

2011 ANNUAL SEMINAR LOUISVILLE KENTUCKY

Special Care Advocates in Dentistry 2011 Lit. Review

(SAID's Search of Dental Literature Published
in Calendar Year 2010*)



Compiled by:
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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 2010*

Language = English

SAID Search-Term Results 4,871

Initial Selection Result = 525 articles

Final Selection Result = 184 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. Acharya, B. S., P. Ritwik, et al. (2010). "Dental trauma in children and adolescents with mental and physical disabilities." *Tex Dent J* 127(12): 1265-1272.**

AIM: to determine the occurrence of dental trauma in children and adolescents with a mental and/or physical disability compared to otherwise healthy children, and to assess factors associated with and mechanism of such trauma. METHODS: Eighty-six subjects consisting of 43 special needs and 43 otherwise healthy children between the ages of 8 and 15 years were chosen from the patient pool at Special Children's Dental Clinic within Children's Hospital, New Orleans. The study utilized a parent interview questionnaire and a clinical exam of the patient. RESULTS: Although healthy children had a higher number of injuries than children with special needs on average, the difference was not statistically significant. Neither healthy children nor children with special needs exhibited a significant correlation between the number of injuries and the size of the overjet (mm) ($p=0.722$, 0.712). There was not a significant difference in the number of injuries for children with different oral profiles ($p=0.949$), or adequate versus inadequate lip coverage ($p=0.940$). CONCLUSION: In this study population, the children with special needs living at home may have had the same amount of trauma as the otherwise healthy children and studies with larger sample sizes may be needed to further explore this possibility. Excessive overjet, type of facial profile, and adequacy of lip coverage did not seem to increase the amount of trauma noted in our study population.
- 2. Adeyemo, W. L., M. O. Ogunlewe, et al. (2010). "A comparative study of surgical morbidity associated with mandibular third-molar surgery in young and aging populations." *J Contemp Dent Pract* 11(4): E001-008.**

AIM: Prophylactic surgical extraction of impacted third molars is a common practice throughout the world justified on the presumption that the risk of surgical morbidity increases with increasing age, among other reasons. The aim of this study was to analyze and compare surgical morbidity associated with third-molar extractions in young and aging populations. METHODS AND MATERIALS: A review of records for all patients who underwent the surgical extraction of impacted third molars between April 2001 and June 2006 at the Lagos University Teaching Hospital was carried out. RESULTS: A total of 506 patients had surgical extractions of impacted third molars under local anaesthesia during the period of the study. Of these, 470 (92.9 percent) patients were below the age of 40 years (Group A) and 36 (7.1 percent) patients were 40 years of age and older (Group B). No incidences of severe intraoperative complications (excessive bleeding or mandibular fractures) were recorded in either group, but other postoperative complications were reported in 70 (13.8 percent) patients. Of these 70 patients, 65 (92.9 percent) were from Group A and 5 (7.1 percent) were from Group B, and their complications included infected socket, dry socket, paraesthesia, and buccal space abscess. CONCLUSION: No significant difference in post-operative complications following surgical removal of mandibular third molars was found between patients 40 years old and greater and those below age 40. Prophylactic surgical extraction of impacted mandibular third molars, based on the assumption that surgical morbidity increases with age, may not be justifiable. CLINICAL SIGNIFICANCE: Age does not predispose patients who had surgical extraction of mandibular third molars above 40 years of age to any additional surgical complications when compared to patients below the age of 40 years receiving comparable treatment.
- 3. Aframian, D. J., B. Mizrahi, et al. (2010). "Evaluation of a mucoadhesive lipid-based bioerodable tablet compared with Biotene mouthwash for dry mouth relief--a pilot study." *Quintessence Int* 41(3): e36-42.**

OBJECTIVE: Salivary gland impairment is a major problem that can result in hyposalivation and a decrease in quality of life. Causes for mouth dryness can be grossly classified into three major groups: iatrogenic, immunogenic, and metabolic. At present, insufficient therapies exist to ease morbidity in this growing number of affected individuals. A need for new products to relieve oral dryness is mandatory. The aim of this study was to evaluate a mucoadhesive lipid-based bioerodable tablet as a novel device to decrease signs and symptoms associated with mouth dryness. METHOD AND MATERIALS: Twenty xerostomic patients were divided into two groups. In group 1, the mucoadhesive tablet was applied to the hard palate, while in group 2, Biotene mouthwash was applied and served as a control. Sialometry measurements, as well as a questionnaire assessing mouth dryness, were obtained before and after treatment. RESULTS: Application of the mucoadhesive tablets resulted in a significant reduction in the sensation of the mouth dryness ($P = .016$) compared to Biotene. Moreover, a 1.5-fold increase in unstimulated whole saliva flow was obtained after 30 minutes in the treatment group. CONCLUSION: A lipid-based mucoadhesive tablet has a beneficial role in reducing the sensation of dryness in patients with xerostomia.
- 4. Aggarwal, V., M. Singla, et al. (2010). "Comparative evaluation of anesthetic efficacy of Gow-Gates mandibular conduction anesthesia, Vazirani-Akinosi technique, buccal-plus-lingual infiltrations, and conventional inferior alveolar nerve anesthesia in patients with irreversible pulpitis." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 109(2): 303-308.**

OBJECTIVE: Conventional inferior alveolar nerve block (IANB) has a poor success rate in inflamed pulps. Three alternative techniques of providing anesthesia to mandibular molars were evaluated and compared with conventional IANB. **STUDY DESIGN:** Ninety-seven adult volunteer subjects, actively experiencing pain, participated in this prospective, randomized, double-blinded study. Twenty-five patients received Gow-Gates mandibular conduction block anesthesia, 24 patients received "high" Vazirani-Akinosi inferior alveolar nerve block, 26 received only buccal-plus-lingual infiltrations, and 22 patients (control) received conventional IANB anesthesia. Endodontic access preparation was initiated after 15 minutes of anesthesia. Pain during treatment was recorded using a Heft-Parker visual analog scale. Success was recorded for "none" or "mild" pain. **RESULTS:** Statistical analysis using nonparametric McNemer tests showed that Gow-Gates gave a success rate of 52%, which was statistically higher than control IANB (36%) ($P < .05$). Vazirani-Akinosi and infiltrations gave 41% and 27% success rates, respectively, with no statistically significant differences from control IANB. **CONCLUSIONS:** Gow-Gates mandibular conduction anesthesia may increase the success rates in patients with irreversible pulpitis compared with conventional IANB. None of the techniques provided acceptable success rates.

5. **Aggarwal, V., M. Singla, et al. (2010). "Comparative evaluation of effect of preoperative oral medication of ibuprofen and ketorolac on anesthetic efficacy of inferior alveolar nerve block with lidocaine in patients with irreversible pulpitis: a prospective, double-blind, randomized clinical trial." J Endod 36(3): 375-378.**

INTRODUCTION: Anesthetic efficacy of inferior alveolar nerve block decreases in patients with irreversible pulpitis. It was hypothesized that premedication with nonsteroidal anti-inflammatory drugs might improve the success rates in patients with inflamed pulps. **METHODS:** Sixty-nine adult volunteers who were actively experiencing pain participated in this prospective, randomized, double-blind study. The patients were divided into 3 groups on a random basis and were randomly given 1 of the 3 drugs including ibuprofen, ketorolac, and placebo 1 hour before anesthesia. All patients received standard inferior alveolar nerve block of 2% lidocaine with 1:200,000 epinephrine. Endodontic access preparation was initiated after 15 minutes of initial inferior alveolar nerve block. Pain during treatment was recorded by using a Heft Parker visual analog scale. Success was recorded as none or mild pain. **RESULTS:** Statistical analysis with nonparametric chi2 tests showed that placebo gave 29% success rate. Premedication with ibuprofen gave 27%, and premedication with ketorolac gave 39% success rate. There was no significant difference between the 3 groups. **CONCLUSIONS:** Preoperative administration of ibuprofen or ketorolac has no significant effect on success rate of inferior alveolar nerve block in patients with irreversible pulpitis.

6. **Alaki, S. M. (2010). "Can parents assess dental pain in children with cognitive impairment?" J Clin Pediatr Dent 34(4): 313-316.**

It is often said that the "gold standard" for pain assessment in both children and adults is verbal report. This means that the individual is best at describing his or her pain experience. This however does not take into account individuals who lack the ability to communicate their feelings including those with cognitive immaturity such as infants and very young children, people with cognitive impairment and adults with dementia. This is even complicated by the fact that children who experience the most pain are those who are least able to verbally describe it; those with greater physical and cognitive disability. This paper reviews past and current beliefs on the experience and expression of pain in children with cognitive impairment and how parents can be used as useful tools in diagnosing their pain.

7. **Alexander, R. E. and S. Limes (2010). "Is your office prepared for an accidental needlestick or other unexpected exposure incident?" Tex Dent J 127(1): 15-25.**

Recommendations and mandatory guidelines for preventing and managing needlestick incidents and other accidental exposures to bloodborne pathogens in healthcare facilities have been published by the Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) for more than 2 decades. Over the years, the incidence of official enforcement actions has declined and a complacency about the standards may have evolved in some dental offices. Some practitioners may not have written an occupational exposure incident protocol or made appropriate arrangements for medical laboratory testing and postexposure medical evaluation following an unexpected needlestick or other exposure incident in the office. When an unexpected event occurs, practitioners may become confused regarding the steps to be taken, and may turn to their local dental society or fellow practitioners for guidance. The provided information may or may not be complete, accurate and/or current. Implementation of periodic personnel training to prevent exposure incidents is extremely important and could ultimately save a dental practice thousands of dollars in expenses related to the occurrence of even one exposure incident, as well as save the life and/or career of a dental healthcare provider. This article does not comprehensively detail all infection control and bloodborne pathogen transmission prevention requirements for dental offices. Rather, the article provides suggestions

for dental practitioners regarding the step by step management of exposure incidents, and provides resource information for additional steps that can be taken towards prevention, improved office compliance, and improved litigation protection.

- 8. Al-Jundi, S. H. (2010). "The importance of soft tissue examination in traumatic dental injuries: a case report." *Dent Traumatol* 26(6): 509-511.**

Traumatic dental injuries (TDIs) represent one of the main oral health problems in children, with variable prevalence rates. The issue of unmet treatment needs and inadequate emergency management of TDIs have surfaced up lately in dental literature, indicating that some TDIs present late for treatment, which may complicate management of these injuries. Soft tissue injuries usually accompany other dental injuries therefore thorough clinical and radiographic inspection of soft tissue wounds can not be over emphasized, even in late presentation cases. Tooth fragments may be embedded in soft tissues, even in late presentation cases, and may go unnoticed in the presence of urgent situations. This case report presents a child with a fractured tooth fragment embedded in the lower lip for 18 months, which went unnoticed until the child presented later for treatment of the fractured incisor, highlighting the importance of soft tissue exploration even in late presentation trauma cases.
- 9. Almonaitiene, R., I. Balciuniene, et al. (2010). "Factors influencing permanent teeth eruption. Part one--general factors." *Stomatologija* 12(3): 67-72.**

Variation in the normal eruption of teeth is a common finding, but significant deviation from established norms should alert the clinician to take some diagnostic procedures in order to evaluate patient health and development. Disturbance in tooth eruption time could be a symptom of general condition or indication of altered physiology and craniofacial development. The aim of this review is to analyze general factors that could influence permanent teeth eruption. The articles from 1965 to 2009 in English related to topic were identified. 84 articles were selected for data collection. Although permanent teeth eruption is under significant genetic control, various general factors such as gender, socioeconomic status, craniofacial morphology, body composition can influence this process. Most significant disturbance in teeth emergence is caused by systemic diseases and syndromes.
- 10. Al-Sandook, T. and A. Al-Saraj (2010). "Ocular complications after inferior alveolar nerve block: a case report." *J Calif Dent Assoc* 38(1): 57-59.**

Ocular complications, transient loss of vision and diplopia, and blanching of the skin of the infraorbital region were reported in a female patient after an Inferior alveolar nerve block for extraction of the permanent mandibular left third molar tooth. Injection of the anesthetic solution into the maxillary artery could result to such complications. The anatomy related to this case, with suggestions for management of such a patient is discussed.
- 11. Altun, C., G. Guven, et al. (2010). "Dental injuries in autistic patients." *Pediatr Dent* 32(4): 343-346.**

PURPOSE: The purpose of this study was to assess the incidence of traumatic dental injury among Turkish children and young adults with autism and compare this to the general population of Turkish children and young adults without autism. **METHODS:** This study was comprised of 186 children and young adults (138 males and 48 females), 93 with autism (autistic group, or AG) and 93 without autism (control group, or CG). Dental injuries were classified according to drawings and texts based on the WHO classification system, as modified by Andreasen and Andreasen. **RESULTS:** The rate of injury was higher among the AG (23%) than the CG (15%). The difference between the 2 groups, however, was not statistically significant ($P < .19$). The most common type of dental injury was enamel fracture. The rate of enamel fracture was higher in the CG (59%) than in the AG (33%), and the distribution of types of traumatic injury differed significantly between the AG and CG ($P > .01$). **CONCLUSIONS:** There were no significant differences in the rates of traumatic dental injuries among children and young adults with and without autistic disorder. The most frequently injured teeth were the permanent maxillary central incisors, and the frequency of injury to these teeth differed significantly ($P > .01$) between AG (56%) and CG (91%). The most common type of dental injury, enamel fracture, was more common in CG (59%) than AG (33%). The distribution of types of traumatic dental injuries differed significantly between the 2 groups ($P > .01$).
- 12. Anders, P. L. and E. L. Davis (2010). "Oral health of patients with intellectual disabilities: a systematic review." *Spec Care Dentist* 30(3): 110-117.**

A systematic review of original studies was conducted to determine if differences in oral health exist between adults who have intellectual disabilities (ID) and the general population. Electronic searching identified 27 studies that met the inclusion criteria. These studies were assessed for strength of evidence. People with ID have poorer oral hygiene

and higher prevalence and greater severity of periodontal disease. Caries rates in people with ID are the same as or lower than the general population. However, the rates of untreated caries are consistently higher in people with ID. Two subgroups at especially high risk for oral health problems are people with Down syndrome and people unable to cooperate for routine dental care. Evidence supports the need to develop strategies to increase patient acceptance for routine care, additional training for dentists to provide this care, and the development of more effective preventive strategies to minimize the need for this care.

13. Andersen, R. M., D. C. Carreon, et al. (2010). "Who will serve? Assessing recruitment of underrepresented minority and low-income dental students to increase access to dental care." *J Dent Educ* 74(6): 579-592.

This article uses data from the 2007 American Dental Education Association survey of dental school seniors to assess their intentions to serve underserved populations according to the students' underrepresented minority (URM) and income status. Dental school recruitment and retention programs that concentrate exclusively on URM students will not benefit most low-income students since 83 percent of them are not URM. Recruiting URM students leads to more graduating students with intentions to serve minorities. Whether the income of URM students was high or low, about half in each income group stated that more than 25 percent of their patients would be underserved minorities, compared to 28 percent of the low-income non-URM students and 17 percent of the higher income non-URM students. However, our multivariable results suggest that recruitment of both low-income groups (URM and non-URM) rather than high income regardless of ethnicity might be especially helpful in producing graduates who choose public service. URM/income status was not significantly related to serving special care or rural populations.

14. Andreasen, J. O., E. Lauridsen, et al. (2010). "Contradictions in the treatment of traumatic dental injuries and ways to proceed in dental trauma research." *Dent Traumatol* 26(1): 16-22.

Almost all treatment procedures used for dental traumas are still today not evidence-based, a fact, which makes it difficult to analyse the long-term outcome of healing and its relationship to treatment. Crown fractures with extensive dentin exposure represent a dominant injury in the permanent dentition. Accepted treatment philosophy is dentin coverage (dental liner and/or dentin bonded restoration) to prevent bacteria penetration into the pulp. Today there is, apart from deep proximal fractures, no evidence that this treatment is necessary to protect the pulp. In case of luxation injuries, the accepted treatment principles appear to be anatomically correct repositioning, stabilization with a splint and sometimes antibiotic coverage. In clinical studies, these principles could not be proven to optimize either periodontal or pulpal healing, the explanation possibly being that both reposition and application of splints in certain cases add extra damage to the pulp and periodontal ligament. In case of root fractures with dislocation, fast and optimal repositioning and rigid long-term splinting (i.e. 3 months) have been considered the principle of treatment. However, a recent clinical study has shown that short-term splinting with a semi-rigid splint appears to optimize fracture healing. In tooth avulsion with subsequent replantation, cleansing of the root surface for contamination and systemic antibiotics has been considered essential for pulp and periodontal healing. These treatment concepts have been derived from experimental studies in animals. However, their importance could not be verified in large clinical studies. Ideally, randomized clinical studies are needed in the future for selected trauma types. The influences of repositioning, splinting and the role of infection and antibiotics should be further investigated. However, for ethical reasons, it will be difficult to perform randomized studies on trauma victims and we will be forced in the future to rely on experimental animal studies supported by clinical observational studies.

15. Andriankaja, O. M., S. Sreenivasa, et al. (2010). "Association between metabolic syndrome and periodontal disease." *Aust Dent J* 55(3): 252-259.

BACKGROUND: Metabolic syndrome has been suggested as a potential risk factor for periodontal disease. Data based on NHANES III, with 7431 subjects aged 20 years or older, were analysed to confirm the association between metabolic syndrome and periodontal disease, and identify which components of metabolic syndrome might play a role in this association. METHODS: Clinical criteria for metabolic syndrome included: (1) abdominal obesity; (2) increased triglycerides; (3) decreased HDL cholesterol; (4) hypertension or current use of hypertension medication; and (5) high fasting plasma glucose. Periodontal disease was evaluated by probing pocket depth (PPD) and was defined as mean PPD \geq 2.5 mm. RESULTS: Women with two or more metabolic components had significantly increased odds of having periodontal disease as compared to those with no component [(two components, OR=5.6 (95% CI: 2.2-14.4); three or more, OR=4.7 (2.0-11.2)]. Using the definition of metabolic syndrome as having three to five metabolic components (reference group with <3 components), the adjusted odds ratios were 1.0 (0.7-1.6) for men and 2.1 (1.2-3.7) for women. Abdominal obesity was the largest contributory factor in both genders. CONCLUSIONS: While the association

between metabolic syndrome and periodontal disease was particularly significant for women, abdominal obesity appeared to be the contributing metabolic factor for both genders.

16. Arevalo, O., A. Chattopadhyay, et al. (2010). "Mobile dental operations: capital budgeting and long-term viability." J Public Health Dent 70(1): 28-34.

OBJECTIVE: The University of Kentucky College of Dentistry (UKCD) runs a large mobile dental operation. Economic conditions dictate that as the mobile units age it will be harder to find donors willing or able to provide the financial resources for asset replacement. In order to maintain current levels of access for the underserved, consideration of replacement is paramount. A financial analysis for a new mobile unit was conducted to determine self-sustainability, return on investment (ROI), and feasibility of generating a cash reserve for its replacement in 12 years. **METHODS:** Information on clinical income, operational and replacement costs, and capital costs was collected. A capital budgeting analysis (CBA) was conducted using the Net Present Value (NPV) methodology in four different scenarios. Depreciation funding was calculated by transferring funds from cash inflows and reinvested to offset depreciation at fixed compound interest. **RESULTS:** A positive ROI was obtained for two scenarios. The depreciation fund did not generate a cash reserve sufficient to replace the mobile unit. **CONCLUSIONS:** Mobile dental programs can play a vital role in providing access to care to underserved populations and ensuring their mission requires long-term planning. Careful financial viability and CBA based on sound assumptions are excellent decision-making tools.

17. Arevalo, O., D. M. Saman, et al. (2010). "Mobile dental units: leasing or buying? A dollar-cost analysis." J Public Health Dent 70(3): 253-257.

INTRODUCTION: The decision to acquire a mobile dental unit is based on a standard capital budgeting analysis. The next step is to determine whether to obtain the use of the mobile dental unit by borrowing and purchasing or by leasing. As a financing mechanism, leases are simply another way of borrowing money to pay for the asset. **OBJECTIVE:** To compare lease vs. debt as financial vehicles to acquiring a mobile dental unit. **METHODS:** An estimate for a new mobile unit was obtained. Lease and loan proposals from financial lenders were collected. A cost of capital rate was chosen for comparison. Cash flows associated with borrowing and leasing vs. buying were determined for two different scenarios: for profit (FP) vs. not-for-profit (NFP), at 5 years. A dollar-cost analysis was utilized to determine the option with the lowest capitalized value. **RESULTS:** There was a net advantage to buying vs. leasing for both for FP and NFP organizations. Due to tax advantages, owning and leasing were substantially less expensive for FP than for NFP. Slight decreases in the monthly lease payments would make leasing competitive to the buying approach. **CONCLUSION:** Exploring alternative financing vehicles may allow dental programs to expand their services through the acquisition of a mobile unit. Though programs generally own assets, it is the use of the asset which is important rather than the ownership. Dental programs can find leasing an attractive alternative by offering access to capital with cash-flow advantages.

18. Arhakis, A., N. Topouzelis, et al. (2010). "Effective treatment of self-injurious oral trauma in Lesch-Nyhan syndrome: a case report." Dent Traumatol 26(6): 496-500.

Lesch-Nyhan syndrome (LNS) is an X-linked disorder originating from deficiency of the enzyme hypoxanthine guanine phosphoribosyl transferase. It is characterized by neurological manifestations, including the dramatic symptom of compulsive self-mutilation, which results in destruction of oral and perioral tissues. Several drug trials have been administered to improve the severe self-destructive behaviour, with questionable effectiveness. Invasive treatment approaches, such as extraction of teeth and orthognathic surgery, have been suggested with variable success. A conservative treatment with an intraoral appliance serving to prevent oral and peri-oral self-injury is presented in this report. The patient was a 14-year-old boy demonstrating the typical LNS behaviour, including compulsive self-biting, significant loss of lip and tongue tissue, spasticity and involuntary movements. An acrylic maxillary appliance was designed and constructed with an occlusal plate raising the bite. The appliance was retained by two Adams' clasps on the first premolars, along with three ball clasps between the incisors. Fabrication, insertion, and maintenance were uncomplicated and non-stressful to the patient. Periodic recall over 3-year period has confirmed the effective healing of the oral lesions and a high level of tolerance of the appliance.

19. Aronovich, S., L. W. Skope, et al. (2010). "The relationship of glycemic control to the outcomes of dental extractions." J Oral Maxillofac Surg 68(12): 2955-2961.

PURPOSE: The aim of this study was to determine whether glycemic control influences healing after tooth extractions. **MATERIALS AND METHODS:** We enrolled 115 diabetic patients who required dental extractions in this prospective observer-blinded study. Epithelialization of extraction sites was assessed relative to the patient's history, non-fasting

blood glucose levels, and glycosylated hemoglobin levels. RESULTS: Of 115 patients, 78 had 1- and 2-week follow-up data. There was no statistically significant difference in the rate of postextraction epithelialization between diabetic patients based on preoperative blood glucose levels, hemoglobin A1c levels, or patient history. Only the size of the extraction site at days 0 and 7 was predictive of future epithelialization. CONCLUSIONS: Glycemic control did not influence postextraction healing in diabetic patients. Recommendations for management of the diabetic patient requiring extractions are discussed.

20. Atar, M. and E. J. Korperich (2010). "Systemic disorders and their influence on the development of dental hard tissues: a literature review." J Dent 38(4): 296-306.

