mean dose of midazolam administered was 7.6 mg with a mean titration rate of 0.9 mg/min. Complications were

reported in 12 patients (3%), 11 of which were minor and one moderate. All complications were managed successfully within the department with no lasting sequelae. Treatment was completed in 382 (95.7%) patients, with failure to complete treatment in 17 (4.3%) patients due to disinhibition (1), poor cooperation (10), and the sedation wearing off (6). **CONCLUSION:** The standard was met because complications arising were infrequent (3%) and predominantly minor in nature. Complications were managed conservatively and effectively, with all patients being discharged home the same day with no lasting sequelae. The study demonstrates that intravenous midazolam provides a safe sedation technique, suitable for adult dental patients in primary care, when administered by trained personnel on carefully selected patients and in accordance with nationally agreed protocols and guidelines.

216. Wright, E. F. (2011). "Medial pterygoid trismus (myospasm) following inferior alveolar nerve block: case report and literature review." *Gen Dent* 59(1): 64-67.

A patient developed a medial pterygoid trismus (myospasm) the day after receiving three inferior alveolar nerve blocks and a routine restoration. She had a significantly restricted mouth opening and significant medial pterygoid muscle pain when she opened beyond the restriction; however, she had no swelling, lymphadenopathy, or fever. A medial pterygoid myospasm can occur secondary to an inferior alveolar nerve block. This disorder generally is treated by the application of heat, muscle stretches, analgesic and/or muscle relaxant ingestion, and a physical therapy referral. The severity of the disorder typically dictates the extent of therapy that is needed.

217. Yagiela, J. A. (2011). "What's new with phentolamine mesylate: a reversal agent for local anaesthesia?" *SAAD Dig* 27: 3-7.

Phentolamine mesylate (OraVerse), a nonselective α -adrenergic blocking drug, is the first therapeutic agent marketed for the reversal of soft-tissue anaesthesia and the associated functional deficits resulting from an intraoral submucosal injection of a local anaesthetic containing a vasoconstrictor. In clinical trials, phentolamine injected in doses of 0.2 to 0.8 mg (0.5 to 2 cartridges), as determined by patient age and volume of local anaesthetic administered, significantly hastened the return of normal soft-tissue sensation in adults and children 6 years of age and older. Median lip recovery times were reduced by 75 to 85 minutes. Functional deficits, such as drooling and difficulty in drinking, smiling, or talking--and subjects' perception of altered function or appearance--were consistently resolved by the time sensation to touch had returned to normal. Adverse effects of phentolamine injected in approved doses for reversal of local anaesthesia in patients ranging in age from 4 to 92 years were similar in incidence to those of sham injections, and no serious adverse events caused by such use were reported. The clinical use of phentolamine is viewed favorably by dentists who have administered the drug and by patients who have received it. Optimal use may require some modifications of the technique described in the package insert; cost of the agent may be influencing its widespread adoption into clinical practice. Phentolamine mesylate, in the form of OraVerse (Novalar Pharmaceuticals, San Diego, USA) represents a new therapeutic class of drugs in dentistry intended to reverse soft-tissue anaesthesia after nonsurgical dental procedures (e.g., restorative or deep scaling/root planing procedures). As shown in Figure 1, OraVerse is manufactured in 1.7 mL dental cartridges, each of which contains 0.4 mg active drug. This review describes the development of phentolamine as a dental drug, its pharmacologic characteristics, and how it may be used in clinical practice to improve patient care.

218. Zanata, R. L., T. C. Fagundes, et al. (2011). "Ten-year survival of ART restorations in permanent posterior teeth." *Clin Oral Investig* 15(2): 265-271.

This study evaluated the 10-year clinical performance of high-viscosity glass-ionomer cement placed in posterior permanent teeth by means of the Atraumatic Restorative Treatment (ART) approach. One operator placed 167 single- and 107 multiple-surface restorations in 43 high-risk caries pregnant women (mean decayed teeth = 9.8 +/- 5.5). Examinations were performed at 1-, 2-, and 10-year intervals according to ART criteria. In the last evaluation, the US Public Health Service (USPHS) criteria were also used. After 10 years, 129 restorations (47.1%) were evaluated and achieved a cumulative survival rate of 49.0% (SE 7.2%). The 10-year survival of single- and multiple-surface ART restorations assessed using the ART criteria were 65.2% (SE 7.3%) and 30.6% (SE 9.9%), respectively. This difference was significant (jackknife SE of difference; $p < 0.05$). Using the USPHS criteria, the 10-year survival of single- and multiple-surface ART restorations were 86.5% and 57.6%, respectively. The primary causes of failure were total loss (9.3%) and marginal defects (5.4%). The survival rates observed, especially for the single-surface restorations, confirm the potential of the ART approach for restoring and saving posterior permanent teeth.

219. Ziebolz, D., A. Hildebrand, et al. (2012). "Long-term effects of tongue piercing--a case control study." *Clin Oral Investig* 16(1): 231-237.

The aim of this study was to evaluate tooth and periodontal damage in subjects wearing a tongue piercing (TP) in comparison to matched control subjects without tongue piercing. Members of the German Federal Armed Forces who had TP (group TP) and a matched control group (group C) volunteered to take part in the study. The time in situ, localization and material of TP were documented. Dental examinations included DMF-T, oral hygiene, enamel fissures (EF), enamel cracks (EC) and recessions. Statistical analysis was determined by chi (2) test and the t test. Both groups had 46 male subjects (mean age 22.1 years). The piercings had been in situ for 3.8 +/- 3.1 years. Subjects in the TP group had a total of 1,260 teeth. Twenty-nine subjects had 115 teeth (9.1%) with EF (67% lingual). In group C (1,243 teeth), 30 subjects had 60 teeth with EF (4.8%, 78% vestibular) ($p < 0.01$). Thirty-eight subjects belonging to group TP had EC in 186 teeth (15%). In group C, 26 subjects with 56 teeth (4.5%) were affected by EC ($p < 0.001$). Twenty-seven subjects in group TP had 97 teeth (7.7%) with recessions. Lingual surfaces of anterior teeth in the lower jaw were affected most frequently (74%). In group C, 8 subjects had 19 teeth (1.5%) with recessions (65% vestibular). Differences between the two groups were statistically significant ($p < 0.001$). Tongue piercing is correlated with an increased occurrence of enamel fissures, enamel cracks and lingual recessions. Patients need better information on the potential complications associated with tongue piercing.