OBJECTIVES: This report highlights the influence of a number of disorders with systemic physiological effects that impact on the development of dental hard tissues. It focuses in particular, on the pathological effects of systemic conditions with less well recognised, but no less important, impacts on dental development. Such conditions, include cystic fibrosis, HIV/AIDS, leukaemia, Alstrom syndrome, hypophosphatasia, Prader-Willi syndrome, Tricho-dento-osseous syndrome, tuberous sclerosis, familial steroid dehydrogenase deficiency and epidermolysis bullosa. These, along with developmental and environmental causes of enamel and dentine defects, are discussed and the possible aetiology of such effects are proposed. Furthermore, the dental management and long-term dental care of these patients is outlined. SOURCES: MEDLINE/PubMed. CONCLUSIONS: Enamel and dentine defects can present with a wide spectrum of clinical features and may be caused by a variety of factors occurring throughout tooth development from before birth to adulthood. These may include host traits, genetic factors, immunological responses to cariogenic bacteria, saliva composition, environmental and behavioural factors and systemic diseases. These diseases and their spectrum of clinical manifestations on the organs affected (including the dentition) require an increased knowledge by dental practitioners of the disease processes, aetiology, relevant treatment strategies and prognosis, and must encompass more than simply the management of the dental requirements of the patient. It is important that the impact of the disease and its treatment, particularly in respect of immunosuppression where dental interventions may become life-threatening, is also taken into consideration.

21. 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.

22. Awartani, F. and F. Atassi (2010). "Evaluation of periodontal status in subjects with hyperlipidemia." J Contemp Dent Pract 11(2): 033-040.

AIM: The aim of this study was to evaluate the periodontal status in subjects with hyperlipidemia and to determine whether there is any association between hyperlipidemia and periodontal disease. METHODS AND MATERIALS: Sixty female patients were enrolled in the study; group one is hyperlipidemic patients (30 subjects) and group 2 is systemically fit patients within the same age group (control; 30 subjects). In both groups body mass index (BMI) and clinical parameters were measured; plaque index (PI), bleeding on probing (BOP), pocket depth (PPD) as well as clinical attachment level (CAL) and biochemical parameters, including plasma triglyceride, total cholesterol, low-density lipoprotein cholesterol (LDL-C), and high-density lipoprotein cholesterol (HDL-C) levels, were evaluated. RESULTS: The mean values of BMI, PPD, CAL, PI (%), and BOP (%) for the hyperlipidemia group were significantly higher than those for the control group. Total cholesterol and LDL-C levels were significantly and positively associated with CAL. Plasma triglyceride level was significantly associated with PPD and CAL. CONCLUSIONS: The results of our study showed that female patients with hyperlipidemia had higher values of periodontal parameters compared to

control individuals. However, in the future studies with larger sample sizes in mixed gender populations are needed to determine the association between hyperlipidemia and periodontal disease. CLINICAL SIGNIFICANCE: The results of our study showed that female patients with hyperlipidemia might manifest clinically higher values of periodontal parameters compared to nonlipidemic individuals. However, due to the small sample size of this study the exact association between hyperlipidemia and periodontal disease is still uncertain. Care has to be taken with a hyperlipidemia patients and advice can be given to them for periodic periodontal checkup.

23. Baelum, V. (2010). "What is an appropriate caries diagnosis?" *Acta Odontol Scand* 68(2): 65-79.

This aim of this paper is to spur a discussion of the direction of caries-lesion detection activities in clinical dental practice. It is argued that since the dental clinician's caries-related decision making is a script-matching enterprise in which clinical decisions are made on the basis of 'this-lesion-needs-this-kind-of-treatment' reasoning, the methods and strategies employed for caries lesion detection should accommodate this fact. This may be done by employing a clinical visual-tactile method for caries lesion detection that evaluates the two aspects that are crucial for appropriate caries management: lesion activity and surface integrity. The use of diagnostic methods that do not assess these features directly but involve assumptions about activity status and surface integrity should be avoided. This includes the use of bite-wing radiography for the detection of approximal caries lesions, as it may be shown that plain reliance on radiographs leads to considerable overtreatment. If clinical dentistry is to retain its status as a profession committed to doing good, changes in diagnostic practices along these lines are warranted.

24. Bagis, B., I. Satioglu, et al. (2010). "Rehabilitation of an extracted anterior tooth space using fiber-reinforced composite and the natural tooth." *Dent Traumatol* 26(2): 191-194.

Conservative solutions for the restoration of a single edentulous space in the anterior maxilla present an esthetic challenge to the clinician. A 45-year-old male patient whose right upper central tooth was planned to be extracted was referred to our clinic for a conservative, rapid, and economic treatment. After radiographic and clinical examinations, it was decided that the tooth which was to be extracted should be used for the restoration of its own extracted area. The extracted tooth was splinted to adjacent teeth with the aid of the grooves and fiber-reinforced composite (everStick, StickTech Ltd., Turku, Finland). Following an early and unexpected failure of the restoration, the fiber layer was thickened twice with a flowable composite resin (Stick Flow, Stick Tech Ltd.) which fit better to the grooves. The restoration satisfied the patient with a good mechanical behavior, esthetics, and long-term durability after 12 months while. Restoring the missing tooth area with the patient's own tooth is advantageous when combined with modern adhesive techniques. The clinician must pay attention to the mechanical adaptation of the restoration and the technique sensitivity of the applied adhesive system.

25. Balaji, S. M. (2010). "Transient diplopia in dental outpatient clinic: an uncommon iatrogenic event." *Indian J Dent Res* 21(1): 132-134.

A healthy 32-year-old female patient required an extraction of the right maxillary third molar. Lidocaine containing 1:80,000 epinephrine for right posterior superior alveolar nerve block was administered in the mucobuccal fold above the third molar to be extracted at our hospital. After few minutes of posterior superior alveolar block anesthesia, patient felt double vision. The condition was subsequently diagnosed as transient diplopia due to temporary paralysis of lateral rectus muscle due to involvement of the VI cranial nerve. The patient recovered in 30 minutes and the treatment was performed successfully. This article discusses the possible scientific explanation for this phenomenon.

26. Balmer, R., G. Booras, et al. (2010). "The oral health of children considered very high risk for infective endocarditis." *Int J Paediatr Dent* 20(3): 173-178.

BACKGROUND: Children with previous experience of infective endocarditis or with prosthetic heart valve are considered at very high risk for infective endocarditis. AIM: The aim of this study was to compare the dental health of a group of these children with a group of healthy controls and to determine parental awareness of the importance of good oral health. DESIGN: Oral examination was carried out in 28 children with previous infective endocarditis or a prosthetic heart valve to assess oral health. Findings were compared to a healthy control group of 28. Questionnaires were distributed to the parents to assess awareness of oral health. RESULTS: There was no significant difference in DMFT scores of study and control group (2.43 +/- 3.72 and 1.36 +/- 2.5 respectively) or in DMFT scores of study and control group (1.5 +/- 1.73 and 1.15 +/- 1.42 respectively), 36% of the study group had untreated caries. Parental knowledge of the link between oral health and infective endocarditis was excellent. CONCLUSIONS: There were no significant differences between the oral health of cardiac children and healthy children although the dmft and DMFT

scores of the study group were high. Of concern was the proportion of children with untreated caries in spite of good dental awareness and attendance.

- 27. Barbosa, M., I. T. Carmona, et al. (2010). "General anesthesia increases the risk of bacteremia following dental extractions." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 110(6): 706-712.**
OBJECTIVE: The influence of oral health status, the number of teeth extracted, and the anesthetic modality used is currently a matter of debate in the prevalence of bacteremia following dental extractions (BDE). The aim of the present study was to analyze the factors affecting the prevalence, duration, and etiology of BDE. STUDY DESIGN: Blood samples were collected from 210 patients at baseline, 30 seconds, 15 minutes, and 1 hour after performing dental extractions. Samples were processed in the Bactec 9240 and the subculture and further identification of the isolates were performed using conventional microbiological techniques. RESULTS: The prevalence of BDE at 30 seconds, 15 minutes, and 1 hour were 71%, 45%, and 12%, respectively. In the multivariate analysis, the "anesthetic modality" (local anesthesia versus general anesthesia) was the only variable related to BDE. CONCLUSION: General anesthesia represents a risk factor for BDE, increasing its prevalence and duration.
- 28. Bassiouny, M. A. (2010). "Clinical features and differential diagnosis of erosion lesions: systemic etiologies." *Gen Dent* 58(3): 244-255; quiz 256-247.**
An accurate diagnosis is essential for successful treatment, making it critical that dentists recognize the differences among erosion lesions and the numerous etiologies that cause them. Erosion lesions may result from various factors, including intrinsic etiologies. The similarities among the intrinsic types of lesions and those caused by noncarious destructive mechanisms in the oral cavity may lead to conflict over their etiologies; as a result, these lesions may be ignored, undiagnosed, or misdiagnosed. This article identifies the many systemic etiologies that propel stomach acid into the oral cavity, thereby causing dental erosion. Specific descriptions of the clinical characteristics of dental erosion lesions associated with the identified etiologies are provided and the differential diagnoses are outlined.
- 29. Becker, D. E. (2010). "Nausea, vomiting, and hiccups: a review of mechanisms and treatment." *Anesth Prog* 57(4): 150-156; quiz 157.**
Nausea, vomiting, and hiccups are troubling complications associated with sedation and general anesthesia. This article will review the basic pathophysiology of these events and current recommendations for their prevention and management.
- 30. Bedogni, A., G. Bettini, et al. (2010). "Oral bisphosphonate-associated osteonecrosis of the jaw after implant surgery: a case report and literature review." *J Oral Maxillofac Surg* 68(7): 1662-1666.**
This report documents a case of bisphosphonate-related osteonecrosis of the jaw (BRONJ) after dental implant placement in an osteoporotic patient treated with alendronate for 6 years. A 63-year-old patient underwent rehabilitation of the posterior mandible with 2 dental implants in 2006 while taking alendronate to treat osteoporosis. The surgical procedure was uneventful. Both implants integrated well, and in November 2006 the patient wore a fixed partial prosthesis. Alendronate was never discontinued. In June 2008 a painful cheek swelling of the left mandible developed, associated with gingival bleeding. Since then, the patient underwent several courses of antibiotics, without relief of symptoms. In June 2009 the patient was referred to our department. An area of infected and exposed necrotic bone in the left mandible enclosed 1 dental implant. A panoramic radiograph and computed tomography scan showed an increased bone marrow density with peri-implant bone sequestration. The technetium Tc 99m scintigraphy-labeled granulocytes were positive for active bone infection. Bone exposure persisted for 8 weeks, and diagnosis of oral nitrogen-containing bisphosphonate (N-BP)-related osteonecrosis was made. On the basis of a review of the literature, this is the 10th case of BRONJ after implant placement in patients taking oral N-BPs. Despite the low risk of BRONJ occurrence after implant surgery in oral N-BP users, the fate of dental implants in these patients remains uncertain. Therefore patients at risk must be given a full explanation of the potential risks of implant failure and BRONJ development. Because the potential role of infection is still debated, great attention should be paid to the long-term oral hygiene of implant-prosthetic restorations.
- 31. Benington, P. C., B. S. Khambay, et al. (2010). "An overview of three-dimensional imaging in dentistry." *Dent Update* 37(8): 494-496, 499-500, 503-494 passim.**
This paper reviews the role of three-dimensional digital imaging in dentistry and its related specialties. Current methods of image capture of the dentition are described, along with the current status of CAD/CAM-based restorative treatment. The advantages of cone beam computed tomography (CBCT) in comparison with conventional radiography

are outlined in the fields of endodontics, periodontology, oral surgery and orthodontics. The integration of CBCT with state-of-the-art computer planning systems for implantology is described. The application of multi-modal imaging techniques in the management of orthognathic and cleft lip and palate patients is explained and potential future educational benefits are considered. CLINICAL RELEVANCE: With three-dimensional digital imaging and its related technologies advancing rapidly, it is important for both general and specialist dental practitioners to have an awareness of its current and potential future roles in clinical practice.

32. Berger, S., I. Goddon, et al. (2010). "Are pit and fissure sealants needed in children with a higher caries risk?" Clin Oral Investig 14(5): 613-620.

The aim of this cross-sectional study was to analyse the preventive need of pit and fissure sealants (PFS) in a German population with a relatively high caries risk. The study involved 311 8- to 12-year-old children from the Ennepe-Ruhr District in North Rhine-Westphalia, Germany. Caries experience was scored according to WHO (1997) and ICDAS II criteria. PFS were assessed as intact or partially lost. The mean DFS values amounted to 0.5 for occlusal fissures, 0.2 for palatal/buccal pits and 0.3 for the remaining teeth. Non-cavitated caries lesions were recorded in average on 1.8 occlusal fissures and 1.5 palatal/buccal pits. Sealants were registered on 1.4 occlusal fissures and 0.4 palatal/buccal pits. The descriptive data and the adjusted Poisson regression models revealed that children with at least one fissure sealant are less likely to have decayed fissures or fissures with non-cavitated lesions on their permanent molars. Therefore, PFS are needed and indicated in caries-risk children.

33. Berman, M. H. (2010). "Autistic spectrum disorder: the challenge for dentists." Dent Today 29(10): 96-98, 100, 102; quiz 103, 194.

Those who actively work with children are, with increasing frequency, encountering patients who have been diagnosed with autistic disorders. Often, dentists may be the first healthcare providers to recognize that a 1- or 2-year-old child has some type of extraordinary pervasive behavioral disorder that a parent, fearing the worst, may have suspected instinctively and emotionally but never faced objectively. Currently, there are no empirical biological tests (eg, blood tests or brain scans) for ASD that are reliable. The definitive diagnosis of ASD is usually made by pediatricians, psychologists, or psychiatrists who institute a process of analysis which involves a developmental and clinical history, tests for cognitive function, and assessment of receptive and expressive language skills. The etiology of ASD is an enigma. Highly regarded researchers are of the opinion that there is probably more than one cause since the disorder can have such disparate manifestations. Genetics, environmental poisons, neurologic psychopathy, dietary deficiencies, and allergies have all been implicated. Pervasive developmental disorders, Asperger's syndrome, Rett syndrome, and childhood degenerative disorders are all considered a part of the ASD group, but the distinction between the various entities is not always clear. Given the fact that the etiology and the increased incidence of the various ASDs are scientifically puzzling, treatment modalities tend to be wide ranging and very much trial and error, especially since there is no cure. Dental professionals who treat patients with ASDs should be knowledgeable about the special needs of not only these patients, but also of their parents.

34. Biglioli, F., V. Battista, et al. (2010). "Lingual nerve lesion during ranula surgical treatment: case report." Minerva Stomatol 59(10): 561-569.

Iatrogenic lingual nerve (LN) injuries are quite common in oral surgery both in maxillo-facial surgery and in oral surgery. LN runs superficially into the lateral mouth floor just beneath the mucous layer and this position enhances damage frequency. This article lists the different aetiologies of iatrogenic LN injuries and it almost focuses on lesions due to surgical treatment of ranulas. In the case report a LN lesion due to oral ranula excision is discussed; the patient experienced anaesthesia and hyperpatia in the corrisponded tongue side. It was treated with a microneurosurgical anastomosis of LN, after amputation neuroma excision. The partial and definitive recovery of perception happened in six months and was deemed satisfying with 70% of functionality restored (results compared with the functionality of the contralateral side). An algorithm for diagnosis and therapy indication for iatrogenic injuries to nerves is also proposed. In case of surgical treatment, fuctional recovery manifests after 4-6 month; a functional recovery of 70% of total nerve function is possible. The variable that most affects nerve functional recovery is surgical treatment timing; it must be performed as soon as possible.

35. Binmadi, N. O., B. C. Jham, et al. (2010). "A case of a deeply fissured tongue." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 109(5): 659-663.

- 36. Boman, U. W., J. Lundgren, et al. (2010). "Psychosocial and dental factors in the maintenance of severe dental fear." *Swed Dent J* 34(3): 121-127.**

The aim was to study the relationship between psychosocial factors and dental status in adult subjects with severe dental fear (DF). A consecutive sample of 148 adults (mean age 36.1 yrs, range 21-69 yrs) referred for dental fear treatment was investigated using an intake questionnaire on dental attendance and history, psychometric questionnaires on dental fear, general anxiety and depression and a radiographic examination. The subjects had a mean DFMT (Decayed, Filled, Missed Teeth) score of 18.6 (SD = 5.6). A deterioration in dental status defined as the presence of root remnants was present in 57% of the subjects and was related to the negative consequences of dental fear, general anxiety and depression. Most subjects (84%) reported clinical levels of general anxiety and 46% reported clinical levels of depression. In conclusion, subjects with severe DF often suffer from psychosocial consequences and distress. This is even more marked if their dental status has deteriorated. The findings support a biopsychosocial vicious circle understanding of the maintenance of DF.

- 37. Bonifait, L. and D. Grenier (2010). "Cranberry polyphenols: potential benefits for dental caries and periodontal disease." *J Can Dent Assoc* 76: a130.**

Over the past decade, cranberries and their molecular components have received increasing attention from researchers in human health. In particular, the properties of the high-molecular-weight polyphenols isolated from cranberries have shown promise with regard to dental caries and periodontal disease. These potential anticaries agents inhibit the production of organic acids and the formation of biofilms by cariogenic bacteria. In addition, cranberry polyphenols may reduce the inflammatory response, as well as the production and activity of proteolytic enzymes contributing to the destruction of the extracellular matrix in periodontal disease. The polyphenols of cranberries also interfere with various activities (including formation of biofilm and adhesion) of *Porphyromonas gingivalis*, the main etiologic agent in chronic periodontitis. This article summarizes the scientific evidence supporting the potential of cranberry polyphenols to prevent and/or treat diseases of the mouth.

- 38. Borreani, E., K. Jones, et al. (2010). "Improving access to dental care for older people." *Dent Update* 37(5): 297-298, 301-292.**

Population demography is changing and the proportion of older people in society is increasing globally, particularly in western countries. Furthermore, as many more people survive into older age and retain their natural teeth so their risk of oral disease remains, or increases, bringing challenges such as root caries and periodontal diseases, together with the long-term effects of dental care. Despite their increased need, the uptake of dental care by older people is characteristically poor and unmet need may be high. Barriers to the uptake of care include a lack of perceived need, together with concerns about availability, cost and fear. This paper therefore outlines a series of actions for dental teams to take to minimize barriers and facilitate the uptake of dental care amongst older people. It draws on the findings of research conducted amongst older adults living in the community in a socially deprived inner city area as well as the wider literature. Clinical Relevance: It is important for dental teams to reflect on the difficulties that older people face while trying to access dental care services and, where possible, to address them in order to facilitate dental attendance amongst this section of the population who have much to gain from high quality preventively orientated care.

- 39. Boynes, S. G., Z. Echeverria, et al. (2010). "Ocular complications associated with local anesthesia administration in dentistry." *Dent Clin North Am* 54(4): 677-686.**

The most widely used method for controlling pain during dental procedures is the intraoral administration of local anesthetics in close proximity to a specific nerve or fiber to obtund nerve conduction. The most commonly anesthetized nerves in dentistry are branches or nerve trunks associated with the maxillary and mandibular divisions of the trigeminal nerve (cranial nerve V). However, other nerves may be inadvertently affected by intraoral local anesthesia injections, resulting in anesthetic complications of structures far from the oral cavity. Practitioners should be aware of potential ocular complications following intraoral injections in dentistry. These complications include oculomotor paralysis and vision loss. The knowledge of these conditions and their potential cause should alert the dentist to the importance of appropriate injection techniques and an understanding of management protocol.

- 40. Boynes, S. G., C. L. Lewis, et al. (2010). "Complications associated with anesthesia administered for dental treatment." *Gen Dent* 58(1): e20-25.**

This assessment sought to identify and quantify complications that occur with anesthesia administration during dental treatment of consecutive patients who received care through the University of Pittsburgh School of Dental Medicine's

(UPSDM) Department of Anesthesiology. This prospective study was completed by participating anesthesia caregivers at the UPSDM as a case-by-case evaluation. A standardized form delineating possible complications was used to collect data following 286 consecutive outpatient anesthetic cases administered within the UPSDM. After statistical analysis of five types of administered anesthesia, the overall complication rate was 22.4% in 286 cases. All of the complications were considered to be mild (90.6%) or moderate (9.4%); there were no reports of severe complications. The complications encountered most frequently were airway obstruction (18 reports) and occurrence of nausea/vomiting (12 reports). ASA classification, anesthetic technique, pre-existing medical findings, and the type of dental procedure performed all were variables that were found to affect the incidence of anesthesia-related complications. The overall complication rate from anesthesia administered during dental care is similar to or less than that reported within the hospital operating system environment.

41. Boynes, S. G., P. A. Moore, et al. (2010). "Complications associated with anesthesia administration for dental treatment in a special needs clinic." *Spec Care Dentist* 30(1): 3-7.

The goal of this study was to identify and quantify complications occurring with the administration of anesthesia for the dental treatment of patients with special needs. Anesthesia providers completed a standardized evaluation form, delineating possible complications for 202 consecutive ambulatory patients receiving anesthesia in a special needs clinic. Statistical analysis of four types of administered anesthesia showed that the overall complication rate was 23.8%. Evaluation of the data showed complications that were considered either mild (95.8%), or moderate (4.2%), while no reports of severe complications occurred. Airway obstruction and nausea/vomiting were the most frequently encountered complications. Variables found to affect the incidence of anesthetic complications included ASA classification, anesthetic technique, Mallampati airway classification, and type of dental procedure performed. An evaluation of the results of the study showed that the majority of complications that occurred with anesthesia during care of patients with special needs were mild and did not lead to severe adverse events. Our findings show that anesthesia administered during dental treatment for patients with special needs is safe and effective.

42. Boynes, S. G., J. Zovko, et al. (2010). "Local anesthesia administration by dental hygienists." *Dent Clin North Am* 54(4): 769-778.

Within the last 30 years, the role of dental hygienists has expanded to include the administration of local anesthesia. Several studies have been performed to assess practice characteristics and effectiveness of these changes in state licensure regulations. Findings indicate an acceptance of this expansion in dental hygiene practice; however, the delegation of this pain control procedures remains controversial. To address this controversy, the authors have reviewed of current literature to assess the practice of local anesthesia administration by dental hygienists.

43. Braga, M. M., F. M. Mendes, et al. (2010). "Detection activity assessment and diagnosis of dental caries lesions." *Dent Clin North Am* 54(3): 479-493.

This article reviews the current methods for detection and assessment of caries lesions focusing on applicability for daily clinical practice. The end point is to arrive at a diagnosis for each caries lesion. Visual inspection aided by a ball-ended probe is essential for caries lesions assessment and the method must be used for all patients. Use of indices, for example, the International Caries Detection and Assessment System (ICDAS), can improve the performance of this method. Using visual inspection, the clinician must decide about the presence, severity and activity of lesions. After this process, additional methods could aid the dentist in reaching a more appropriate treatment decision in some cases. The ICDAS, including the activity assessment system or the Nyvad system, seems to be the best option to reach final diagnoses for managing lesions. The radiographic method is the most recommended additional method available for daily clinical practice.

44. Brkovic, B. M., M. Savic, et al. (2010). "Intraseptal vs. periodontal ligament anaesthesia for maxillary tooth extraction: quality of local anaesthesia and haemodynamic response." *Clin Oral Investig* 14(6): 675-681.

There is no data concerning the use of the intraseptal anaesthesia (ISA) for single tooth extraction. The aims of this study were to compare the clinical efficacy and haemodynamic responses of the ISA with the periodontal ligament anaesthesia (PLA) for single tooth extraction. Thirty-five randomly selected healthy patients (ASA I) undergoing maxillary lateral incisors extraction entered the study. Onset of anaesthesia, the width of the anaesthetic field and duration of anaesthesia were recorded by pinprick testing. Intensity of anaesthesia was evaluated on a visual analogue scale. Haemodynamic parameters were recorded simultaneously at different time points after anaesthesia injection. The two techniques of local anaesthesia did not show statistically significant differences regarding the success rate and onset of anaesthesia, while the duration of the ISA on the buccal site was significantly longer in comparison with the

PLA. The intensity of the achieved anaesthesia, estimated by the experienced pain during procedure, pointed out that pain was recorded in 24% of cases in the ISA group, and in 19% in the PLA group without significant differences. Postoperative pain was found to be smaller in the ISA group (70.9% of treated sites) than in the PLA group (81.3% of treated sites); however, this difference was not significant. Although the heart rate increased in both groups, there were no significant differences in the patients' haemodynamic response between the ISA and the PLA. The results of the present study indicate that both techniques are useful and suitable for the routine tooth extraction.

- 45. Brockmann, W. and M. Badr (2010). "Chronic kidney disease: pharmacological considerations for the dentist." J Am Dent Assoc 141(11): 1330-1339.**
BACKGROUND: Patients with chronic kidney disease (CKD) represent a challenge for the dentist seeking to prescribe medications. Understanding the medical management of renal insufficiency and the pharmacokinetics of common dental drugs will aid clinicians in safely treating these patients. TYPES OF STUDIES REVIEWED: The authors reviewed the literature concerning the medical and pharmacological management of CKD. They reviewed the pharmacokinetic effects of drugs described in case reports and research articles and obtained from them recommendations regarding the use of drugs and adjustment of dosages. CLINICAL IMPLICATIONS: Because CKD is progressive, patients have varying levels of renal function but do not yet have end-stage renal disease. Some drugs that dentists prescribe commonly may worsen a patient's renal function, lead to drug toxicity or both. Managing the care of patients and prescribing medications tailored to their needs begin with a recognition of the patient with renal disease at risk of developing adverse effects. Clinicians can identify these patients from information obtained in their medical histories and from the drugs they may be taking. CONCLUSIONS: To treat patients with kidney disease, clinicians must recognize those at risk, have knowledge of the pharmacokinetic changes that occur and recognize that adjustment of drug dosages often is needed.
- 46. Broers, D. L., W. G. Brands, et al. (2010). "Deciding about patients' requests for extraction: ethical and legal guidelines." J Am Dent Assoc 141(2): 195-203.**
BACKGROUND: and Overview. Dentists frequently are faced with patients' requests for an extraction, sometimes of the entire dentition. In this article, the authors offer guidelines to help dentists and oral surgeons make decisions regarding such requests for extraction. CONCLUSIONS: In most cases of patients' requesting extractions, the ethical principle of nonmaleficence will play a decisive role in the dentist's decision making. In cases in which the request appears influenced by a specific mental condition such as a phobia of dental treatment, extraction rarely is justifiable. Practice Implications. Dental professionals should keep in mind that they cannot be forced to carry out treatment that is at odds with the ethical principle of nonmaleficence or that is outside of the bounds of accepted treatment. To aid dentists in making treatment decisions in such cases, the authors present a flowchart that integrates possible considerations.
- 47. Bromley, S. M. and R. L. Doty (2010). "Olfaction in dentistry." Oral Dis 16(3): 221-232.**
Practitioners of oral medicine frequently encounter patients with complaints of taste disturbance. While some such complaints represent pathological processes specific to the gustatory system, per se, this is rarely the case. Unless taste-bud mediated qualities such as sweet, sour, bitter, salty, umami, chalky, or metallic are involved, 'taste' dysfunction inevitably reflects damage to the sense of smell. Such 'taste' sensations as chicken, chocolate, coffee, raspberry, steak sauce, pizza, and hamburger are dependent upon stimulation of the olfactory receptors via the nasopharynx during deglutition. In this paper, we briefly review the anatomy, physiology, and pathophysiology of the olfactory system, along with means for clinically assessing its function. The prevalence, etiology, and nature of olfactory disorders commonly encountered in the dental clinic are addressed, along with approaches to therapy and patient management.
- 48. Brown, S., M. Greenwood, et al. (2010). "General medicine and surgery for dental practitioners. Part 5--Psychiatry." Br Dent J 209(1): 11-16.**
There are a significant number of patients in society who have some form of psychiatric disorder. It is important that dental practitioners have an awareness of the more common psychiatric disorders and their potential implications as they are likely to encounter them in clinical practice.
- 49. 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.

- 50. Brusca, M. I., A. Rosa, et al. (2010). "The impact of oral contraceptives on women's periodontal health and the subgingival occurrence of aggressive periodontopathogens and Candida species." J Periodontol 81(7): 1010-1018.**
BACKGROUND: The purpose of this study is to evaluate the influence of oral contraceptive (OC) use on the subgingival occurrence of specific periodontopathogens and the host's periodontal status. METHODS: Ninety-two females aged 19 to 40 years were included in the study. They were divided into two groups, OC users and non-users, and subgrouped according to the most severe periodontal condition and duration of OC usage. A pooled subgingival sample from each subject was cultured to investigate the presence of Candida species, Porphyromonas gingivalis, Aggregatibacter actinomycetemcomitans (previously Actinobacillus actinomycetemcomitans), and Prevotella intermedia. RESULTS: OC users, particularly smokers, show a statistically significant increase in the prevalence of severe periodontitis. OC users had deeper probing depths (≥ 5 mm) than non-users. Moreover, OC users had higher gingival index scores and clinical attachment loss, ≥ 2 and ≥ 5 mm, respectively, than non-users ($P < 0.01$). Patients taking OCs had significantly higher numbers of cultures positive for Candida. Seven Candida species were isolated. Subgingival Candida was associated with P. gingivalis and P. intermedia in 82.9% and 85.4%, respectively, in patients taking OCs. A. actinomycetemcomitans was isolated in patients with moderate and severe periodontitis and was associated with subgingival P. gingivalis, P. intermedia, and Candida. CONCLUSIONS: OC use may increase the risk of severe periodontitis and seems to cause a selection of certain Candida species in periodontal pockets. OC users showed a higher prevalence of P. gingivalis, P. intermedia, and A. actinomycetemcomitans compared to non-users. C. albicans, C. parapsilosis, C. krusei, C. tropicalis, and C. glabrata were the species with the ability to survive in the conditions created by the sex hormones after 3 years.
- 51. Buchmann, R., G. Conrads, et al. (2010). "Short-term effects of systemic antibiotics during periodontal healing." Quintessence Int 41(4): 303-312.**
OBJECTIVES: To investigate the short-term effects of nonsurgical therapy (scaling and root planing, SRP) on the subgingival microbiota in chronic (CP) and aggressive (AP) periodontal disease. METHOD AND MATERIALS: Ninety-seven CP and AP subjects underwent full-mouth SRP on 2 consecutive days. AP patients were randomly assigned to either receive systemic metronidazole plus amoxicillin (AP+AB) or were treated mechanically alone (AP). Pathogens were identified with 16S rRNA oligodeoxynucleotide probes and dot-blot hybridization before and at days 2, 3, 4, 7, 10, and 21 of healing. CP subjects were treated by scaling and root planing along with placebo tablets. RESULTS: Initially, AP cell counts were 69.9- (Porphyromonas gingivalis), 10.2- (Aggregatibacter actinomycetemcomitans), 5.7- (Tannerella forsythia), and 3.3-fold (Prevotella intermedia) enhanced compared to CP cell counts. Following SRP, immediate elimination occurred in single individuals of all three treatment groups at day 2. After SRP plus antibiotic therapy (AP+AB), the prevalence scores dropped beyond the levels of AP and CP, beginning at day 7, and remained low until day 21 ($P = 0.05$). Clinical healing statistically benefited from SRP with no differences among the three treatment groups. CONCLUSION: Nonsurgical therapy resulted in both a suppression and early elimination of single taxa immediately after completion of active treatment. Systemic antibiotics significantly accelerate the suppression of the periodontal microflora, but have limited effect on the elimination of target isolates during healing.
- 52. Cagiran, E., C. Eyigor, et al. (2010). "Comparison of oral Midazolam and Midazolam-Ketamine as sedative agents in paediatric dentistry." Eur J Paediatr Dent 11(1): 19-22.**
AIM: We compared the efficacy of sedation with oral Midazolam and a combination of oral Midazolam and Ketamine, used as alternatives to general anaesthesia during tooth extraction. Study Design: Retrospective study. MATERIALS AND METHODS: A total of 30 patients aged between 3 and 9 years, who had elective tooth extraction were included in the study. Subjects in Group A (n. 15) were given 0.75 mg/kg Midazolam orally while those in Group B (n. 15) were given 0.75 mg/kg Midazolam orally+5 mg/kg ketamine. Acceptance of orally administered drugs, sedation and anxiety scores and reactions to local anaesthetic injection and tooth extraction were assessed. RESULTS: Sedation and anxiety scores in Group B were better than in Group A ($p < 0.05$). Reactions to local anaesthetic injection and tooth extraction were very significantly less common in Group B

($p < 0.0001$). Requirement for an additional medication was more common in Group A ($p < 0.05$). Side effects were not observed in either group. Statistics: Patient demographics and time to discharge were analysed by Mann-Whitney U test, whereas Chi-square test was used to analyse compliance to sedation, anxiety and sedation scores, reaction to tooth extraction, side effects and additional drug requirement. CONCLUSION: Compared to oral Midazolam only, a combination of oral Midazolam+Ketamine resulted in better sedation and surgical comfort in children during a painful procedure such as tooth extraction.

53. Capp, P. L., M. E. de Faria, et al. (2010). "Special care dentistry: Midazolam conscious sedation for patients with neurological diseases." *Eur J Paediatr Dent* 11(4): 162-164.

AIM: Midazolam is used very often to control the anxiety of patients for dental treatment, especially in patients with special needs. The objective of this study was to evaluate the efficiency of Midazolam in patients with neurological diseases referred for dental treatment. Study design: Descriptive study. MATERIALS AND METHODS: Forty consecutive patients with neurological disorders (encephalopathy, autism, and epilepsy) were referred to dental treatment, and 45 sedations were performed; all were sedated with Midazolam (intramuscular 0.2-0.3 mg/kg or intravenous 0.1mg/kg) and all were anesthetised with lidocaine 2% (0.5-2 mL). During the dental procedure, their behavior was analysed and classified into 3 categories: A (indifferent), B (reacted but allowed treatment), and C (did not allow treatment). Data were tabbed and statistically analysed. RESULTS: The final patients' classification was: A 22 (49%), B 18 (40%) and C 5 (11%); the patients with encephalopathy had the best results of sedation according to the proposed classification ($p < 0.05$). CONCLUSION: Midazolam demonstrated to be effective in 89% of this sample for dental procedures in patients with neurological and behavioral disturbances, but it was less effective for patients with autism ($p < 0.05$).

54. Cavalcanti, A. L., M. Costa Oliveira, et al. (2010). "Short communication: In vitro assessment of erosive potential of energy drinks." *Eur Arch Paediatr Dent* 11(5): 253-255.

AIM: This in vitro study was to evaluate the endogenous pH, titratable acidity, total soluble solids content (TSSC) and nonreducing sugars of energy drinks. METHODS: Nine energy drinks (Bad Boy Power Drink, Red Bull, Red Bull Sugar Free, Flying Horse, Burn, Night Power, Flash Power, Flying Horse Light and 220V) were evaluated by a randomised experiment with 3 repetitions on each sample. pH analysis performed by potentiometry and buffering capacity was assessed by dilution of each drink. Increments of 0.1 N KOH were titrated until neutrality reached. TSSC readings were performed by Brix refractometry using an Abbe refractometer. RESULTS: pH values ranged from 1.52 (Flash Power) to 3.20 (Red Bull) and all drinks showed pH 5.5. Titratable acidity values ranged from 0.56 (220V) to 1.04 (Bad Boy Power Drink). Flying Horse Light presented the lowest TSSC content (1.66%) and Flying Horse presented the highest (12.58%). Non-reducing sugars values ranged from 0.00% (Red Bull Sugar Free and Flying Horse Light) to 54.33% (Flying Horse). CONCLUSION: The energy drinks evaluated have a high erosive potential, as they present low pH and a high non-reducing sugar content.

55. Chaffee, B. W. and S. J. Weston (2010). "Association between chronic periodontal disease and obesity: a systematic review and meta-analysis." *J Periodontol* 81(12): 1708-1724.

BACKGROUND: Obesity is increasing in prevalence and is a major contributor to worldwide morbidity. One consequence of obesity might be an increased risk for periodontal disease, although periodontal inflammation might, in turn, exacerbate the metabolic syndrome, of which obesity is one component. This review aims to systematically compile the evidence of an obesity-periodontal disease relationship from epidemiologic studies and to derive a quantitative summary of the association between these disease states. METHODS: Systematic searches of the MEDLINE, SCOPUS, BIOSIS, LILACS, Cochrane Library, and Brazilian Bibliography of Dentistry databases were conducted with the results and characteristics of relevant studies abstracted to standardized forms. A meta-analysis was performed to obtain a summary measure of association. RESULTS: The electronic search identified 554 unique citations, and 70 studies met a priori inclusion criteria, representing 57 independent populations. Nearly all studies matching inclusion criteria were cross-sectional in design with the results of 41 studies suggesting a positive association. The fixed-effects summary odds ratio was 1.35 (Shore-corrected 95% confidence interval: 1.23 to 1.47), with some evidence of a stronger association found among younger adults, women, and non-smokers. Additional summary estimates suggested a greater mean clinical attachment loss among obese individuals, a higher mean body mass index (BMI) among periodontal patients, and a trend of increasing odds of prevalent periodontal disease with increasing BMI. Although these results are highly unlikely to be chance findings, unmeasured confounding had a credible but unknown influence on these estimates. CONCLUSIONS: This positive association was consistent and coherent with a biologically plausible role for obesity in the development of periodontal disease. However, with few quality longitudinal studies, there is an inability to distinguish the temporal ordering of events, thus limiting the

evidence that obesity is a risk factor for periodontal disease or that periodontitis might increase the risk of weight gain. In clinical practice, a higher prevalence of periodontal disease should be expected among obese adults.

- 56. Charles, J. M. (2010). "Dental care in children with developmental disabilities: attention deficit disorder, intellectual disabilities, and autism." *J Dent Child (Chic)* 77(2): 84-91.**

The Federal government reports that 13% of Americans between birth and 18 years of old meet the definition of a child with special health care needs. These children and young adults present unique challenges for both pediatric and general dentists to provide access to the oral health care system--establishing a treatment plan for those with unique medical, behavioral and dental needs and maintaining oral health over the lifetime. The purpose of this article was to describe the characteristics of 3 common developmental disabilities and the challenges these issues present to the oral health care practitioner.

- 57. Chen, L., B. Wei, et al. (2010). "Association of periodontal parameters with metabolic level and systemic inflammatory markers in patients with type 2 diabetes." *J Periodontol* 81(3): 364-371.**

BACKGROUND: Although worldwide evidence tends to prove that diabetes adversely affects periodontal health, there are insufficient clues indicating whether periodontitis may aggravate metabolic control and systemic inflammation. This study, as a preliminary part of an ongoing research project, aims to clarify the relationship of periodontal parameters with metabolic levels and systemic inflammatory markers in patients with diabetes. **METHODS:** A total of 140 qualified, adult patients with type 2 diabetes and periodontitis were recruited into this study. Periodontal examinations, including a full-mouth assessment of probing depths (PDs), bleeding on probing, gingival recession, and clinical attachment level, were determined. Blood analyses were carried out for glycated hemoglobin (HbA1c), fasting glucose, high-sensitivity C-reactive protein (hsCRP), tumor necrosis factor-alpha (TNF-alpha), and lipid profiles. Subjects were divided into three groups according to tertiles of the mean PD and compared. **RESULTS:** Upon an analysis of covariance, subjects with an increased mean PD had significantly higher levels of HbA1c and hsCRP ($P < 0.05$). No significant difference was found among different groups in the levels of serum TNF-alpha, fasting glucose, and lipid profiles ($P > 0.05$). After controlling for age, gender, body mass index, duration of diabetes mellitus, smoking, regular physical exercise, and alcohol consumption, positive correlations were found between mean PD and HbA1c ($r = 0.2272$; $P = 0.009$) and between mean PD and hsCRP ($r = 0.2336$; $P = 0.007$). After adjustment for possible confounders, the mean PD emerged as a significant predictor variable for elevated levels of HbA1c and hsCRP ($P < 0.05$). **CONCLUSION:** Chronic periodontitis was associated with glycemic metabolic and serum hsCRP levels in patients with type 2 diabetes.

- 58. Chevalier, V., R. Arbab-Chirani, et al. (2010). "Facial palsy after inferior alveolar nerve block: case report and review of the literature." *Int J Oral Maxillofac Surg* 39(11): 1139-1142.**

Bell's palsy is an idiopathic and acute, peripheral nerve palsy resulting in inability to control facial muscles on the affected side because of the involvement of the facial nerve. This study describes a case of Bell's palsy that developed after dental anaesthesia. A 34-year-old pregnant woman at 35 weeks of amenorrhea, with no history of systemic disease, was referred by her dentist for treatment of a mandibular left molar in pulpitis. An inferior alveolar nerve block was made prior to the access cavity preparation. 2h later, the patient felt the onset of a complete paralysis of the left-sided facial muscles. The medical history, the physical examination and the complementary exams led neurologists to the diagnosis of Bell's palsy. The treatment and results of the 1-year follow-up are presented and discussed. Bell's palsy is a rare complication of maxillofacial surgery or dental procedures, the mechanisms of which remain uncertain.

- 59. Chiang, Y. C., H. J. Chen, et al. (2010). "A novel mesoporous biomaterial for treating dentin hypersensitivity." *J Dent Res* 89(3): 236-240.**

An ideal material has yet to be discovered that can completely treat dentin hypersensitivity; however, calcium phosphate precipitation has exhibited potential value for the treatment of dentin hypersensitivity by the occlusion of dentinal tubules. We hypothesized that a novel mesoporous silica biomaterial (nano CaO@mesoporous silica, NCMS) containing nano-sized calcium oxide particles mixed with 30% phosphoric acid can efficiently occlude dentinal tubules and significantly reduce dentin permeability, even with the presence of pulpal pressure. This highly supersaturated Ca(2+)-and HPO(4)(2-)-ion-containing NCMS paste was brushed onto dentin surfaces, and the ions diffused deeply into the dentinal tubules and formed a CaHPO(4).2H(2)O precipitation with a depth of 100 microm. The results of the dentin permeability tests showed that the novel mesoporous material exhibited a significant reduction in dentin permeability ($p < 0.05$), even under simulated pulpal pressure, as compared with our previously developed material, DP-bioglass, and a commercial desensitizing material, Seal & Protect.

- 60. Cho, G. S., M. W. Han, et al. (2010). "Zinc deficiency may be a cause of burning mouth syndrome as zinc replacement therapy has therapeutic effects." *J Oral Pathol Med* 39(9): 722-727.**

BACKGROUND: Zinc is known to play an important role for growth and development, the immune response, neurological function, and reproduction. Although the etiology of burning mouth syndrome (BMS) is unknown, zinc deficiency may be implicated in the pathogenesis of BMS. The aim of this study was to demonstrate a causal relationship between zinc deficiency and BMS and to assess whether zinc replacement is an effective therapy for BMS. METHODS: Serum zinc level was evaluated in 276 patients with BMS. To assess the therapeutic effect of zinc replacement, patients with zinc deficiency were administered a zinc supplement (14.1 mg/day). Pain intensity 6 months after zinc replacement was evaluated using an 11-point numerical scale. We also developed an animal model of zinc deficiency to assess the effects of zinc deficiency on the oral mucosa. RESULTS: Of the 276 patients with BMS, 74 (26.8%) had low serum zinc levels. Zinc replacement therapy lowered the mean numerical pain scale in these patients from 8.1 to 4.1, compared with a mean decrease from 7.7 to 6.7 in a control group ($P = 0.004$). In our animal model of zinc deficiency, the main pathologic findings were hyperkeratinization and increased mitosis on the dorsum of the tongue, although there were no gross oral mucosal lesions. CONCLUSIONS: Zinc deficiency might play a role in some patients with BMS. In such patients, appropriate zinc replacement therapy is effective in relieving symptoms.

- 61. Chrcanovic, B. R. and A. L. Custodio (2010). "Considerations of mandibular angle fractures during and after surgery for removal of third molars: a review of the literature." *Oral Maxillofac Surg* 14(2): 71-80.**

BACKGROUND: Angle fractures are quite common considering that the angle of the mandible forms an area of lower resistance which contains a thicker upper border, a thin basilar bone, and the presence of an impacted mandibular third molar. Common complications of mandibular third molar surgery include alveolar osteitis (dry socket), secondary infection, nerve dysfunction, and hemorrhage. Reports of mandibular fracture during and after third molar removal are uncommon. PURPOSE: The purpose of this paper is to discuss the risk and predisposing factors that should be analyzed regarding the possibility of immediate and late mandibular angle fractures and their need for surgical treatment as a means through which to remove impacted molars. This study is based on a thorough review of the literature as well as on one immediate and one late mandibular angle fracture as described by the authors' own personal experience. CONCLUSIONS: The danger of an immediate jaw fracture can be avoided by means of proper instrumentation and by refraining from excessive force on the bone. The tooth should be sectioned in such a way as to minimize the extent of bone removal and force caused by instrumentation. The danger of a late jaw fracture can be avoided by precise diagnosis in cases of patients over 25 years of age, particularly men, whose tooth roots are superimposed on or adjacent to the inferior alveolar canal on a panoramic image, any local pathology and systemic disease or medications which may impair bone strength, and patients who present bruxism and are active athletes.

- 62. Clark, T. M. and J. A. Yagiela (2010). "Advanced techniques and armamentarium for dental local anesthesia." *Dent Clin North Am* 54(4): 757-768.**

Computer-controlled local anesthetic delivery (C-CLAD) devices and systems for intraosseous (IO) injection are important additions to the dental anesthesia armamentarium. C-CLAD using slow infusion rates can significantly reduce the discomfort of local anesthetic infusion, especially in palatal tissues, and facilitate palatal approaches to pulpal nerve block that find special use in cosmetic dentistry, periodontal therapy, and pediatric dentistry. Anesthesia of single teeth can be obtained using either C-CLAD intraligamentary injections or IO injections. Supplementary IO anesthesia is particularly suited for providing effective pain control of teeth diagnosed with irreversible pulpitis.

- 63. Cochrane, N. J., F. Cai, et al. (2010). "New approaches to enhanced remineralization of tooth enamel." *J Dent Res* 89(11): 1187-1197.**

Dental caries is a highly prevalent diet-related disease and is a major public health problem. A goal of modern dentistry is to manage non-cavitated caries lesions non-invasively through remineralization in an attempt to prevent disease progression and improve aesthetics, strength, and function. Remineralization is defined as the process whereby calcium and phosphate ions are supplied from a source external to the tooth to promote ion deposition into crystal voids in demineralized enamel, to produce net mineral gain. Recently, a range of novel calcium-phosphate-based remineralization delivery systems has been developed for clinical application. These delivery systems include crystalline, unstabilized amorphous, or stabilized amorphous formulations of calcium phosphate. These systems are reviewed, and the technology with the most scientific evidence to support its clinical use is the remineralizing system utilizing casein phosphopeptides to stabilize and deliver bioavailable calcium, phosphate, and fluoride ions. The recent clinical evidence for this technology is presented and the mechanism of action discussed. Biomimetic approaches to

stabilization of bioavailable calcium, phosphate, and fluoride ions and the localization of these ions to non-cavitated caries lesions for controlled remineralization show promise for the non-invasive management of dental caries.

- 64. 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.
- 65. Crespi, R., P. Cappare, et al. (2010). "Fresh-socket implants in periapical infected sites in humans." J Periodontol 81(3): 378-383.**
BACKGROUND: The aim of the present study is to compare the outcome of the immediate placement of implants when used in the replacement of teeth with and without chronic periapical lesions. METHODS: Thirty patients requiring a single-tooth extraction of a monoradicular or premolar tooth were selected. The control group (CG) included 15 patients without periapical lesions but with root caries and root fractures. The test group (TG) included 15 patients with periapical lesions, periapical radiolucencies, and no signs of pain, fistulas, or suppuration. Thirty teeth were extracted, and implants were immediately positioned in fresh sockets and loaded after 3 months in both groups. Clinical parameters (probing depth [PD], modified plaque index, modified bleeding index [mBI], marginal gingiva level [MGL], and keratinized mucosa [KM]) and marginal bone levels were evaluated at baseline and 12 and 24 months after implant placement. Comparisons between CG and TG values over time were performed by the Student two-tailed t test. RESULTS: At the 24-month follow-up, a survival rate of 100% was reported for all implants. The mean bone loss was 0.82 +/- 0.52 mm for the CG and 0.86 +/- 0.54 for the TG. Plaque accumulation was 0.74 +/- 0.29 for the CG and 0.69 +/- 0.29 for the TG. The mBI was 0.77 +/- 0.33 for the CG and 0.72 +/- 0.36 for the TG. The soft tissue profile MGL and KM remained stable for up to 24 months for the CG and TG. The mean PD was 2.05 +/- 0.66 mm for the CG and 1.99 +/- 0.57 mm for the TG. Differences that were not statistically significant were reported between the CG and TG over time and between time points. CONCLUSION: At the 24-month follow-up, endosseous implants placed immediately in extraction sites affected by periapical infection rendered an equally favorable soft and hard tissue integration of the implants, revealing a predictable outcome.
- 66. Cummins, D. (2010). "Recent advances in dentin hypersensitivity: clinically proven treatments for instant and lasting sensitivity relief." Am J Dent 23 Spec No A: 3A-13A.**
PURPOSE: To provide a brief overview of the diagnosis, epidemiology, etiology and clinical management of dentin hypersensitivity, to discuss technical approaches to relieve sensitivity, with special emphasis on dentin tubule occlusion and the clinical evidence for efficacy of desensitizing toothpastes based upon this approach, and to summarize the science behind a new dentifrice technology, based upon arginine and calcium carbonate, and the clinical evidence which proves that it delivers both instant and lasting relief of dentin hypersensitivity. RESULTS: Clinical studies have shown that a new toothpaste, containing arginine and calcium carbonate (known as Pro-Argin technology) with 1450 ppm fluoride, offers clinically proven instant and lasting relief of dentin hypersensitivity. Three 8-week clinical studies have shown that this new toothpaste provides statistically significantly superior efficacy in reducing sensitivity to market leading desensitizing toothpastes containing 2% potassium ion. Importantly, three further clinical studies have shown that a single direct topical application of toothpaste to sensitive teeth, using a fingertip or cotton swab followed by 1 minute of massage, resulted in instant relief of dentin hypersensitivity and that the relief was maintained with subsequent twice-daily brushing. Mechanism of action studies have shown that this technology physically seals dentin tubules with a plug that contains arginine, calcium carbonate and phosphate. This plug, which is resistant to normal

pulpal pressures and to acid challenge, effectively reduces dentin fluid flow and thereby relieves sensitivity. A new whitening variant of this desensitizing toothpaste, containing the Pro-Argin technology, fluoride and a high cleaning calcium carbonate system, has now been clinically and scientifically validated. This toothpaste works by the same mechanism of action as its non-whitening counterpart and is clinically proven to provide both instant and lasting relief of sensitivity, while providing proven efficacy in removal of extrinsic stains. No difference in desensitizing efficacy was observed between the whitening and non-whitening versions.

- 67. da Fonseca, M. A. (2010). "Dental and oral care for chronically ill children and adolescents." *Gen Dent* 58(3): 204-209; quiz 210-201.**

Dental care is the most unmet health care need of children and adolescents who have chronic conditions and diseases. Because advances in therapy and medical technology have extended the lives of this population, it is very likely that these children will seek care in general dental practices. It is extremely important for dental practitioners to be knowledgeable about their patients' history and medical treatment to deliver care safely. This article reviews four chronic diseases of childhood (asthma, cystic fibrosis, cancer, and sickle cell disease) and discusses recommendations for oral and dental treatment.

- 68. Dan, A. E., T. H. Thygesen, et al. (2010). "Corticosteroid administration in oral and orthognathic surgery: a systematic review of the literature and meta-analysis." *J Oral Maxillofac Surg* 68(9): 2207-2220.**

PURPOSE: This study evaluated the effect of corticosteroid (CS) administration on edema, analgesia, and neuroregeneration in conjunction with surgical dental extraction, orthognathic surgery, and the risk of developing side effects. MATERIALS AND METHODS: A systematic search of the literature was made. The primary predictor variable was CS administration and the outcome variables were edema, pain, and infection. A meta-analysis was performed. The risk of other side effects was evaluated through a simple review. RESULTS: In oral surgery, most clinical trials showed a significant decrease in edema ($P < .0001$) after CS, and local injection of methylprednisolone ≥ 25 mg was expected to result in a significant decrease in edema. Regarding the analgesic effect, several clinical trials showed a decrease in pain after CS ($P < .0001$). Further, CS administration resulted in a slightly higher risk of infection (relative risk, 1.0041), but with a P value of .89. CS could be administered with no increased risk of infection. In orthognathic surgery, methylprednisolone ≥ 85 mg administered intravenously seemed sufficient to produce a significant decrease in edema, and several trials pointed toward a neuroregeneration effect, but no statistical analysis could be performed. Regarding the risk of other side effects, in oral surgery, a minimal risk of chronic adrenal suppression was seen; in orthognathic surgery, an elevated risk of avascular osteonecrosis, steroid-induced psychosis, and adrenal suppression was seen. There were no reports of decreased healing. CONCLUSION: These findings suggest that the administration of CS in oral surgery decreases edema and pain significantly, with no higher risk of infection and with a minimum risk of other side effects.

- 69. Dannewitz, B., J. K. Krieger, et al. (2010). "Full-mouth disinfection as a nonsurgical treatment approach for drug-induced gingival overgrowth: a series of 11 cases." *Int J Periodontics Restorative Dent* 30(1): 63-71.**

The treatment of drug-induced gingival overgrowth is compounded by the high recurrence rate resulting from chronic use of the medication and the persistence of other risk factors. In this case series, the treatment outcome of a nonsurgical periodontal therapy, according to the concept of full-mouth disinfection in 11 patients with drug-induced gingival overgrowth, is described. All clinical parameters improved significantly after therapy. Only 6% of teeth received further surgical treatment. The clinical situation remained stable during the recall. The present case series suggests that full-mouth disinfection might be a beneficial treatment concept for drug-induced gingival overgrowth, reducing the need for further surgical intervention.

- 70. de Carvalho Farias, B., P. A. Cabral, et al. (2010). "Non-surgical treatment of gingival overgrowth induced by nifedipine: a case report on an elderly patient." *Gerodontology* 27(1): 76-80.**

Drug-induced gingival overgrowth (DIGO) is a significant problem for periodontologists and this side effect is frequently associated with three particular drugs: phenytoin, cyclosporin A and nifedipine. A case report of gingival overgrowth induced by nifedipine in an elderly patient treated with non-surgical periodontal therapy is described. A 75-year-old male with generalised gingival overgrowth reported the problem of oral malodour and significant gingival bleeding. The medical history revealed a controlled hypertensive state and Cerebral Vascular Accident (CVA) 3 years prior to consultation. The diagnosis was gingival overgrowth associated with nifedipine, no other risk factors being identified. The patient had been taking nifedipine for 18 months, but after the consultation with the patient's doctor, nifedipine was suspended, as the hypertension was controlled. Treatment consisted of meticulous oral hygiene instruction,

scaling, root surface instrumentation and prophylaxis. Six months after the first intervention, clinical parameters revealed a significant improvement with a considerable reduction in gingival overgrowth, demonstrating the effect of non-surgical periodontal therapy in severe cases of gingival overgrowth. Non-surgical treatment of DIGO is a far less invasive technique than surgical approaches and has demonstrated an impressively positive treatment response. It should therefore be considered as a first treatment option for DIGO.

71. Degerliyurt, K., J. C. Gunsolley, et al. (2010). "Informed consent: what do patients really want to know?" J Oral Maxillofac Surg 68(8): 1849-1852.

PURPOSE: Although it is generally advised to provide patients with as much information as possible during the informed consent process, little is known about the amount and type of information that patients actually desire. The purpose of this study was to address this question. **PATIENTS AND METHODS:** We gave 212 patients (93 men and 119 women) presenting to an emergency clinic for oral surgery, ranging in age from 18 years to more than 50 years, a questionnaire containing 12 questions at their initial visit that asked them how much information they would like about the general and specific risks associated with the procedure. They were also asked when they would like to receive that information and whether they would like it in written form. **RESULTS:** Of the patients, 57% wanted to know about all complications, 33% wanted to know only about the most common complications, and 10% did not want to know anything about possible complications. The desire to know about complications increased along with their suggested frequency. Seventy-eight percent said they would like written as well as verbal information, and most wanted it provided before scheduling their operation and again just before undergoing it. The only difference between the responses from men and women was that significantly more men wanted to know about the risk of surgery not improving their symptoms and the risk of nerve damage. There was no relationship between the age of the patient and the responses given. **CONCLUSION:** A thorough informed consent process generally provides more information than most patients desire.

72. Deo, V., S. Gupta, et al. (2010). "Evaluation of subantimicrobial dose doxycycline as an adjunct to scaling and root planing in chronic periodontitis patients with diabetes: a randomized, placebo-controlled clinical trial." J Contemp Dent Pract 11(3): 009-016.

AIM: Diabetic patients have more severe periodontal destruction, but periodontal therapy can improve metabolic control. Recently, interest has focused on the use of subantimicrobial dose doxycycline (SDD) as a treatment paradigm. Therefore, this study was undertaken to evaluate clinical efficacy of SDD with scaling and root planing (SRP) in chronic periodontitis patients with diabetes. **METHODS AND MATERIALS:** Twenty chronic periodontitis patients with diabetes mellitus were randomly allocated to either a test and a control group. Clinical measurements were recorded at baseline and at six months for probing pocket depth (PPD), clinical attachment level (CAL), and gingival recession (GR). After SRP, patients in the test group were instructed to take SDD 20-mg capsules twice a day while patients in the control group took a placebo twice a day. Both groups were on this regimen for a six-month period. **RESULTS:** A greater reduction in mean PPD was demonstrated in patients in the test group compared to the control group. The mean CAL increase observed in the test group was significantly greater (0.67 mm) than that in the control group. **CONCLUSION:** It can be concluded that SRP, in conjunction with the SDD therapy described, is more effective than SRP alone in terms of CAL gain and PPD reduction in diabetic patients with severe periodontal disease. **CLINICAL SIGNIFICANCE:** Given the widespread prevalence of both chronic periodontitis and diabetes, the proposed treatment approach will prove to be of great value and contribute significantly to the overall health of the patients.

73. Elad, S., Y. Zadik, et al. (2010). "A new management approach for dental treatment after a cerebrovascular event: a comparative retrospective study." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 110(2): 145-150.

OBJECTIVE: Current literature recommends postponing dental treatment until 6-12 months after a stroke, based on the presumed risk of recurrent stroke. The purpose of this study was to suggest that the importance of dental care during this period exceeds the risk of medical complications in this patient population. **STUDY DESIGN:** Two groups were compared: 1) a cerebrovascular (CrbV) study group: patients (n = 16) who had suffered from a CrbV event within the 12 months preceding their dental procedure; and 2) a cardiovascular (CV) control group: patients (n = 25) suffering from ischemic CV disease. Patients were monitored during and after the dental treatment. Treatment parameters and outcome were compared. **RESULTS:** Patients received various essential dental treatments with intense monitoring during their dental management. Dental procedures were invasive in 68.8% and 0% of CrbV and CV groups, respectively. Dental treatments were completed uneventfully. No clinical CrbV or CV complications were noted in either group after the dental treatment. **CONCLUSION:** Within the limits of this small retrospective study, it appears

that dental treatment may be safely administered in patients a few weeks after the CrbV event as long as these patients are kept under optimal medical surveillance.

74. Elavenil, P., C. Murugavel, et al. (2010). "Folic acid in cleft lip, alveolus and palate prevention: awareness among dental professionals." *Indian J Dent Res* 21(3): 360-363.

OBJECTIVES: To determine the awareness amongst dental students, practitioners and maxillofacial surgeons the role of folic acid in the prevention of CLAP and its clinical use. **MATERIALS AND METHODS:** Questionnaire based study involving a sample base of 1100, comprising of dental students, practitioners and specialist maxillofacial surgeons. **RESULTS:** hundred percent of the sample population were aware of CLAP disorders, of which 9.5 % believed that CLAP could be prevented. 3.8 % of the population were able to correlate folic acid to CLAP while a negligible 0.03 % could provide the dosage. **CONCLUSION:** Educating healthcare providers and, in turn, the prospective parents on benefits folic acid would not only help in reducing the incidence of CLAP but also significantly influence the economics of the patients afflicted with CLAP disorders.

75. Emerich, K., M. Czerwinska, et al. (2010). "Immediate self-replantation of an avulsed permanent mandibular incisor - a case report." *Dent Traumatol* 26(5): 443-446.

BACKGROUND: Approximately 50% of children under the age of 15 years are subjected to various kinds of injuries in the orofacial region. In the permanent dentition, the most severe dental injury affects the surrounding alveolar bone structure and leads to loss of the tooth. The current literature emphasizes that the awareness of appropriate triage procedures following dental trauma is unsatisfactory and that delay in treatment is the single most influential factor affecting prognosis. **RESULTS:** This case report presents the immediate self-replantation of a right lateral mandibular incisor of a 12-year-old male patient following a traumatic avulsion. The same patient had earlier, aged 10 years, experienced a trauma leading to the loss of all four maxillary incisors. The missing incisors were replaced by a removable acrylic denture. Having the requisite experience from the earlier accident, the child performed on himself an immediate replantation of the tooth at the site of the accident. After avulsion, the tooth was not splinted timely nor was an endodontic procedure carried out and no antibiotics were prescribed. The first dental examination after the trauma was performed 6 months later and since then, radiographic follow-up has been introduced. One year after the trauma, following the late endodontic treatment performed 6 months after reimplantation, the tooth is asymptomatic and stable. **CONCLUSIONS:** Immediate self-replantation of an avulsed tooth is the best treatment choice, even without any other proceeding treatment. However, the healing process should be followed up to allow for the treatment of the early signs of pulpal necrosis and/or root resorption.

76. Ettinger, R. L. (2010). "Meeting oral health needs to promote the well-being of the geriatric population: educational research issues." *J Dent Educ* 74(1): 29-35.

This article reviews some of the more recent demographic changes affecting aging populations. The author expands the concept of aging to include persons who may be chronologically young but biologically old because they are medically compromised or developmentally disabled. It is not known how many persons can be included in this definition who will need care, and the question is what are their needs and how are we going to teach dental students and dentists to care for them. These problems are discussed, and some models of care are described.

77. 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.

78. Frencken, J. E. (2010). "The ART approach using glass-ionomers in relation to global oral health care." *Dent Mater* 26(1): 1-6.

Dental caries is the most prevalent non-communicable disease in the world. Its management in high-income countries over the last four decades has resulted in relatively low caries prevalence in child and adolescent populations. In low- and middle-income countries, caries management is virtually non-existent and this may lead to serious physical and mental complications, particularly in children. Toothache is predominantly treated by extracting the cavitated tooth. Absence of restorative oral care is partly due to the copying from high-income countries, of restorative treatment reliant on electrically driven equipment and often inappropriate for use in many low- and middle-income countries. Atraumatic Restorative Treatment (ART), which does not rely on electrically driven equipment, has yielded good results over the last two decades. ART uses hand instruments and high-viscosity glass-ionomers. Its introduction into public oral healthcare systems has been piloted in several countries. Initial short-term results show that the introduction of ART, using high-viscosity glass-ionomers, has increased the ratio of restorations to extractions. Moreover, the percentage of ART restorations in relation to the total number of restorations placed increased steeply after its introduction and has remained high. However, ART introduction faced a few barriers, the most important being high patient workloads and the absence of a constant supply of dental instruments and glass-ionomers. High-viscosity glass-ionomer has become an essential element in public oral healthcare systems, particularly in those operating inadequately.

79. Gilvetti, C., S. R. Porter, et al. (2010). "Traumatic chemical oral ulceration: a case report and review of the literature." *Br Dent J* 208(7): 297-300.

A 34-year-old man experienced extensive oral ulceration as a consequence of attempted ingestion of sulphuric acid as part of an act of deliberate self harm. All oral lesions healed within 28 days after local and systemic therapy. Oral ulceration has many potential causes ranging from physical trauma to malignancy. Chemicals are a less common cause of traumatic ulceration. Most chemical burns are characterised by mild to moderate tissue damage that heals spontaneously within seven to 15 days without scarring.

80. Glazar, I., M. M. Urek, et al. (2010). "Oral sensorial complaints, salivary flow rate and mucosal lesions in the institutionalized elderly." *J Oral Rehabil* 37(2): 93-99.

The aims of this study were to determine the prevalence of oral sensorial complaints, salivary flow rate and oral mucosal lesions in the institutionalized and non-institutionalized elderly. The study included 280 institutionalized and 61 non-institutionalized elderly people. Dry mouth, burning mouth sensations, taste disturbances, salivary flow rate and oral mucosal lesions were assessed and compared between groups. A greater number of the institutionalized elderly had dry mouth ($P = 0.001$) and taste disturbance ($P = 0.035$) compared to non-institutionalized elderly. The institutionalized elderly also had significantly lower salivary flow rate ($P < 0.0001$). Positive correlation was found between salivary flow rate and perception of dry mouth in the institutionalized elderly ($r(s) = 0.26$; $P < 0.05$), as well as in the non-institutionalized elderly ($r(s) = 0.35$; $P < 0.05$). Moreover, positive correlation was observed between salivary flow rate and the sensation of burning mouth in the institutionalized elderly ($r(s) = 0.13$; $P < 0.05$) and non-institutionalized elderly ($r(s) = 0.31$; $P < 0.05$). The number of institutionalized elderly people with oral mucosal diseases was higher compared with non-institutionalized ones ($P = 0.01$). The most common oral mucosal lesions in both groups were related to wearing dentures. It can be concluded that the institutionalized elderly are significantly affected with oral sensorial complaints, including dry mouth and taste disturbance, as well as decreased salivary flow rate and oral mucosal diseases compared with the non-institutionalized elderly.

81. Goldberg, E. M. and F. Ferguson (2010). "Treatment modalities for self-injurious behaviors observed in the special-needs patient: 2 case reports." *Pediatr Dent* 32(7): 481-485.

Self-injurious behavior (SIB) is comprised of deliberate self-harm involving frequent and repetitive activities of a destructive nature. It is commonly observed in patients with developmental delay and a variety of syndromes. SIB frequently involves oral and facial tissues, requiring intervention from the dental team. The purpose of this case report was to compare and contrast the dental management of 2 patients exhibiting self-injurious behavior. The cases

presented in this report discuss selection and application of fixed, semiremovable, and removable appliance therapy for SIB. Appliances utilized included fixed and removable "lip bumpers" as well as a novel semifixed splint to open the patient's bite to prevent SIB. It was important in both cases that the patients received regular follow-up exams so that the appliances could be appropriately altered as the patient adjusted.

82. Gonzales, C. B., S. Smith, et al. (2010). "The differences between providing oral health care to HIV-infected children and HIV-infected adults: a general dentist's guide." *Gen Dent* 58(5): 424-432; quiz 733-424.

People with HIV and AIDS are living much longer today, thanks to a better understanding of the disease process and the development of effective antiviral drugs and multidrug therapies. Consequently, HIV is now considered a chronic disease, one that affects nearly 40 million people worldwide. Highly active anti-retroviral therapy (HAART), first instituted in 1996, has led to a dramatic reduction in the number of perinatally infected children; however, in 2004, there were still 640,000 children under the age of 15 living with HIV worldwide.¹ This population of patients faces more mature health issues compared to most children their age. For example, rampant dental decay is common among children with HIV and requires advanced treatment planning that needs to be closely coordinated with members of the medical team. Maintaining good oral health in combination with medication compliance leads to sustained overall health in HIV-infected children; however, many of the medications these children take have severe adverse effects on their oral health. Furthermore, these medications may interfere with other medications that are prescribed or administered in connection with oral health care. Lastly, the systemic and oral manifestations of HIV and AIDS are different for children than they are for adults; as a result, the prognosis and treatment options for these manifestations vary, depending on the patient's age. This article will address factors that affect the oral health of HIV-infected children and adults, as well as common oral manifestations of HIV and AIDS. Key differences in treatment planning for HIV-infected children and HIV-infected adults will be outlined.

83. Guinn, A. C., T. S. Rouleau, et al. (2010). "Burning tongue and lips. Diagnosis: Sjogren syndrome with concurrent candidal infection." *J Am Dent Assoc* 141(5): 541-545.

84. Gurbuz, O., P. Kursoglu, et al. (2010). "The prevalence of temporomandibular disorder signs in people with mental retardation." *J Oral Rehabil* 37(11): 834-839.

The purpose of this study was to determine the prevalence of temporomandibular disorder (TMD) signs and tooth wear levels in a group of hospitalised patients with mental retardation (MR). A total of 118 patients with MR and 104 mentally healthy individuals (control) were included in this study. The groups consisted of equal numbers of male and female patients. TMD signs were evaluated according to the Research Diagnostic Criteria to assess the limitation in maximum mouth opening, the alterations in the mouth opening pathway and temporomandibular joint sounds. In addition, tooth wear was recorded. The frequency of at least one sign of TMD observed in patients with MR (79.7%) was significantly higher than in controls (69.2%) ($P=0.03$). In addition, 43.2% of the patients with MR had more than one sign of TMD compared with 28.8% of the control group ($P = 0.02$). Prevalence of each sign exhibited in the MR and control groups was as follows: limitation in mouth opening, 24.6% vs. 13.5% ($P=0.02$); deviation, 18.6% vs. 26.9% ($P=0.001$); deflection, 29.7% vs. 10.6% ($P=0.001$); TMJ sounds, 46.6% vs. 41.1% ($P=0.43$); bilateral joint sounds 28.8% vs. 16.3% ($P=0.05$) respectively. Prevalences of TMD signs were not different between genders in both groups ($P>0.05$). Severe tooth wear was evident in 43.2% of the patients with MR compared with 20.6% of the controls ($P=0.001$). In conclusion, patients with MR seem to be more prone to having TMD signs compared with the control population.

85. Henthorn, K. M. and C. Dickinson (2010). "The use of flumazenil after midazolam-induced conscious sedation." *Br Dent J* 209(11): E18.

OBJECTIVE: To investigate the use of flumazenil after midazolam-induced conscious sedation. **DESIGN AND SETTING:** A prospective audit was carried out in the Department of Sedation and Special Care Dentistry at Guy's Hospital, King's College, London, 2009. **Subjects** Patients sedated with midazolam for dental treatment. **METHOD:** All clinical staff completed the data capture proforma when flumazenil was administered to a patient after sedation with midazolam. **RESULTS:** Four hundred and fifty-three patients were sedated with midazolam. Flumazenil was used in 32 cases. No cases required flumazenil for the emergency treatment of respiratory depression. **CONCLUSIONS:** The results of the audit confirmed the safe and appropriate use of midazolam for conscious sedation within the Department of Sedation and Special Care Dentistry at Guy's Hospital and demonstrated that flumazenil use was low and in accordance with current best practice. The audit has highlighted distinct indications for the post-operative use of flumazenil in specifically selected cases. Each case should be individually considered, justified and documented within the patient's clinical record.

- 86. Herman, W. W. and H. W. Ferguson (2010). "Dental care for patients with heart failure: an update." J Am Dent Assoc 141(7): 845-853.**

BACKGROUND: Heart failure (HF) is a common clinical syndrome that affects an estimated 5.7 million Americans. It is a growing health problem, particularly in people 65 years or older. Therefore, the probability that dental practitioners will have patients who have HF is increasing. METHODS: The authors reviewed medical literature from 2000 through 2009 to determine the incidence, classifications, pathophysiology and advances in the medical diagnosis and treatment of HF. They also reviewed available dental literature during the same period to formulate treatment recommendations for dental care of people who have HF. RESULTS: Medicine has made advances in understanding and treating HF. These advances have resulted in the development of revised classification systems, a more structured approach to patient assessment and improved therapeutic options. CONCLUSIONS: Dentists need to be aware of advances in the diagnosis and treatment of HF. Keeping in mind the potential for morbidity in patients who have HF, identifying and accurately assessing these patients is imperative for clinical management. CLINICAL IMPLICATIONS: Often it is necessary for dentists to consult with patients' physicians to coordinate care and determine whether treatment can be rendered appropriately in a routine dental setting or whether advanced support, monitoring or both are necessary.

- 87. Hersh, E. V. and H. Giannakopoulos (2010). "Beta-adrenergic blocking agents and dental vasoconstrictors." Dent Clin North Am 54(4): 687-696.**

A clinically significant interaction between epinephrine or levonordefrin with nonselective beta-adrenergic blocking agents, although apparently rare in the dental setting, is potentially serious and can lead to significant hypertension with a concomitant reflex bradycardia. Based on the results of epinephrine infusion studies, the severity of the interaction seems dose related; small epinephrine doses cause less of a pressor response than larger doses. The interaction can be seen after intraoral submucosal injections but is generally of a smaller magnitude, at least with only 1 or 2 cartridges of lidocaine plus 1:100,000 epinephrine. However as demonstrated by 1 case report, some individuals are hypersensitive to this interaction. Inadvertent intravascular injections of local anesthetic plus vasoconstrictor and the use of high doses of vasoconstrictor are likely to result in a more pronounced response. Patients with significant cardiovascular disease may be especially vulnerable to the most serious sequelae resulting from the pressor reactions of the drug combination.

- 88. Hickey, B. M., E. A. Schoch, et al. (2010). "Complications following oral piercing. A study among 201 young adults in Strasbourg, France." Community Dent Health 27(1): 35-40.**

OBJECTIVE: This study was designed to identify and quantify the number and type of complications relating to the oral environment following piercing of tissue in the oral sphere. METHODS: The epidemiological survey included patients attending the University of Strasbourg Dental Hospital, students frequenting the University of Strasbourg canteen, and members of the public attending piercing conferences in Strasbourg, France between the months of February and June 2005. No dental examination was performed as part of this survey. RESULTS; 201 people were interviewed in this study. The average subject age was 22.7 years and 73.6% were smokers. Women comprised 72.6% of the sample population. Post-piercing complications occurred in 23.4%, but frequency depended on piercing location in relation to the oral sphere. Gingival recession occurred in 8.5%, and chipped teeth in 6.9% of the group who were aware of complications. Titanium, stainless steel and Teflon were associated with recession in 52.9%, 23.5% and 9%, and chipped teeth in 35.7%, 42.9% and 14.3% of this group respectively. CONCLUSION: The occurrence of complications was high. There is a need for public education and a further study with a dental examination.

- 89. Higham, P., F. Alawi, et al. (2010). "Medical management update: Peutz Jeghers syndrome." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 109(1): 5-11.**

Peutz Jeghers syndrome (PJS) is an autosomal dominant disease characterized by hamartomatous polyposis and distinct mucocutaneous pigmentation. PJS is associated with an increased risk for several cancers and other complications such as small intestine intussusception, short bowel syndrome, and anemia. Medical management mainly consists of treatment of the polyps and surveillance. This medical management update will review clinical concepts, therapeutic advances, and emphasize features of PJS important to the oral health care provider.

- 90. Holmlund, A., G. Holm, et al. (2010). "Number of teeth as a predictor of cardiovascular mortality in a cohort of 7,674 subjects followed for 12 years." J Periodontol 81(6): 870-876.**

BACKGROUND: That oral health is related to the development of different cardiovascular disorders is reported in a number of studies. This study investigates if different parameters of oral health are associated with future mortality in different cardiovascular disorders in a dose-dependent manner. METHODS: A total of 7,674 subjects (3,300 males and

4,374 females; age range 20 to 89 years) received a dental examination by specialists in periodontology between the years 1976 and 2002. Number of remaining teeth, severity of periodontal disease, number of deepened periodontal pockets, and bleeding on probing were evaluated in relation to cause of death. RESULTS: During a median follow-up period of 12 years, 629 of the subjects died. For 299 subjects the cause of mortality was cardiovascular disease (CVD); 167 of these subjects died from coronary heart disease (CHD); 83 died from stroke; and 49 died from aortic aneurysm or congestive heart failure. The causes of death for the remaining 330 subjects were other than CVD. After adjustment for age, gender, and smoking, number of remaining teeth predicted in a dose-dependent manner all-cause mortality and mortality in CVD and in CHD ($P < 0.0001$ for all), but not mortality from stroke ($P = 0.15$). Cox regression analysis revealed a seven-fold increased risk for mortality from CHD in subjects with < 10 teeth compared to those with > 25 teeth. Severity of periodontal disease, number of deepened periodontal pockets, and bleeding on probing were not related to mortality in a dose-dependent manner after adjustment for confounders. CONCLUSION: This fairly large, prospective study with a long follow-up period presents for the first time a dose-dependent relationship between number of teeth and both all-cause and CVD mortality, indicating a link between oral health and CVD, and that the number of teeth is a proper indicator for oral health in this respect.

91. Hong, C. H., J. J. Napenas, et al. (2010). "Frequency of bleeding following invasive dental procedures in patients on low-molecular-weight heparin therapy." *J Oral Maxillofac Surg* 68(5): 975-979.

PURPOSE: The purpose of this study was to determine the frequency of bleeding complications after invasive dental procedures in patients on low-molecular-weight heparin (LMWH) therapy. MATERIALS AND METHODS: A chart review of patients who underwent invasive dental procedures while on LMWH therapy was conducted. The following information was obtained: demographics, medical history, social history, medications, relevant laboratory values, postoperative bleeding events, and use of local hemostatic agents and blood products. RESULTS: Forty-one patients (21 men) were identified with 42 dental appointments. The mean age was 48 years (range, 16 to 78 years). Thirty-seven patients (90%) were on LMWH therapy for deep venous thrombosis prophylaxis. Thirty-one patients (76%) were on concomitant medications that may potentiate bleeding. Multiple dental extractions (range, 2 to 14 teeth) were performed during 19 dental appointments. Twenty-one appointments were for single-tooth extraction and 2 were for soft tissue biopsies. Three patients (7%) had postextraction bleeding events. All 3 patients were on LMWH (enoxaparin) and warfarin therapy concurrently. One patient had persistent bleeding after extraction of 4 teeth (international normalized ratio, 1.6), which was successfully controlled with topical thrombin, administration of vitamin K and fresh frozen plasma, and discontinuation of enoxaparin and warfarin. Postoperative bleeding in the other 2 patients was managed successfully with local hemostatic measures and home care instructions. CONCLUSION: Our study suggests that, although postoperative bleeding in patients on LMWH therapy alone is rare to nonexistent, patients on warfarin and LMWH may be at increased risk of bleeding after invasive dental procedures.

92. Horbelt, C. V. (2010). "Robinow syndrome, Cockayne syndrome, and Pfeiffer syndrome: an overview of physical, neurological, and oral characteristics." *Gen Dent* 58(1): 14-17.

The general population expects dentists to be well-versed in the typical and atypical orofacial characteristics of all potential patients. As a result, dentists must possess a reasonable amount of knowledge concerning the physical and intraoral traits associated with developmental disorders such as those associated with Robinow syndrome, Cockayne syndrome, and Pfeiffer syndrome. None of the physical, neurological, or oral anomalies discussed in this column present insurmountable barriers to providing dental care. Dental techniques and procedures performed on patients with any of these syndromes will be identical or very similar to those done on any other patient.

93. Jefferson, Y. (2010). "Mouth breathing: adverse effects on facial growth, health, academics, and behavior." *Gen Dent* 58(1): 18-25; quiz 26-17, 79-80.

The vast majority of health care professionals are unaware of the negative impact of upper airway obstruction (mouth breathing) on normal facial growth and physiologic health. Children whose mouth breathing is untreated may develop long, narrow faces, narrow mouths, high palatal vaults, dental malocclusion, gummy smiles, and many other unattractive facial features, such as skeletal Class II or Class III facial profiles. These children do not sleep well at night due to obstructed airways; this lack of sleep can adversely affect their growth and academic performance. Many of these children are misdiagnosed with attention deficit disorder (ADD) and hyperactivity. It is important for the entire health care community (including general and pediatric dentists) to screen and diagnose for mouth breathing in adults and in children as young as 5 years of age. If mouth breathing is treated early, its negative effect on facial and dental development and the medical and social problems associated with it can be reduced or averted.

94. Johnson, E., D. Briskie, et al. (2010). "The physiologic and behavioral effects of oral and intranasal midazolam in pediatric dental patients." *Pediatr Dent* 32(3): 229-238.

PURPOSE: The purpose of this study was to compare the safety and effectiveness of oral and intranasal midazolam in healthy children by evaluating their physiological and behavioral responses. METHODS: Regimen A patients received 0.5 mg/kg oral midazolam with an intranasal saline spray placebo at their first appointment and 0.3 mg/kg intranasal midazolam with an oral midazolam placebo at their second appointment. Regimen B patients received the medications in the reverse order at each appointment. Physiological parameters and behavior ratings were recorded. RESULTS: There were no significant differences in physiologic parameters in the 2 treatment groups, except for significantly lower oxygen saturation in the oral group at t=20 minutes (P=.03). The oral group showed significantly lower crying scores at t=5 minutes (P=.02), and lower overall behavior scores at t=papoose and t=5 minutes (P=.04 and .03, respectively). Oral sedations were given ratings by providers of "effective" and "very effective" significantly more than intranasal sedations (P<.05). CONCLUSIONS: Both regimens have similar behavioral outcomes, with the oral group having improved crying and overall behavior early in the appointment. Oral sedations were considered to be more effective by providers than intranasal sedations. Clinically significant desaturations occur in both regimens, indicating the need for operators to recognize and respond to the need for airway correction according to American Academy of Pediatric Dentistry guidelines.

95. Johnson, N. W. (2010). "The mouth in HIV/AIDS: markers of disease status and management challenges for the dental profession." *Aust Dent J* 55 Suppl 1: 85-102.

There are over 30 million people in the world with HIV infection and, whilst the rate of new infections is slowing, this number continues to grow. Although in Australia the overall prevalence of HIV infection in adults aged 15-49 is officially estimated at only 0.2%, representing less than 20,000 people living with HIV and AIDS, our geographical area contains populations with prevalences exceeding 10 times this. Oral health professionals must therefore practise safe, standard infection control at all times and be aware of the oral manifestations of HIV disease. These are predominantly opportunistic infections with fungi such as *Candida albicans* or with viruses of the herpes family, particularly herpes simplex, herpes zoster and Epstein-Barr virus infections. Warts or papillomas may arise due to human papilloma viruses—even in individuals on effective antiretroviral therapy. Rare types of fungal infection can occur, and severe bacterial infections, notably tuberculosis, are an ever-present risk. Susceptibility to periodontal breakdown is somewhat enhanced by the effects of HIV disease itself, and caries activity may increase because the patient neglects attention to diet and oral hygiene. Restorative and periodontal care need, therefore, to be maintained at a high level. Oral opportunistic infections cause much distress and the diagnosis and management of these is the responsibility of our profession.

96. Kapferer, I., K. Berger, et al. (2010). "Self-reported complications with lip and tongue piercing." *Quintessence Int* 41(9): 731-737.

OBJECTIVES: Owing to the overwhelming popularity of oral piercing, general practitioners should be prepared to address complications arising as a result of oral piercing and to provide patients with accurate information. The purpose of this cross-sectional study was to assess the prevalence of early and late complications associated with lip and tongue piercing in a population obtained from a nondental setting. Possible cofactors were evaluated. METHOD AND MATERIALS: The study cohort included 130 lip and 80 tongue piercings. Participants were asked to complete a questionnaire to determine demographic data, smoking habits, characteristics of the piercing worn (time since piercing, material-plastic or metal), postpiercing complications, and possible cofactors. RESULTS: Prevalence of early piercing complications was 87.83%. Although there was no statistically significant difference in the overall prevalence of early postpiercing complications after lip or tongue piercing, the type of complication differed significantly according to the piercing location. Significant cofactors for early complications were oral hygiene behavior, gender, and the person who performed the piercing. The highest prevalence of late complications was found to be recurrent infections and gingival recessions. As cofactors, time since piercing and oral hygiene behavior had a significant impact on late complications. CONCLUSION: Early complications after oral piercing are frequent. Oral health care might be an important tool to minimize early and late postpiercing complications. Owing to the high prevalence of late complications—especially after median lip piercing—persons with oral piercing should attend regular dental checks and receive professional advice on tooth cleaning and oral hygiene.

97. Kaur, G., K. M. Verhamme, et al. (2010). "Association between calcium channel blockers and gingival hyperplasia." *J Clin Periodontol* 37(7): 625-630.

AIM: To study the effect of the dose and type of calcium channel blockers (CCBs) on the risk of gingival hyperplasia and to quantify this association. METHODS: The study was conducted within the Integrated Primary Care Information Project in The Netherlands. A nested case-control study was designed within a cohort of all patients who were new users of either CCBs or drugs interacting with the renin-angiotensin system (RAS). Cases were all individuals with a validated diagnosis of gingival hyperplasia. Controls were matched on age, gender and index date. RESULTS: Within the study population, 103 cases of gingival hyperplasia were identified and matched to 7677 controls. The risk of gingival hyperplasia was higher in current users of CCBs [adjusted odds ratio (OR(adj)) 2.2, 95% confidence intervals (95% CI): 1.4-3.4], especially in dihydropyridines (OR(adj) 2.1, 95% CI: 1.3-3.5) and benzothiazepine derivatives (OR(adj) 2.9, 95% CI: 1.3-6.5) than in RAS drug users. The risk increased in patients using more than the recommended daily dose (OR(adj) 3.0, 95% CI: 1.6-5.5) and when the duration of current use was <1 month (OR(adj) 5.2, 95% CI: 2.1-12.6). CONCLUSION: This study shows that the risk of gingival hyperplasia is twofold higher in current users of CCBs than in users of RAS drugs. The association was dose dependent and the highest for dihydropyridines or benzothiazepine derivatives.

98. Kerr, A. R., P. M. Corby, et al. (2010). "Use of a mucoadhesive disk for relief of dry mouth: a randomized, double-masked, controlled crossover study." J Am Dent Assoc 141(10): 1250-1256.

BACKGROUND: Dry mouth is a frequent complaint of adults worldwide. In those who experience dry mouth, therapeutic options include the use of salivary substitutes and sialogogues. METHODS: The authors compared the efficacy and safety of mucoadhesive disks (OraMoist, Axiomedic, Zurich; distributed by Quantum Health, Eugene, Ore.) applied three times daily with those of placebo mucoadhesive disks in a double-masked, randomized, controlled crossover study. The primary end point of interest was within-participant differences in subjective (visual analog scale) ratings of dry mouth according to the New York University Bluestone Mouthfeel Questionnaire. The secondary end point was within-participant differences in salivary flow rates. RESULTS: Twenty-seven participants completed the single-site study. The results showed no significant difference between the two types of mucoadhesive disks, both of which were associated with a statistically significant improvement in the subjective experience of moistness across the 60-minute period after application and compared with baseline measures after two weeks of use. Furthermore, both disks were associated with a statistically significant improvement in salivary flow rates across the 60-minute period after application and compared with baseline measures after one and two weeks of use. The disks were well tolerated, and participants did not report any adverse events. CONCLUSIONS: The mucoadhesive disks used in this study were safe and provided symptomatic relief from dry mouth. Practice Implications. Patients with dry mouth may benefit from this novel delivery system.

99. Khocht, A., M. Janal, et al. (2010). "Periodontal health in Down syndrome: contributions of mental disability, personal, and professional dental care." Spec Care Dentist 30(3): 118-123.

Fifty-five dentate patients with Down syndrome (DS) and 74 with mental disability non-Down (MR) were compared to 88 control subjects. Subjects in the MR and Control groups were matched by gender and ethnicity to subjects with DS. All subjects were nonsmokers. Periodontal evaluation included plaque index (PI), gingival index (GI), bleeding on probing (BOP), and clinical periodontal attachment levels. Caries and missing teeth were recorded. Measures of personal dental hygiene and the frequency of professional dental care were also recorded. Most subjects brushed their teeth at least once per day, but did not floss. Both groups with DS and MR had significantly more missing teeth, more BOP, and higher GI and PI levels than the control group. Patients with DS had more attachment loss (AL) than the other two groups ($p < .001$). Increased AL in patients with DS was not associated with differences in socioeconomic status, personal/professional dental care, or mental disability.

100. Khozeimeh, F., M. A. Shahtalebi, et al. (2010). "Comparative evaluation of ketoconazole tablet and topical ketoconazole 2% in orabase in treatment of Candida-infected denture stomatitis." J Contemp Dent Pract 11(2): 017-024.

AIM: Denture stomatitis is a common and recurring problem of denture wearers. Ketoconazole tablet is one of the antimycotic drugs that often has been used to treat this condition, but systemic use of this drug has some adverse effects that frequently lead to unfavorable compliance and treatment failure. This study was designed to compare the efficacy of topical ketoconazole 2% in orabase and ketoconazole tablet. METHODS AND MATERIALS: Thirty patients with denture stomatitis (positive culture) were divided into two groups. The first group received ketoconazole tablet (orally used 200 mg per day) for 14 days and the second group received 2% topical ketoconazole in orabase applied twice daily on the mucosal denture surface. Candida cultures were taken from the palatal mucosa before and on days 7 and 14 after commencement of the therapy. The mean of colonies before and 7 and 14 days after medication were

calculated. One-way ANOVA and paired t-test were used for data analysis ($\alpha=0.05$). RESULTS: The mean of colonies number before receiving medication in the tablet and topical application groups were 454 and 441 respectively. The mean of colonies number after receiving medication in tablet and topical application group were 137 and 176 (on the seventh day) and 122 and 96 (on the 14th day), respectively; there was no significant difference between the two groups after medication ($p=0.18$). CONCLUSION: Topical ketoconazole 2% in orabase can be useful in managing denture stomatitis. This topical medication has fewer side effects, whereas systemic administration of ketoconazole tablet is associated with some complications. CLINICAL SIGNIFICANCE: The application of topical ketoconazole 2% in orabase ointment can be considered in the treatment of denture stomatitis and has comparable efficacy with the ketoconazole tablet.

101. Kasser, G. D., C. S. Greene, et al. (2010). "Oral appliances and the management of sleep bruxism in adults: a century of clinical applications and search for mechanisms." *Int J Prosthodont* 23(5): 453-462.

The phenomenon of sleep bruxism (SB) has been recognized and described for centuries, including literary references to the gnashing of teeth. Early etiologic explanations were generally focused on mechanistic factors, but later, attention was focused on psychologic issues such as stress and anxiety; by the end of the 20th century, most opinions combined these two ideas. However, recently, the study of the SB phenomena has occurred primarily in sleep laboratories in which patients could be observed and monitored over several nights. Various other physiologic systems were also studied in sleep laboratories, including brain activity, muscle activity, cardiac function, and breathing. As a result of these studies, most authorities now consider SB to be a primarily sleep-related movement disorder, and specific diagnostic criteria have been established for the formal diagnosis of that condition. All of these changes in the understanding of the SB phenomena have led to a corresponding change in thinking about how oral appliances (OAs) might be used in the management of SB. Originally, they were thought to be a temporary measure that could help dentists analyze improper dental relationships. Unfortunately, this often led to dental procedures to "improve" these relationships, including equilibrations, orthodontics, bite opening, or even major restorative dentistry. However, it is now understood that the proper role for OAs is to protect the teeth and hopefully to diminish muscle activity during sleep. This paper reviews these evolutionary changes in the understanding of SB and how this affects concepts of designing and using OAs.

102. Kluppel, L. E., S. Olate, et al. (2010). "Efficacy of eminectomy in the treatment of prolonged mandibular dislocation." *Med Oral Patol Oral Cir Bucal* 15(6): e891-894.

Surgery of the temporomandibular joint is indicated for different clinical situations, including internal derangements, hypomobility, hypermobility, pathology and trauma. Mandibular dislocation is an acute painful condition that causes severe functional limitation. Manual reduction, with or without pharmacological assistance, is the treatment of choice and should be performed as early as possible. On rare situations mandibular dislocation may not be perceived by the patient and remain undiagnosed or misdiagnosed for a long period. This may include severe illness, neurological diseases and prolonged intensive care hospitalization with oral intubation and sedation. Treatment of prolonged mandibular dislocation is different. Morphological changes of the joint and associated structures will prevent successful manual reduction even with the patient under general anesthesia. Basically, two types of surgery may be indicated: elimination of the articular eminence (eminectomy) or reestablishment of a new condyle-ramus relationship, that can be achieved by condylotomy. This article reports a case of prolonged mandibular dislocation that was treated surgically with success. A review of the literature is performed by authors and advantages and disadvantages of each type of treatment are discussed.

103. Landi, L., P. F. Manicone, et al. (2010). "A novel surgical approach to impacted mandibular third molars to reduce the risk of paresthesia: a case series." *J Oral Maxillofac Surg* 68(5): 969-974.

PURPOSE: Extraction of impacted mandibular third molars (M3s) may cause temporary or permanent neurosensory disturbances of the inferior alveolar nerve (IAN). Although the incidence of this complication is low, a great range of variability has been reported in the literature. Several methods to reduce or eliminate this complication have been proposed, such as orthodontic-assisted extraction, extraction of the second molar, or intentional odontectomy. The purpose of this series of cases is to present a novel approach for a riskless extraction of impacted mandibular M3s in contact with the IAN. MATERIALS AND METHODS: Nine consecutive patients (4 male and 5 female; mean age 24.9 years, range 18-43 years) required the extraction of 10 horizontally or mesioangular impacted mandibular M3s. In all cases the M3 was in contact with the IAN with a high risk of nerve injury. A staged approach was proposed and accepted by the patients. This approach consisted in the surgical removal of the mesial portion of the anatomic crown to create adequate space for mesial M3 migration. After the migration of the M3 had taken place, the extraction could

then be accomplished in a second surgical session minimizing neurological risks. RESULTS: All M3s moved mesially within 6 months (mean 174.1 days, range 92-354 days) and could be successfully removed without any neurological consequences. CONCLUSION: This technique may be considered as an alternative approach to the extraction of horizontally or mesioangular impacted M3s in proximity to the IAN.

104. Lewis, B. (2010). "The obsolescence of formocresol." J Calif Dent Assoc 38(2): 102-107.

Concern has existed for almost 10 years regarding the safety and efficacy of formaldehyde-based medicaments like formocresol in dentistry. Formocresol has been shown to be therapeutically outdated for decades. While the use of formocresol around the world continues to drop, it still is utilized in alarmingly high rates, an age-old bias that is unsubstantiated by overall academic research. Formaldehyde remains a genotoxic and carcinogenic problem worldwide. The most recent articles are discussed in light of the need to abandon formocresol.

105. Lieberman, B. L., M. K. Kennedy, et al. (2010). "Control of life-threatening head and neck hemorrhage after dental extractions: a case report." J Oral Maxillofac Surg 68(9): 2311-2319.

106. Lourenco-Matharu, L. and G. J. Roberts (2010). "Oral sedation for dental treatment in young children in a hospital setting." Br Dent J 209(7): E12.

INTRODUCTION: Conscious sedation for young children is a rapidly developing area of clinical activity. Many studies have shown positive results using oral midazolam on children. These case series investigated oral midazolam conscious sedation as an alternative to general anaesthesia in a clinical service setting. OBJECTIVE: The purpose of this work was to determine the safety and efficacy of oral midazolam for conscious sedation in children undergoing dental treatment. METHODS: Patients were selected by colleagues for treatment under oral sedation. The main general criteria were weight below 36 kilos and ASA I, II, or III. Midazolam 0.5 mg/kg was administered orally. A pulse oximeter was applied to a finger to monitor vital signs and the Houpt scale was used to assess behaviour. RESULTS: A total of 510 children aged between 13 months and 11 years were included. The behaviour of 379 (74%) was excellent or very good. The pulse rate and peripheral oxygenation were within the normal range for all patients. The main adverse effects were diplopia and post-sedation dysphoria. CONCLUSIONS: Oral midazolam is a safe and effective method of sedation although some children were agitated and distressed either during or after treatment. Parents need to be warned about this.

107. Lu, D. P. (2010). "Using alternating bilateral stimulation of eye movement desensitization for treatment of fearful patients." Gen Dent 58(3): e140-147.

Since the mid-1990s, eye movement desensitization (EMD) has been used in the realm of clinical psychology and psychiatry as a nonpharmacotherapeutic modality for the treatment of phobias, post-traumatic symptoms, and various psychotrauma cases. EMD can also be incorporated into the use of hypnosis, although the two are not the same thing. This study examined various clinical applications of the eye movement component of EMD (known as alternating bilateral stimulation (ABS)) on fearful dental patients who had a history of traumatic dental experiences. Findings were based on the clinical impressions and assessments of both the patients and the operating team. Results show that ABS, while effective for enabling patients to undergo non-invasive dental procedures such as clinical examinations and simple prophylaxis, has only limited beneficial effect for extremely fearful patients who must undergo invasive procedures such as extraction, drilling, and injections. Nevertheless, ABS is effective for mild to moderate patient phobia and anxiety. Although EMD is more effective than ABS, ABS is simple and easy for patients and clinicians to perform during treatment and can be performed readily in the dental office.

108. Lubisich, E. B., T. J. Hilton, et al. (2010). "Cracked teeth: a review of the literature." J Esthet Restor Dent 22(3): 158-167.

Although cracked teeth are a common problem for patients and dentists, there is a dearth of evidence-based guidelines on how to prevent, diagnose, and treat cracks in teeth. The purpose of this article is to review the literature to establish what evidence exists regarding the risk factors for cracked teeth and their prevention, diagnosis, and treatment.

109. Madani, M., F. M. Madani, et al. (2010). "Psychological issues in sleep apnea." Oral Maxillofac Surg Clin North Am 22(4): 503-509.

The overlap of sleep disorders with various psychiatric problems is so great that one would suspect that both types of problems may have common biologic roots. An estimated 65% to 90% of adults with major depression experience

some kind of sleep problem. Sleep problems also increase the risk for developing depression. Since the early days of research on disturbed sleep, clinical studies have suggested the existence of a relationship between depression and obstructive sleep apnea.

110. Majid, O. W. (2010). "Clinical use of botulinum toxins in oral and maxillofacial surgery." *Int J Oral Maxillofac Surg* 39(3): 197-207.

Botulinum toxin (BTX) is a bacterial toxin that could be used as a medicine. Clinical applications of BTX have been expanding over the last 30 years and novel applications reported. Its mechanism of inhibiting acetylcholine release at neuromuscular junctions following local injection is unique for the treatment of facial wrinkles. Other dose-dependent anti-neuroinflammatory effects and vascular modulating properties have extended its spectrum of applications. Conditions such as temporomandibular joint disorders, sialorrhea, headache and neuropathic facial pain, muscle movement disorders, and facial nerve palsy could also be treated with this drug. Further applications of BTX are likely to be developed. This paper reviews the established and emerging applications of BTX in the field of oral and maxillofacial surgery. An overview of the pharmacology, toxicity and preparations of the agent is given.

111. Malamed, S. F., K. Reed, et al. (2010). "Needle breakage: incidence and prevention." *Dent Clin North Am* 54(4): 745-756.

Since the introduction of nonreusable, stainless steel dental local anesthetic needles, needle breakage has become an extremely rare complication of dental local anesthetic injections. But although rare, dental needle breakage can, and does, occur. Review of the literature and personal experience brings into focus several commonalities which, when avoided, can minimize the risk of needle breakage with the fragment being retained from occurring.

112. 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 bisphosphonate-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.

113. Markman, S., J. Khan, et al. (2010). "Elusive dental pain." *Gen Dent* 58(2): e62-67.

The dental profession is devoted to treating and preventing dental pain. Such pain can be referred from teeth in one jaw to teeth in the opposing jaw, and the origin of the pain a patient describes may not be the same as the source of that pain. As a result, dental procedures often produce no relief for the patient. This article discusses the neural mechanisms involved in referred pain from one tooth to another and from muscles to teeth.

114. Marshall, J., B. Sheller, et al. (2010). "Caries-risk assessment and caries status of children with autism." *Pediatr Dent* 32(1): 69-75.

PURPOSE: This paper's purpose was to describe the caries status of children with autism and explore associations with the Caries-risk Assessment Tool promoted by the American Academy of Pediatric Dentistry. **METHODS:** Data was collected from children with autism, their parents, and dentists using interviews, surveys, and treatment records. Descriptive statistics and bivariate analysis explored the association of new caries activity and caries experience with oral health measures. **RESULTS:** Subjects were 75 males and 24 females with a mean age (+/-SD) of 9.7 years (+/-3.7), (range=2.7 to 19 years). Children < or =7 years old had more new caries (60%) than older children (34%; P=.05). Although not statistically significant, all children who brushed less than once per day had new caries and a mean t-DMF-T (def + DMF) of 73. Children with poor oral hygiene had more new caries (59%) than those with good/excellent hygiene (28%; P=.06). Caries status was not associated with gender, socioeconomic status, medical history, appointment type, dental home, food rewards, restricted diets, and some hygiene habits. **CONCLUSIONS:** This study confirms the validity of considering autism as an indicator of high caries risk. Oral hygiene may be the most influential risk indicator associated with new caries in children with autism.

115. Martins-Junior, R. L., A. J. Palma, et al. (2010). "Temporomandibular disorders: a report of 124 patients." J Contemp Dent Pract 11(5): 071-078.

AIM: This study aims to present both the features of 124 consecutive patients with temporomandibular disorders (TMDs) and the results of a reversible, conservative, and low-tech treatment. METHODS AND MATERIALS: One hundred fifty-eight records of consecutive patients treated in School of Dentistry at the Univag-University Center in Varzea Grande-MT, Brazil, 124 of whom were considered TMD patients, were examined. The following data were obtained: gender, age, main complaint, diagnosis, co-morbidities, type of treatment performed, and treatment results. The patients who received a successful treatment were contacted for reevaluation four to six years after the conclusion of treatment. RESULTS: Pain was the main complaint for 92.7 percent of the patients. The majority of patients were female (female:male ratio of 4.1:1), with a peak age range between 20 and 30 years. Roughly 59.7 percent of the patients were diagnosed as having a muscular TMD, 12.9 percent as an articular TMD, and 27.4 percent as a mixed TMD. The success rate for treatment was 91.7 percent, and there was a tendency toward the long-term maintenance of good results. CONCLUSION: The features of the 124 TMD patients treated were similar to those reported in the literature with regard to gender, age, and diagnostic prevalence. Most of the disorders were of a muscular origin, and there was a predominance of women between 20 and 30 years of age. The conservative, reversible, and low-tech treatment success rate for TMD can reach values above 90 percent. Therefore, there is no need for invasive, irreversible, expensive, or high-tech treatments for the majority of patients. CLINICAL SIGNIFICANCE: The majority of TMD patients can benefit from reversible, conservative, and low-tech treatments such as parafunction control and therapeutic exercises that can be performed by any clinician once an accurate diagnosis has been made.

116. McGrady, M. G., R. P. Ellwood, et al. (2010). "Why fluoride?" Dent Update 37(9): 595-598, 601-592.

Fluoride has been used in dentistry for over 100 years for the purpose of preventing dental caries. During this time there has been great debate over the mode of action, the optimum method of delivery, and the potential risks associated with its use. This, the first of three papers, will provide a summary of the history of the use of fluoride, the mode of action, benefits and different methods of delivery. It will also discuss the potential risk of dental fluorosis. CLINICAL RELEVANCE: This article aims to provide a background for general practitioners for the appropriate use of fluorides in dentistry, enable them to understand the wider significance of fluoride in dentistry and to be able to answer non-clinical questions raised by patients.

117. McKenzie, W. S. and M. Rosenberg (2010). "Paradoxical reaction following administration of a benzodiazepine." J Oral Maxillofac Surg 68(12): 3034-3036.

118. Mehta, P. and L. P. Lim (2010). "The width of the attached gingiva--much ado about nothing?" J Dent 38(7): 517-525.

OBJECTIVES: This narrative review aims to outline the concepts on the significance of the width of attached gingiva around teeth and implants to enable the clinician to decide on the need for gingival augmentation in different clinical scenarios. DATA AND SOURCES: An electronic search was done on PUBMED & Cochrane Database using the keywords from 1972 to November 2009. A manual hand search was also done in Journal of Periodontology and Journals of Clinical Periodontology for relevant articles under this topic. Any relevant paper from the references was hand searched. A total of 1167 references were obtained, 103 full text papers was retrieved of which 59 articles was selected for this review. CONCLUSIONS: The width of attached gingiva is not significant to maintain periodontal health in the presence of adequate oral hygiene. However, thin gingival tissues around teeth with restorations or undergoing labial orthodontic tooth movement may be more susceptible to recession. The functional need for attached gingiva around implants has not been established but its aesthetic value has been widely accepted.

119. Mente, J., B. Geletneky, et al. (2010). "Mineral trioxide aggregate or calcium hydroxide direct pulp capping: an analysis of the clinical treatment outcome." J Endod 36(5): 806-813.

INTRODUCTION: The use of mineral trioxide aggregate (MTA) might improve the prognosis of teeth after pulp exposure. The treatment outcome of teeth after direct pulp capping, either with mineral trioxide aggregate (MTA) or calcium hydroxide (controls), was investigated, taking into account possible confounding factors. METHODS: One hundred forty-nine patients treated between 2001 and 2006 who received direct pulp capping treatment in 167 teeth met the inclusion criteria. Treatment was performed by supervised undergraduate students (72%) and dentists (28%). Assessment of clinical and radiographic outcomes was performed by calibrated examiners 12-80 months after treatment (median, 27 months). RESULTS: One hundred eight patients (122 treated teeth) were available for follow-up (72.5% recall rate). A successful outcome was recorded for 78% of teeth (54 of 69) in the MTA group and for 60% of teeth (32 of 53) in the the calcium hydroxide group. The univariate analysis (generalized estimation equations model

[GEE model] showed a significant difference in the success rate (odds ratio [OR], 2.36; 95% confidence interval [CI], 1.05-5.32; $P = .04$). In the multiple analysis (GEE model), the OR is marginally inside the nonsignificant range (OR, 0.43; 95% CI, 0.19-1.02; $P = .05$) when conspicuous confounding factors are stabilized (univariate analysis). Multiple analysis showed that teeth that were permanently restored $>or=2$ days after capping had a significantly worse prognosis in both groups (OR, 0.24; 95% CI, 0.09-0.66; $P = .01$). CONCLUSIONS: MTA appears to be more effective than calcium hydroxide for maintaining long-term pulp vitality after direct pulp capping. The immediate and definitive restoration of teeth after direct pulp capping should always be aimed for.

120. Miamoto, C. B., M. L. Ramos-Jorge, et al. (2010). "Severity of malocclusion in patients with cerebral palsy: determinant factors." *Am J Orthod Dentofacial Orthop* 138(4): 394 e391-395; discussion 394-395.

INTRODUCTION: Our aims in this study were to compare the biopsychosocial aspects of patients with cerebral palsy and subjects in a control group, establish the severity of malocclusion, and identify determinant factors. METHODS: The group with cerebral palsy included 60 patients diagnosed with the spastic form of the disease. The control group included 60 randomly selected healthy subjects with various malocclusions. Data were collected through questionnaires, medical charts, and clinical evaluations. The criteria of the dental aesthetic index were used for the diagnosis of malocclusion. Comparisons between groups and between the independent variables and dependent variable (severity of malocclusion) were performed by using the chi-square test ($P \leq 0.05$) and multivariate logistic regression (forward stepwise procedure). RESULTS: Significant differences between the groups were found for these variables: tooth loss, overjet, anterior open bite, facial type, breathing pattern, drooling, difficulty in swallowing, and lip incompetence. CONCLUSIONS: The main risk factors associated with the severity of malocclusion were cerebral palsy, mouth breathing, lip incompetence, and long face.

121. Moore, P. A. and D. A. Haas (2010). "Paresthesias in dentistry." *Dent Clin North Am* 54(4): 715-730.

Alterations to normal oral sensory function can occur following restorative and surgical dental procedures. Paresthesia is defined as an abnormal sensation, such as burning, pricking, tickling, or tingling. Paresthesias are one of the more general groupings of nerve disorders known as neuropathies. This article reviews the extent of this oral complication as it relates to dental and surgical procedures, with specific emphasis on paresthesias associated with local anesthesia administration. This review establishes a working definition for paresthesia as it relates to surgical trauma and local anesthesia administration, describes the potential causes for paresthesia in dentistry, assesses the incidence of paresthesias associated with surgery and local anesthesia administration, addresses the strengths and weaknesses in research findings, and presents recommendations for the use of local anesthetics in clinical practice.

122. Moore, P. A. and E. V. Hersh (2010). "Local anesthetics: pharmacology and toxicity." *Dent Clin North Am* 54(4): 587-599.

The development of safe and effective local anesthetic agents has possibly been the most important advancement in dental science to occur in the last century. The agents currently available in dentistry are extremely safe and fulfill most of the characteristics of an ideal local anesthetic. These local anesthetic agents can be administered with minimal tissue irritation and with little likelihood of inducing allergic reactions. A variety of agents are available that provide rapid onset and adequate duration of surgical anesthesia. This introductory article provides a brief update of the clinical pharmacology of local anesthetic agents and formulations used in dentistry at present.

123. Morris, C. D., J. Rasmussen, et al. (2010). "The anatomic basis of lingual nerve trauma associated with inferior alveolar block injections." *J Oral Maxillofac Surg* 68(11): 2833-2836.

PURPOSE: This study describes the anatomic variability in the position of the lingual nerve in the pterygomandibular space, the location of the inferior alveolar nerve block injection. MATERIALS AND METHODS: Simulated standard landmark-based inferior alveolar nerve blocks were administered to 44 fixed sagittally bisected cadaver heads. Measurements were made of the diameter of the nerves and distances between the needle and selected anatomic landmarks and the nerves. RESULTS: Of 44 simulated injections, 42 (95.5%) passed lateral to the lingual nerve, 7 (16%) passed within 0.1 mm of the nerve, and 2 (4.5%) penetrated the nerve. The position of the lingual nerve relative to bony landmarks within the interpterygoid fascia was highly variable. CONCLUSION: Variation in the position of the lingual nerve is an important contributor to lingual nerve trauma during inferior alveolar block injections. This factor should be an important part of preoperative informed consent.

124. Moursi, A. M., J. B. Fernandez, et al. (2010). "Nutrition and oral health considerations in children with special health care needs: implications for oral health care providers." *Pediatr Dent* 32(4): 333-342.

Children with special health care needs are at increased risk for oral diseases. The purpose of this article was to discuss: nutritional and oral health factors routinely observed in most chronic childhood disorders; dietary modifications associated with select systemic disorders and how they may impact oral health in children; and the following factors common to chronic disorders associated with diet modifications-decreased appetite and increased nutritional risk; frequency of food intake; parental overindulgence; long-term use of cariogenic medications; and xerostomia. Characteristics of childhood disorders that require dietary modifications (congenital heart disease, cystic fibrosis, cancer, AIDS/HIV, diabetes mellitus, and phenylketonuria) are summarized. In addition, healthy dietary modifications and oral health recommendations are suggested. Implementation of these recommendations can assist the dentist and dental team as they join physicians and nutritionists in delivering the best possible care to children with special health care needs.

125. Murphy, J., E. Twohig, et al. (2010). "Dentists' approach to patients on anti-platelet agents and warfarin: a survey of practice." *J Ir Dent Assoc* 56(1): 28-31.

In everyday practice, dentists are confronted with the dilemma of patients on anti-platelet agents and warfarin who require invasive dental procedures and, more pertinently, dental extractions. There may be a divergence of opinion among dentists regarding how they manage these patients. AIMS: To assess general dental practitioners' approach to the management of patients taking anti-platelet agents and/or warfarin who are undergoing invasive dental procedures. METHODS AND DATA: A semi-structured questionnaire was designed to survey general dental practitioners in a large Irish urban area. RESULTS: A response rate of 89% was achieved in a study population of 54 general dental practitioners. A total of 25% of respondents who carry out extractions on warfarinised patients do not check the INR prior to invasive dental procedures. Some 90% of respondents stop anti-platelet agents prior to extractions. CONCLUSIONS: A significant proportion of respondents fail to check warfarinised patients' INR prior to invasive dental procedures. Furthermore, a trend of stopping anti-platelet agents was noted, which is in contrast with current recommendations in the dental literature. Certain practices in this small study population proved alarming and highlight the need for improved awareness of current guidelines. A further large-scale study may be justified, as variation in practice may have clinical and medico-legal repercussions.

126. Newbrun, E. (2010). "What we know and do not know about fluoride." *J Public Health Dent* 70(3): 227-233.

There is much that we know about fluoride as it relates to human health in general and dental health in particular. Some of the information that is known concerning water fluoridation and dental fluorosis is listed. What we do not know about fluoride is discussed in more detail, namely the efficacy of lower levels of fluoride in drinking water, the effect of discontinuing fluoride in drinking water in the absence of additional preventive measures, the prevalence of fluorosis and whether or not this presents a cosmetic problem. Other issues discussed include the actual amount of fluoride ingested from all sources, whether low-fluoride dentifrices are as efficacious as conventional dentifrices in caries protection and reducing enamel fluorosis, the role of socioeconomic factors in determining caries prevalence, and the effects of bottled water use on caries prevalence in fluoridated communities.

127. 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.

128. Pandey, R. K., M. Y. Padmanabhan, et al. (2010). "Midazolam-fentanyl analgo-sedation in pediatric dental patients--a pilot study." *J Clin Pediatr Dent* 35(1): 105-110.

OBJECTIVE: The objective of this study was to comparatively evaluate the effectiveness of submucosal fentanyl when administered in conjunction with oral midazolam during pediatric procedural sedations. STUDY DESIGN: Twenty three uncooperative ASA type I children who met the selection criteria were randomly assigned to receive either submucosal fentanyl (3 microg/kg) or placebo, along with oral midazolam (0.5 mg/kg). A triple blind, 2-stage cross-over design was

adopted so that each child received both the regimens. RESULTS: Transient oxygen desaturation was observed in 4 children who were sedated with the combination of oral midazolam and submucosalfentanyl. The overall success was 73.91% with oral midazolam and submucosal fentanyl regimen and 47.83% for oral midazolam and submucosal placebo regimen. The chances of 'satisfactorily' completing a 45 minute dental procedure in an uncooperative pediatric patient was 2.8 times more, when submucosalfentanyl was used along with oral midazolam. CONCLUSION: Submucosal fentanyl appears to improve the short working time associated with oral midazolam. But the oxygen desaturation associated with this regimen necessitates further studies to evaluate the efficacy of this combination at relatively lower doses before being used routinely for pediatric procedural sedation and analgesia.

129. Parirokh, M., R. Ashouri, et al. (2010). "The effect of premedication with ibuprofen and indomethacin on the success of inferior alveolar nerve block for teeth with irreversible pulpitis." J Endod 36(9): 1450-1454.

INTRODUCTION: Achieving pulp anesthesia with irreversible pulpitis is difficult. This study evaluated whether nonsteroidal anti-inflammatory drugs assist local anesthesia. METHODS: In a randomized double-blinded clinical trial, 150 patients (50 per group) with irreversible pulpitis were given placebo, 600 mg ibuprofen, or 75 mg indomethacin 1 hour before local anesthesia. Each patient recorded their pain score on a visual analog scale before taking the medication, 15 minutes after anesthesia in response to a cold test, during access cavity preparation and during root canal instrumentation. No or mild pain at any stage was considered a success. Data were analyzed by the chi-square and analysis of variance tests. RESULTS: Overall success rates for placebo, ibuprofen, and indomethacin were 32%, 78%, and 62%, respectively ($p < 0.001$). Ibuprofen and indomethacin were significantly better than placebo ($p < 0.01$). There was no difference between ibuprofen and indomethacin ($p = 0.24$). CONCLUSIONS: Premedication with ibuprofen and indomethacin significantly increased the success rates of inferior alveolar nerve block anesthesia for teeth with irreversible pulpitis.

130. Parirokh, M., S. A. Satvati, et al. (2010). "Efficacy of combining a buccal infiltration with an inferior alveolar nerve block for mandibular molars with irreversible pulpitis." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 109(3): 468-473.

OBJECTIVE: The aim of this study was to assess the efficacy of inferior alveolar nerve (IAN) block combined with buccal infiltration for mandibular molars with irreversible pulpitis. METHODOLOGY: Eighty-four patients were randomly assigned to 3 groups of 28 patients each. Lidocaine 2% with 1:80,000 epinephrine was used for all injections. Group I patients received an IAN block with 1.8 mL of anesthetic. Group II patients received an IAN block using 3.6 mL. Group III patients received 1.8 mL as an IAN block and 1.8 mL as a buccal infiltration. A visual analogue scale was used to rate pain before anesthesia and discomfort experienced before and during access cavity preparation. Data were analyzed by chi-square, ANOVA, Kruskal-Wallis, and Mann-Whitney tests. RESULTS: The success rates for groups I to III were 14.8%, 39.3%, and 65.4%, respectively. Group III had significantly better anesthesia compared with group I ($P < .05$). CONCLUSION: Combining an IAN block and a buccal infiltration injection provided more effective anesthesia in mandibular molars with irreversible pulpitis. However, some cases may still require further anesthesia to prevent pain during endodontic treatment.

131. Passos Jde, S., I. S. Gomes-Filho, et al. (2010). "Outcome measurements in studies on the association between osteoporosis and periodontal disease." J Periodontol 81(12): 1773-1780.

BACKGROUND: The present study aims to compare different diagnostic criteria for periodontal disease that were used to study the association between periodontal disease and osteoporosis. METHODS: A database from a case-control study was used. The present study included sociodemographic, lifestyle, and health-condition data; panoramic radiographs; and clinical measurements on periodontal conditions from 139 postmenopausal women. Each participant was classified with regard to the diagnosis of periodontal disease using five different criteria for the outcome measurement (OM) found in the literature in studies on the association between osteoporosis and periodontal disease (OM1 through OM5). The frequency of periodontal disease and diagnostic values were calculated taking OM5 as the gold standard and the main association measurement for all criteria using odds ratios. RESULTS: The frequency of periodontal disease varied from 24.5% to 98.6% depending on the OM used. OM4 and OM3 presented the highest specificity (98.9% and 94.5%, respectively), whereas OM2 and OM1 presented the highest sensitivity (100% and 77.1%, respectively). The association measurements with adjustments for age and smoking varied significantly according to the OM over a range from 1.87 to 3.75, and there were also variations in the statistical significance of the associations found. CONCLUSIONS: The results of this study emphasize that the frequency of periodontal disease may be influenced by different OMs and indicated variations outside of the association between osteoporosis and periodontal disease.

Therefore, there is a need for prior selection of a precise measurement of periodontal disease in investigations on this topic.

132. Perez, D., D. Leibold, et al. (2010). "Vascular lesions of the maxillofacial region: a case report and review of the literature." *Tex Dent J* 127(10): 1045-1057.

There is frequently lack of understanding and apprehension among dental practitioners treating patients with vascular lesions of the oral and maxillofacial region. Arteriovenous malformations are rare lesions which can easily be misdiagnosed yet produce the very dramatic clinical presentation of severe life threatening oral bleeding. Much of this apprehension likely stems from a lack of understanding of these anomalies, including lesion behavior/ characteristics, clinical work-up, and treatment paradigms. A comprehensive, in depth review of the full spectrum of vascular lesions of the maxillofacial complex is beyond the scope of this review. The purpose of this article is to provide a comprehensive review of the diagnosis, treatment, and risks associated with these complex vascular anomalies and provide a case report. In 1982, Mulliken and Glowacki published a landmark article proposing characterization of vascular defects based on biologic and pathologic differences. Their work differentiated between two major categories of vascular lesions: hemangiomas and vascular malformations. Different categories, names, and treatment options have been advocated over the years with multiple outcomes. They can occur in various areas throughout the body, with 60 percent being located in the head and neck. The true mechanism of pathogenesis of vascular anomalies is still unclear. Embolization and surgery is often combined for extended cases to improve their facial contour and oral function. We present the case of a 29-year-old female that is 36 weeks pregnant and presented to University Hospital after having significant bleeding from her oral cavity. She was found to have a gingival lesion associated with a radiolucency in the right posterior mandible. During her stay she had an episode of acute bleeding that required an emergent exploration, embolization, and resection secondary to an Arteriovenous Malformation associated with the Inferior Alveolar Artery. We will discuss the presentation, treatment provided, and outcome of this patient. We will also cover the diverse group of congenital vascular malformations, and their pathologic, clinical, and radiologic diagnosis and management.

133. Pronych, G. J., E. J. Brown, et al. (2010). "Oral health coordinators in long-term care--a pilot study." *Spec Care Dentist* 30(2): 59-65.

This pilot project tested a curricular and systems approach to improving the oral health care of nursing home residents in three facilities in New Hampshire. An oral health coordinator (OHC) was appointed in each facility to act as a liaison between nursing and dental staff, provide resources for nursing assistants, and ensure staff delivery of residents' daily oral care. During the study, residents' oral health status was assessed at four intervals and ongoing training was provided to nursing staff. At the conclusion of the pilot study, an evaluation of the results indicated an improvement in oral hygiene in all facilities. The role of the OHC showed promise when that person was active in holding nursing staff accountable for daily oral care of the residents.

134. Rahim-Williams, B., S. Tomar, et al. (2010). "Influences of adult-onset diabetes on orofacial pain and related health behaviors." *J Public Health Dent* 70(2): 85-92.

OBJECTIVES: This study tested the hypothesis that persons with orofacial pain and comorbid adult-onset diabetes will experience greater functional and emotional impact than persons experiencing orofacial pain without diabetes. **METHODS:** A random-digit dialing sampling procedure was used for a disproportionate probability sample of 10,341 persons who were screened for orofacial pain in the past 6 months and diabetes. This paper reports on 1,767 individuals reporting toothache pain and 877 reporting painful oral sores. A structured telephone interview assessed diabetes history, orofacial pain characteristics, oral health-care behaviors, and emotional and functional impacts of orofacial pain. **RESULTS:** The 6-month point prevalence was 16.8 percent for toothache pain, 8.9 percent for painful oral sores, and 9.6 percent for adult-onset diabetes. Individuals with comorbid orofacial pain and adult-onset diabetes differed significantly on many of the pain characteristics and health behaviors compared with nondiabetic sufferers of orofacial pain. Diabetics were more likely than nondiabetics to have pain every day, to suffer negative emotions associated with pain, to experience disruption of daily activities and sleep, to make an emergency room visit for orofacial pain, and to report the current need for a pain-related health-care visit. **CONCLUSIONS:** Although diabetes is well known to be associated with neuropathic pain, these results indicate that the experience of nociceptive pain is exacerbated by diabetes. Findings have significance for the subjective experience of oral pain, dental-care outcomes, and health-related quality of life associated with oral-health outcomes among individuals with diabetes.

135. Ransford, N. J., M. C. Manley, et al. (2010). "Intranasal/intravenous sedation for the dental care of adults with severe disabilities: a multicentre prospective audit." *Br Dent J* 208(12): 565-569.

OBJECTIVE: This study was designed to provide an evaluation of the combined intranasal/intravenous midazolam sedation technique. It involved adults with severe disabilities which prevented them from being able to co-operate with dental treatment and intravenous cannulation for sedation. **METHOD:** Following a previous retrospective audit, additional treatment centres were enrolled and a standardised form used to collect prospective data about the effectiveness of the technique in facilitating cannulation, dental examination and treatment. Data was also collected on safety and patient acceptability. **RESULTS:** In a total of 316 sedation episodes in primary and secondary care settings, cannulation was achieved in 96.2% (304). Dental examination and treatment was able to be carried out without major interference from the patient in 78.8% (241) episodes. Adverse sedation events occurred in 6.0% (19), the most frequent being desaturation which was easily managed. There were no incidents with serious sequelae. Favourable acceptability ratings were given by carers regarding advantages of ease of administration and speed of onset of the intranasal dose, plus reduction in the stress associated with cannulation and treatment. **CONCLUSIONS:** This study provides further evidence to support the effectiveness, safety and acceptability of this technique. The authors suggest this provides sufficient basis to justify its use by suitably trained dental practitioners in primary care as part of the spectrum of anxiety and behaviour management for this group.

136. Renton, T. (2010). "Prevention of iatrogenic inferior alveolar nerve injuries in relation to dental procedures." *Dent Update* 37(6): 350-352, 354-356, 358-360 passim.

This article aims to review current hypotheses on the aetiology and prevention of inferior alveolar nerve (IAN) injuries in relation to dental procedures. The inferior alveolar nerve can be damaged during many dental procedures, including administration of local anaesthetic, implant bed preparation and placement, endodontics, third molar surgery and other surgical interventions. Damage to sensory nerves can result in anaesthesia, paraesthesia, pain, or a combination of the three. Pain is common in inferior alveolar nerve injuries, resulting in significant functional problems. The significant disability associated with these nerve injuries may also result in increasing numbers of medico-legal claims. Many of these iatrogenic nerve injuries can be avoided with careful patient assessment and planning. Furthermore, if the injury occurs there are emerging strategies that may facilitate recovery. The emphasis of this review is on how we may prevent these injuries and facilitate resolution in the early post surgical phase. **CLINICAL RELEVANCE:** It is imperative that dental practitioners are aware of the significant disability associated with iatrogenic nerve injuries and have an awareness of risk factors relating to inferior alveolar nerve injury. By understanding the risk factors and modification of intervention as a result, more of these injuries will be prevented.

137. Renton, T., D. Adey-Viscuso, et al. (2010). "Trigeminal nerve injuries in relation to the local anaesthesia in mandibular injections." *Br Dent J* 209(9): E15.

OBJECTIVE: This study reports the signs and symptoms that are the features of trigeminal nerve injuries caused by local anaesthesia (LA). **METHODS:** Thirty-three patients with nerve injury following LA were assessed. All data were analysed using the SPSS statistical programme and Microsoft Excel. **RESULTS:** Lingual nerve injury (LNI; n = 16) and inferior alveolar nerve injury (IANI; n = 17) patients were studied. LNI were more likely to be permanent. Neuropathy was demonstrable in all patients with varying degrees of paraesthesia, dysaesthesia (in the form of burning pain) allodynia and hyperalgesia. All injuries were unilateral. A significantly greater proportion of LNI patients (75%) had received multiple injections, in comparison to IANI patients (41%) ($p < 0.05$). Fifty percent of patients with LNI reported pain on injection. The presenting signs and symptoms of both LNI and IANI included pain. These symptoms of neuropathy were constant in 88% of the IANI group and in 44% of LNI patients. Functional difficulties were different between the LNI and IANI groups, a key difference being the presence of severely altered taste perception in nine patients with LA-induced LNI. **CONCLUSIONS:** Chronic pain is often a symptom after local anaesthetic-induced nerve injury. Patients in the study population with lingual nerve injury were significantly more likely to have received multiple injections compared to those with IANI.

138. Renvert, S., O. Ohlsson, et al. (2010). "Periodontitis: a future risk of acute coronary syndrome? A follow-up study over 3 years." *J Periodontol* 81(7): 992-1000.

BACKGROUND: Periodontitis has been associated with cardiovascular disease. We assess if the recurrence of acute coronary syndrome (ACS) could be predicted by preceding medical and periodontal conditions. **METHODS:** A total of 165 consecutive subjects with ACS and 159 medically healthy, matched control subjects were examined and followed for 3 years. Periodontitis was defined by alveolar bone loss. Subgingival microbial samples were studied by the checkerboard DNA-DNA hybridization method. **RESULTS:** The recurrence of ACS was found in 66 of 165 (40.0%) subjects, and a first ACS event was found in seven of 159 (4.4%) subjects among baseline control subjects. Subjects who later had a second ACS event were older ($P < 0.001$). Significantly higher serum levels of high-density lipoprotein (P

<0.05), creatinine (P <0.01), and white blood cell (WBC) counts (P <0.001) were found in subjects with future ACS. Periodontitis was associated with a first event of ACS (crude odds ratio [OR]: 10.3:1; 95% confidence interval [CI]: 6.1 to 17.4; P <0.001) and the recurrence of ACS (crude OR: 3.6:1; 95% CI: 2.0 to 6.6; P <0.001). General linear modeling multivariate analysis, controlling for age and the prediction of a future ACS event, identified that WBC counts (F = 20.6; P <0.001), periodontitis (F = 17.6; P <0.001), and serum creatinine counts (F = 4.5; P <0.05) were explanatory of a future ACS event. CONCLUSIONS: The results of this study indicate that recurrent ACS events are predicted by serum WBC counts, serum creatinine levels, and a diagnosis of periodontitis. Significantly higher counts of putative pathogens are found in subjects with ACS, but these counts do not predict future ACS events.

139. Roedig, J. J., J. Shah, et al. (2010). "Interference of cardiac pacemaker and implantable cardioverter-defibrillator activity during electronic dental device use." *J Am Dent Assoc* 141(5): 521-526.

BACKGROUND: The authors conducted a study to determine if electromagnetic interference of cardiac pacemaker and implantable cardioverter-defibrillator (ICD) activity occurs during the operation of electronic dental devices. METHODS: The authors tested nine electronic dental devices in vitro to assess their ability to interfere with the function of two pacemakers and two ICDs as determined by electrocardiographic telemetry. RESULTS: The pacing activity of both pacemakers and the dual-chamber ICD were inhibited during operation of the battery-operated composite curing light at between 2 and 10 centimeters from the generator or leads. The use of the ultrasonic scaler interfered with the pacing activity of the dual-chamber pacemaker at between 17 and 23 cm from the generator or leads, the single-chamber pacemaker at 15 cm from the generator or leads and both ICDs at 7 cm from the leads. The operation of the ultrasonic cleaning system interfered with the activity of the dual-chamber pacemaker at between 15 and 23 cm from the generator or leads, and of the single-chamber pacemaker at 12 cm. Operation of the electric toothbrush, electrosurgical unit, electric pulp tester, high- and low-speed handpieces, and an amalgamator did not alter pacing function. CONCLUSION: Select electronic dental devices interfere with pacemakers' and ICDs' sensing and pacing activity in vitro. CLINICAL IMPLICATIONS: Use of the ultrasonic scaler, ultrasonic cleaning system and battery-operated composite curing light may produce deleterious effects in patients who have pacemakers or ICDs.

140. Rogers, S., N. Rahman, et al. (2010). "Guidelines for treating patients taking bisphosphonates prior to dental extractions." *J Ir Dent Assoc* 56(1): 40.

141. Rosenberg, M. (2010). "Preparing for medical emergencies: the essential drugs and equipment for the dental office." *J Am Dent Assoc* 141 Suppl 1: 14S-19S.

BACKGROUND: Acute medical emergencies can and do occur in the dental office. Preparing for them begins with a team approach by the dentist and staff members who have up-to-date certification in basic life support for health care providers. The ability to react immediately to the emergency at hand, including telephoning for help and having the equipment and drugs needed to respond to an emergency, can mean the difference between successful management and failure. Overview. The purpose of this article is to provide a vision of the training, basic and critical drugs, and equipment necessary for staff members in general dental offices to manage the most common and anticipated medical emergencies. CONCLUSIONS AND CLINICAL IMPLICATIONS: Completion of annual continuing education courses and office medical emergency drills ensure a rapid response to emergency situations. It is the combination of a knowledgeable and skilled dental team with the equipment for basic airway rescue and oxygenation, monitoring equipment, an automated external defibrillator and a basic drug emergency kit that make the dental office a safer environment for patients and enhance dental professionals' capability to render competent and timely aid.

142. Rozier, R. G., S. Adair, et al. (2010). "Evidence-based clinical recommendations on the prescription of dietary fluoride supplements for caries prevention: a report of the American Dental Association Council on Scientific Affairs." *J Am Dent Assoc* 141(12): 1480-1489.

BACKGROUND: This article presents evidence-based clinical recommendations for the prescription of dietary fluoride supplements. The recommendations were developed by an expert panel convened by the American Dental Association (ADA) Council on Scientific Affairs (CSA). The panel addressed the following questions: when and for whom should fluoride supplements be prescribed, and what should be the recommended dosage schedule for dietary fluoride supplements? TYPES OF STUDIES REVIEWED: A panel of experts convened by the ADA CSA, in collaboration with staff of the ADA Center for Evidence-based Dentistry, conducted a MEDLINE search to identify publications that addressed the research questions: systematic reviews as well as clinical studies published since the systematic reviews were conducted (June 1, 2006). RESULTS: The panel concluded that dietary fluoride supplements should be prescribed only for children who are at high risk of developing caries and whose primary source of drinking water is deficient in

fluoride. CLINICAL IMPLICATIONS: These recommendations are a resource for practitioners to consider in the clinical decision-making process. As part of the evidence-based approach to care, these clinical recommendations should be integrated with the practitioner's professional judgment and the patient's needs and preferences. Providers should carefully monitor the patient's adherence to the fluoride dosing schedule to maximize the potential therapeutic benefit.

143. Sagar, S., N. Kumar, et al. (2010). "A rare case of life-threatening penetrating oropharyngeal trauma caused by toothbrush in a child." *J Indian Soc Pedod Prev Dent* 28(2): 134-136.

We present a case of 10 year-old boy with oropharyngeal injury caused by a toothbrush which penetrated the parapharyngeal space. Initial examination revealed broken end of the toothbrush in oral cavity with the head of the toothbrush having bristles, beyond the soft palate. Tongue and palate were lacerated and there were blood and oral secretions in the oral cavity. Patient was having bradycardia. Computed tomography (CT) scan showed the toothbrush head near the carotid artery, the carotid being laterally displaced. The foreign body was surgically removed without any intraoperative or postoperative complications.

144. Sancho, F. M. and C. N. Ruiz (2010). "Risk of suicide amongst dentists: myth or reality?" *Int Dent J* 60(6): 411-418.

OBJECTIVES: To analyse the scientific weight of the studies about reports of suicide rates in dentistry and decide the possible stressors caused by dental clinical activity, their consequences and their treatment. DISCUSSION: The previous literature treats the high suicide rate associated with the dental profession in different ways: myth for some, important statistical data which needs further research for others. The possible errors repeated in the literature as a result of not introducing certain indispensable variables are analysed and a report given of the main stressors linked to the profession. The results showed that the absence of treatment of the disorders arising from these stressors by qualified professionals along with the lack of preventative measures developed by universities and clinicians to be one of the main problems. CONCLUSIONS: In the literature we find systematically a suicide rate among dentists higher than those of other occupations. These studies lack the correct scientific weight and new studies are required that introduce the demographic variables, the psychiatric morbidity previous to the development of the profession, the opportunity factor, the stressors not related to work and the relative emphasis to these are necessary to for the profession to decrease the risk of suicide.

145. Santos, M. T., M. Biancardi, et al. (2010). "Caries prevalence in patients with cerebral palsy and the burden of caring for them." *Spec Care Dentist* 30(5): 206-210.

The aim of this study was to investigate the correlation between caries prevalence in individuals with cerebral palsy (CPG) and the burden on their caregivers (CGCP) compared to nondisabled individuals (CG) and their caregivers (CGCG). In a cross-sectional assessment, 65 subjects with cerebral palsy were evaluated for their caries prevalence. The CGCP answered the Caregiver Burden Scale (CBS) questionnaire. Using the same methodology, 58 CG were evaluated and CGCG replied to the questionnaire. The CGCP had statistically significant higher scores on general strain, isolation, disappointment, environment, and total scores using the CBS questionnaire. The CPG had significantly higher values using the Decayed, Missed and Filled (DMF) index than the CG. Values for the CBS domains in general strain and disappointment and DMF index were found to have a statistically significant correlation. Taking care of an individual with CP is a potential source of continual burden for caregivers, and there is a positive correlation between caries prevalence in individuals with CP and the burden on their caregivers.

146. Sato, K., T. Shirakawa, et al. (2010). "Effects of oral care in Down syndrome children with obstructive sleep apnea." *J Oral Sci* 52(1): 145-147.

Down syndrome (DS) children with sleep apnea often present with oral breathing associated with nasal obstruction. This causes the oral cavity and pharynx to become dry. We describe the treatment of three DS children with sleep apnea who were treated using products for oral dryness. Snoring disappeared after treatment in two of the children and apnea disappeared in all three. The symptoms of a reddened oral mucosa and coated tongue disappeared in all three DS children. Saliva pH testing demonstrated that the pH value increased in all of the children after treatment. These results indicate that oral care can improve the oral hygiene status of DS children, and that proper oral care can help prevent oral mucosal dryness and thereby reduce sleep apnea symptoms.

147. Seale, N. S. (2010). "Indirect pulp therapy: an alternative to pulpotomy in primary teeth." *Tex Dent J* 127(11): 1175-1183.

Preservation of the primary teeth until their normal exfoliation is essential for normal oral function and facial growth of the child. To that end, treatment of primary teeth with large carious lesions approximating the pulp should be aimed at preserving the tooth. Currently, the pulpotomy is the most frequently used pulp treatment for cariously involved primary teeth. The purpose of this manuscript is to describe the use of an alternative to the pulpotomy, indirect pulp therapy (IPT), for the treatment of vital, primary teeth with carious involvement approaching the pulp. Accurate diagnosis of the vitality status of the pulp is critical to the success of IPT and involves careful radiographic and clinical assessment of the teeth to be sure they are healthy or at worst, reversibly inflamed. The indications for IPT are the same as for pulpotomy. The technique involves one appointment, requires that some carious dentin be left to avoid pulp exposure and requires the placement of a biologically sealing base and sealing final restoration. Teeth treated with IPT have success rates at least as good as those treated with pulpotomies, and IPT offers an acceptable alternative to pulpotomy as a treatment for vital, asymptomatic, cariously involved primary teeth.

148. Shetty, V., L. J. Mooney, et al. (2010). "The relationship between methamphetamine use and increased dental disease." *J Am Dent Assoc* 141(3): 307-318.

BACKGROUND: Methamphetamine (MA) use has been linked anecdotally to rampant dental disease. The authors sought to determine the relative prevalence of dental comorbidities in MA users, verify whether MA users have more quantifiable dental disease and report having more dental problems than nonusers and establish the influence of mode of MA administration on oral health outcomes. **METHODS:** Participating physicians provided comprehensive medical and oral assessments for adults dependent on MA (n=301). Trained interviewers collected patients' self-reports regarding oral health and substance-use behaviors. The authors used propensity score matching to create a matched comparison group of nonusers from participants in the the Third National Health and Nutrition Examination Survey (NHANES III). **RESULTS:** Dental or oral disease was one of the most prevalent (41.3 percent) medical comorbidities in MA users who otherwise were generally healthy. On average, MA users had significantly more missing teeth than did matched NHANES III control participants (4.58 versus 1.96, $P < .001$) and were more likely to report having oral health problems ($P < .001$). Significant subsets of MA users expressed concerns with their dental appearance (28.6 percent), problems with broken or loose teeth (23.3 percent) and tooth grinding (bruxism) or erosion (22.3 percent). The intravenous use of MA was significantly more likely to be associated with missing teeth than was smoking MA (odds ratio=2.47; 95 percent confidence interval=1.3-4.8). **CONCLUSIONS:** Overt dental disease is one of the key distinguishing comorbidities in MA users. MA users have demonstrably higher rates of dental disease and report long-term unmet oral health needs. Contrary to common perception, users who smoke or inhale MA have lower rates of dental disease than do those who inject the drug. Many MA users are concerned with the cosmetic aspects of their dental disease, and these concerns could be used as behavioral triggers for targeted interventions. **CLINICAL IMPLICATIONS:** Dental disease may provide a temporally stable MA-specific medical marker with discriminant utility in identifying MA users. Dentists can play a crucial role in the early detection of MA use and participate in the collaborative care of MA users.

149. Shimazaki, Y., Y. Egami, et al. (2010). "Relationship between obesity and physical fitness and periodontitis." *J Periodontol* 81(8): 1124-1131.

BACKGROUND: Obesity and exercise are important elements associated with lifestyle-related diseases, and studies suggested that these factors may also be related to periodontitis. This study investigates the relationship between obesity and physical fitness and periodontitis. **METHODS:** One thousand, one hundred and sixty Japanese subjects, aged 20 to 77 years, who participated in health examinations at Fukuoka Health Promotion Center were analyzed. Periodontal conditions were evaluated using the Community Periodontal Index (CPI), and subjects with $> \text{ or } = 3$ sextants of CPI code 3 or 4 were defined as having severe periodontitis. We used the body mass index (BMI) and percentage of body fat as indicators of obesity and estimated the maximal oxygen consumption ($\text{VO}_{2\text{max}}$) during exercise as an indicator of physical fitness. We divided these variables into quintiles. We examined the single effect and interactions of the obesity index and $\text{VO}_{2\text{max}}$ on severe periodontitis. **RESULTS:** The lowest quintile in BMI and the highest quintile in $\text{VO}_{2\text{max}}$ were inversely associated with severe periodontitis, singly, in multivariate logistic regression analyses. Subjects with the combined lowest quintile in BMI and the highest quintile in $\text{VO}_{2\text{max}}$ had a significantly lower risk of severe periodontitis compared to subjects with other combined quintiles in BMI and in $\text{VO}_{2\text{max}}$ (odds ratio: 0.17; 95% confidence interval: 0.05 to 0.55). **CONCLUSION:** This study suggests that obesity and physical fitness may have some interactive effect on periodontal health status.

150. Siddiqi, A., J. A. Morkel, et al. (2010). "Antibiotic prophylaxis in third molar surgery: A randomized double-blind placebo-controlled clinical trial using split-mouth technique." *Int J Oral Maxillofac Surg* 39(2): 107-114.

The use of prophylactic antibiotics to reduce postoperative complications in third molar surgery remains controversial. The study was a prospective, randomized, double blind, placebo-controlled clinical trial. 100 patients were randomly assigned to two groups. Each patient acted as their own control using the split-mouth technique. Two unilateral impacted third molars were removed under antibiotic cover and the other two were removed without antibiotic cover. The first group received antibiotics on the first surgical visit. On the second surgical visit (after 3 weeks), placebo capsules were given or vice versa. The second group received antibiotics with continued therapy for 2 days on the first surgical visit and on the second surgical visit (after 3 weeks) placebo capsules were given or vice versa. Pain, swelling, infection, trismus and temperature were recorded on days 3, 7 and 14 after surgery. Of 380 impactions, 6 sockets (2%) became infected. There was no statistically significant difference in the infection rate, pain, swelling, trismus, and temperature between the two groups ($p > 0.05$). Results of the study showed that prophylactic antibiotics did not have a statistically significant effect on postoperative infections in third molar surgery and should not be routinely administered when third molars are removed in non-immunocompromised patients.

151. Smyth, J. and J. Marley (2010). "An unusual delayed complication of inferior alveolar nerve block." *Br J Oral Maxillofac Surg* 48(1): 51-52.

Systemic and localised complications after administration of local anaesthetic for dental procedures are well recognised. We present two cases of patients with trismus and sensory deficit that arose during resolution of trismus as a delayed complication of inferior alveolar nerve block.

152. Sokolowski, C. J., J. A. Giovannitti, Jr., et al. (2010). "Needle phobia: etiology, adverse consequences, and patient management." *Dent Clin North Am* 54(4): 731-744.

Needle phobia has profound health, dental, societal, and legal implications, and severe psychological, social, and physiologic consequences. There is genetic evidence for the physiologic response to needle puncture, and a significant familial psychological component, showing evidence of inheritance. Needle phobia is also a learned behavior. The dental practitioner must recognize patients with needle phobia before the administration of local anesthetics to identify patients who are potentially reactive and to prevent untoward sequelae. Needle phobia is highly associated with avoidance behavior, and the dentist must exhibit compassion and respect. To avoid bradycardia, hypotension, unconsciousness, convulsions, and possibly asystole, oral premedication with benzodiazepines or other anti-anxiety agents must be considered for patients who are needle phobic. Management of needle phobia-induced syncope includes perioperative monitoring, oxygen administration, positioning, atropine, and vasopressors.

153. Somma, F., N. M. Grande, et al. (2010). "Conservative approach to dental extractions in patients on anticoagulant therapy: A clinical study." *Gen Dent* 58(1): e30-35.

This clinical study reviewed dental surgical extractions that were performed on 532 patients diagnosed at risk of thromboembolism without interrupting their anticoagulant therapy. The results confirmed that anticoagulant therapy can be modified successfully and does not need to be interrupted, which can carry significant risks.

154. Speca, S. J., S. G. Boynes, et al. (2010). "Allergic reactions to local anesthetic formulations." *Dent Clin North Am* 54(4): 655-664.

True allergic reactions to local anesthetics are rare adverse reactions. At the most, they represent less than 1% of all adverse local anesthetic reactions. When true allergic reactions have been confirmed, the reactions are most commonly the type I anaphylactic and type IV delayed hypersensitivity responses. The type I immediate hypersensitivity reactions are the most severe and may be life-threatening. In the event a potential allergic reaction occurs in a dental office, the dentist needs to properly evaluate the events leading up to the reaction and provide a differential diagnosis. A referral should be given to any patient when an allergic reaction cannot be ruled out as an intravascular injection, toxic overdose, psychogenic reaction, or an idiosyncratic event.

155. Sundstrom, A., J. Bergdahl, et al. (2010). "Cognitive status in persons with amalgam-related complaints." *J Dent Res* 89(11): 1236-1240.

Self-reported cognitive symptoms are frequent in persons with amalgam-related complaints, but few studies have focused on their cognitive function. The aim was to examine a symptom profile and whether participants with amalgam-related complaints have cognitive deficits in comparison with control individuals. We drew 342 participants with amalgam-related complaints and 342 one-to-one matched control individuals from a longitudinal population-

based study. For 81 of the participants with amalgam-related complaints and controls, data were available approximately five years before the onset of complaints, making a longitudinal analysis possible. All participants were assessed by a self-reported health questionnaire and a comprehensive cognitive test battery. The participants with amalgam-related complaints reported more symptoms, mainly musculoskeletal and neuropsychological, compared with control individuals ($p < 0.001$). The results revealed no significant difference between the amalgam and control group, either cross-sectionally or longitudinally, for any of the cognitive tests. These results suggest that cognitive decline is not associated with amalgam-related complaints.

156. Syrjala, A. M., P. Ylostalo, et al. (2010). "Number of teeth and selected cardiovascular risk factors among elderly people." *Gerodontology* 27(3): 189-192.

OBJECTIVE: To produce evidence on an association between the number of teeth and selected cardiovascular risk factors among an elderly population. **MATERIALS AND METHODS:** The study population comprised of 523 community-living elderly people who participated in the population-based Kuopio 75+ study. The data for each subject were collected using a structured clinical health examination, an interview and laboratory tests. Linear regression models were used to estimate adjusted mean values and confidence limits. **RESULTS:** Edentulous persons and persons with a small number of teeth had lower serum HDL cholesterol and higher triglyceride, leucocyte and blood glucose levels and a higher body mass index (BMI) compared with subjects to a large number of teeth. **CONCLUSION:** The study showed that, in the Finnish home-dwelling population aged 75 years or older, those with a large number of teeth were less likely to have cardiovascular risk factors such as a low serum HDL cholesterol level, a high triglyceride level and a high BMI than did subjects with a small number of teeth or who were edentulous.

157. Szumita, R. P., P. M. Szumita, et al. (2010). "Understanding and managing patients with chronic pain." *Oral Maxillofac Surg Clin North Am* 22(4): 481-494.

The specialty of oral and maxillofacial surgery has had at its core the foundations of anesthesia and pain and anxiety control. This article attempts to refamiliarize the reader with clinical pearls helpful in the management of patients with chronic pain conditions. The authors also hope to highlight the interplay of chronic pain and psychology as it relates to the oral and maxillofacial surgery patient. To that end, the article outlines and reviews the neurophysiology of pain, the definitions of pain, conditions encountered by the oral and maxillofacial surgeon that produce chronic pain, the psychological impact and comorbidities associated with patients experiencing chronic pain conditions, and concepts of multimodal treatment for patients experiencing chronic pain conditions.

158. Talesh, K. T., M. H. Motamedi, et al. (2011). "Comparison of ondansetron and metoclopramide antiemetic prophylaxis in maxillofacial surgery patients." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 111(3): 275-277.

PURPOSE: The purpose of this study was to compare the efficacy of ondansetron and metoclopramide, administered for the prophylaxis of vomiting in patients undergoing oral and maxillofacial surgery under general anesthesia. **METHODS:** One hundred patients undergoing mandibular osteotomy surgery were studied. Patients were allocated randomly to receive 1 of 2 treatment regimens: 0.15 mg/kg ondansetron or 0.5 mg/kg metoclopramide intravenously 30 minutes before extubation. All were adults and were treated by one surgeon and all operations were the same and lasted 2.5 to 3.0 hours. The patients were assessed at 3 time periods: 0 to 3 hours, 3 to 12 hours, and 12 to 24 hours postoperatively for emesis. **RESULT:** The data from this study showed that during the first 24-hour postoperative period, patients receiving ondansetron following general anesthesia had an 11% (11 patients) incidence of emesis compared with 28% (22 patients) in the group that received metoclopramide. **CONCLUSION:** In this study, ondansetron (0.1 mg/kg) was twice as effective in preventing postoperative vomiting compared with metoclopramide.

159. Tan, H. P., E. C. Lo, et al. (2010). "A randomized trial on root caries prevention in elders." *J Dent Res* 89(10): 1086-1090.

Root caries is common in institutionalized elders, and effective prevention methods are needed. This clinical trial compared the effectiveness of four methods in preventing new root caries. From 21 residential homes, 306 generally healthy elders having at least 5 teeth with exposed sound root surfaces were randomly allocated into one of four groups: (1) individualized oral hygiene instruction (OHI); (2) OHI and applications of 1% chlorhexidine varnish every 3 months; (3) OHI and applications of 5% sodium fluoride varnish every 3 months; and (4) OHI and annual applications of 38% silver diamine fluoride (SDF) solution. Two-thirds (203/306) of the elders were followed for 3 years. Mean numbers of new root caries surfaces in the four groups were 2.5, 1.1, 0.9, and 0.7, respectively (ANOVA, $p < 0.001$). SDF solution, sodium fluoride varnish, and chlorhexidine varnish were more effective in preventing new root caries than giving OHI alone.

160.Thakare, K. S., V. Deo, et al. (2010). "Evaluation of the C-reactive protein serum levels in periodontitis patients with or without atherosclerosis." *Indian J Dent Res* 21(3): 326-329.

BACKGROUND: Several studies suggested an association between periodontal disease and cardiovascular disease (CVD). C- reactive protein is elevated in periodontitis patients and has been found to be a predictor of increased risk for cardiovascular disease. Since, CRP is known to play a role in pathogenesis of atherosclerosis, the present study was undertaken to evaluate the serum levels of CRP in periodontitis patients with or without atherosclerosis. MATERIALS AND METHODS: A total of 45 patients, 15 chronic periodontitis patients with atherosclerosis (Group A), 15 chronic periodontitis patients with no history of any systemic disease (Group B), and 15 clinically healthy individuals with no history of periodontal or systemic disease (Group C) within age range of 30 to 55 years were selected for the study. PI, PBI, PPD, CAL and radiographic marginal alveolar bone level were assessed in all the three groups. CRP levels were assessed with 'Turbi-latex' kit using turbidimetric analysis. RESULTS: The mean CAL recorded was 4.9mm in group A, 4.6mm in group B and 1.9 mm in group C. The mean radiographic marginal bone level was 45 to 50% in group A, 45 to 50% in group B and 90 to 95% in group C. Mean serum C-reactive protein level was significantly higher in group A (8.9 mg/l), as compared to group B (4.9 mg/l) as well as group C (0.9 mg/l). CONCLUSION: Within the limits of this study it was concluded that periodontitis may add to the inflammatory burden of the individual and may result in increased risk of atherosclerosis based on serum C-reactive protein concentrations.

161.Tiigimae-Saar, J., E. Leibur, et al. (2010). "The effect of prednisolone on reduction of complaints after impacted third molar removal." *Stomatologija* 12(1): 17-22.

Nonsteroidal anti-inflammatory drugs (NSAIDs) and steroids are able to effectively reduce postoperative sequels after impacted third molar removal. The purpose of this study was to evaluate whether a single dose of prednisolone, taken orally immediately after the operation, would increase the effects of etorikoxib (Arcoxia(R)) NSAID in preventing trismus and swelling after surgical removal of impacted third molars. PATIENTS AND METHODS: This prospective study was conducted in a half-year period on 78 patients who had undergone third molar surgery under local anaesthesia. They were divided into two groups: prednisolone group (38 patients) and control (40 patients). In the prednisolone group 30 mg prednisolone was given to each patient immediately after surgery. Both groups had received Etorikoxib 120 mg 30 minutes before operation. They had to complete a questionnaire evaluating postoperative symptoms. Postoperative pain, facial swelling and trismus were evaluated. RESULTS: Postoperative administration of 30 mg prednisolone to the patients relieved trismus, swelling and pain more than non-administration of prednisolone in the control group. There was significantly less swelling on the first four postoperative days in the prednisolone group compared to control ($p<0.05$). The values of the maximal interincisal opening (MIO) and visual analogue scale (VAS) were higher for the prednisolone group than for the control group ($p<0.05$). No clinically apparent infection, disturbance of wound healing, or other corticosteroid-related complications were noted. CONCLUSION: It was found that a combination of a single dose of prednisolone and Etorikoxib is well-suited for treatment of postoperative pain, trismus, and swelling after third molar surgery and should be used to diminish postoperative swelling of soft tissues.

162.Torres-Lagares, D., J. L. Gutierrez-Perez, et al. (2010). "Randomized, double-blind study of effectiveness of intra-alveolar application of chlorhexidine gel in reducing incidence of alveolar osteitis and bleeding complications in mandibular third molar surgery in patients with bleeding disorders." *J Oral Maxillofac Surg* 68(6): 1322-1326.

PURPOSE: Chlorhexidine (CHX) is an antimicrobial agent used in the prevention of tooth decay, periodontal disease, and postextraction alveolar osteitis (AO). Recently, a bioadhesive gel to deliver the active substance, CHX, was introduced. The intra-alveolar placement of the bioadhesive gel allows a more direct and prolonged therapeutic effect of CHX, which is useful in the prevention of AO after extraction of impacted third molars. The intra-alveolar application of the bioadhesive CHX gel in patients with bleeding disorders may increase the risk of postoperative bleeding complications. Inversely, bleeding disorders might influence the efficacy of CHX for AO prevention. The purpose of the present study was to evaluate the effectiveness of the bioadhesive 0.2% CHX gel in reducing the incidence of impacted third molar postextraction AO in patients with bleeding disorders. MATERIALS AND METHODS: We performed a double-blind, randomized, parallel-group study of 38 patients with bleeding disorders. The experimental group ($n = 14$) was treated with bioadhesive 0.2% CHX gel applied intraoperatively once after surgical removal of the third molar. The control group ($n = 24$) was treated in an identical fashion with placebo gel. RESULTS: We observed a 57.15% reduction in the incidence of AO in the experimental group. The control group had a 17% incidence of AO and the experimental group had a 7% incidence of AO ($P = .402$). Bleeding complications occurred in 21% of the experimental group compared with 29% of the control group ($P = .601$). CONCLUSIONS: As described in previous studies, the single intra-alveolar application of the bioadhesive 0.2% CHX gel in an intraoperative fashion seems to reduce the incidence of

After removal of impacted third molars in patients with bleeding disorders. On the basis of the reported percentage of bleeding complications, the routine use of postoperative local hemostatic measures is recommended.

163. Trapp, L. and J. Will (2010). "Acquired methemoglobinemia revisited." *Dent Clin North Am* 54(4): 665-675.

Dentistry has two medications in its pain management armamentarium that may cause the potentially life-threatening disorder methemoglobinemia. The first medications are the topical local anesthetics benzocaine and prilocaine. The second medication is the injectable local anesthetic prilocaine. Acquired methemoglobinemia remains a source of morbidity and mortality in dental and medical patients despite the fact that it is better understood now than it was even a decade ago. It is in the interest of all dental patients that their treating dentists review this disorder. The safety of dental patients mandates professional awareness.

164. Turkistani, J. M., N. Farsi, et al. (2010). "Caries experience in asthmatic children: a review of literature." *J Clin Pediatr Dent* 35(1): 1-8.

AIM: This review explores the discriminating factors involved for increased caries experience in asthmatic children. BACKGROUND: Dental caries is the single most common chronic disease of childhood. Children with chronic medical conditions are considered high caries risk. Asthma is one of the most common chronic medical conditions in childhood. MATERIAL: 27 studies examined the asthma-caries causative relationship. Most of them were cross sectional studies; only 5 longitudinal studies were reported. In the literature, there is a lack of consensus regarding the relationship between dental caries and asthma in a child population. CONCLUSION: Despite the fact that some relatively recent studies have provided little evidence for an asthma-caries causative relationship, the majority and the most recent reports have concluded that the individualistic nature of asthmatic condition, through either its disease status or its pharmacotherapy (different combinations of medicaments), or attempts to alleviate the condition's physiologic sequelae, carries several factors for an increased caries risk.

165. Vazquez Bouso, O., G. Forteza Gonzalez, et al. (2010). "Neurogenic temporomandibular joint dislocation treated with botulinum toxin: report of 4 cases." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 109(3): e33-37.

Many patients suffer recurrent episodes of temporomandibular joint (TMJ) dislocation due to an excess of muscle contraction or spasticity in the depressor muscles of the jaw. The manual repositioning using the Nelaton maneuver is the first treatment. Occasionally, it may be necessary to use sedation or general anesthesia to achieve the desired muscle relaxation. In case of recurrence, surgical treatment is indicated. One nonsurgical method of treatment is the local infiltration of botulinum toxin type A. We present 4 cases of recurrent TMJ dislocation in patients suffering from conditions of neurologic origin, with considerable motor deterioration, treated with local infiltration of botulinum toxin type A. In conclusion, the injection of botulinum toxin type A is an effective method in cases of neurogenic TMJ dislocation, with low morbidity and side effects, improving patients' quality of life.

166. Wahl, M. J. (2010). "Antibiotic prophylaxis in artificial joint patients." *J Oral Maxillofac Surg* 68(4): 949.

167. Wahl, M. J. and R. S. Brown (2010). "Dentistry's wonder drugs: local anesthetics and vasoconstrictors." *Gen Dent* 58(2): 114-123; quiz 124-115.

This article reviews recent developments concerning local anesthetics, including the amount of pain resulting from injection, which drugs achieve anesthesia most effectively, proper dosing for anesthetizing children and adults, the maximum recommended doses of lidocaine 2% with epinephrine for cardiac patients, and which drugs can be used for patients taking monoamine oxidase (MAO) inhibitors, tricyclic antidepressants, or nonselective beta blockers. Dentists should be familiar with all aspects of local anesthetics, especially anesthetic toxicity and maximum recommended doses.

168. Waldman, H. B. and S. P. Perlman (2010). "Ranking New Jersey in dental health and access to care for disadvantaged children." *J N J Dent Assoc* 81(4): 27-29.

New Jersey is last in state rankings based upon policies to ensure dental health and access to care for disadvantaged children. A review of the impact of limited dental care for these children is presented with attention to changes in federal legislation which may increase the availability of services for youngsters in low income families.

169. Waldman, H. B., S. P. Perlman, et al. (2010). "The transition of children with disabilities to adulthood: what about dental care?" *J Am Dent Assoc* 141(8): 937-938.

170. Walsh, L. J. (2010). "Clinical assessment and management of the oral environment in the oncology patient." *Aust Dent J* 55 Suppl 1: 66-77.

The dental care of oncology patients is an important component of general dental practice. Oncology patients have additional requirements for their outpatient care in the dental office. Intense involvement of the general dental practitioner in the patient's overall plan of care is essential so that appropriate preventive and therapeutic strategies are followed prior to chemotherapy, radiation and other medical treatments. This paper provides an overview of the role of the dental practitioner in the pre-treatment workup and post-treatment maintenance of oncology patients, and discusses the complications which occur during the intensive and in-hospital phases of care, in the context of approaches that show promise for reducing or preventing these. The role of the general dental practitioner in the maintenance of oral health for the remainder of the patient's life is stressed, with evidence-based recommendations given for optimal use of home care products which support oral health and improve quality-of-life.

171. Wang, X. and A. Lussi (2010). "Assessment and management of dental erosion." *Dent Clin North Am* 54(3): 565-578.

Studies have shown a growing trend toward increasing prevalence of dental erosion, associated with the declining prevalence of caries disease in industrialized countries. Erosion is an irreversible chemical process that results in tooth substance loss and leaves teeth susceptible to damage as a result of wear over the course of an individual's lifetime. Therefore, early diagnosis and adequate prevention are essential to minimize the risk of tooth erosion. Clinical appearance is the most important sign to be used to diagnose erosion. The Basic Erosive Wear Examination (BEWE) is a simple method to fulfill this task. The determination of a variety of risk and protective factors (patient-dependent and nutrition-dependent factors) as well as their interplay are necessary to initiate preventive measures tailored to the individual. When tooth loss caused by erosive wear reaches a certain level, oral rehabilitation becomes necessary.

172. Wang, X., B. Megert, et al. (2011). "Preventing erosion with novel agents." *J Dent* 39(2): 163-170.

OBJECTIVES: This in vitro study aimed to investigate the protective effect of four commercial novel agents against erosion. **METHODS:** Ninety human molars were distributed into 9 groups, and after incubation in human saliva for 2 h, a pellicle was formed. Subsequently, the specimens were submitted to demineralization (orange juice, pH 3.6, 3 min) and remineralization (paste slurry containing one of the tested novel agents, 3 min) cycles, two times per day, for 4 days. The tested agents were: (1) DenShield Tooth; active ingredient: 7.5% W/W NovaMin((R)) (calcium sodium phosphosilicate); (2) Nanosensitive hca; active ingredient: 7.5% W/W NovaMin((R)); (3) GC Tooth Mousse; active ingredient: 10% Recaldent (CPP-ACP); (4) GC MI Paste Plus; active ingredients: 10% Recaldent, 900 ppm fluoride. Two experimental procedures were performed: in procedure 1, the tested agents were applied prior to the erosive attack, and in procedure 2 after the erosive attack. A control group receiving no prophylactic treatment was included. Surface nanohardness (SNH) of enamel specimens was measured after pellicle formation and after completion of daily cyclic treatment. **RESULTS:** SNH significantly decreased at the end of the experiment for all groups ($p < 0.05$). In both procedures, there was no statistically significant difference between the control group and those treated with paste slurries ($p > 0.05$). In addition, the changes in SNH ($\Delta\text{SNH} = \text{SNH}_{\text{baseline}} - \text{SNH}_{\text{final}}$) did not show statistically significant difference between both procedures ($p > 0.05$). **CONCLUSION:** Tooth erosion cannot be prevented or repaired by these novel agents, regardless of fluoride content.

173. Weaver, J. M. (2010). "The ADA's new emergency airway course for sedationists." *Anesth Prog* 57(4): 137-138.

174. Weil, T. N. and M. R. Inglehart (2010). "Dental education and dentists' attitudes and behavior concerning patients with autism." *J Dent Educ* 74(12): 1294-1307.

The number of patients diagnosed with autism spectrum disorders (ASD) in the United States has increased significantly. The objectives of this study were to explore general and pediatric dentists' professional attitudes and behavior towards patients with ASD; these dentists' perceptions of their dental education about these issues; and the relationships among their educational experiences, attitudes, and behaviors concerning patients with ASD. Survey data were collected from 162 general dentists in Michigan and 212 pediatric dentists across the United States. The results showed that 89 percent of pediatric dentists and 32 percent of general dentists treat patients with ASD. The respondents disagreed with statements indicating that their predoctoral dental education had prepared them well to treat patients with ASD. However, the better they felt prepared, the more likely they were to provide care for these patients. The frequency with which pediatric dentists said they use appropriate behavior management strategies when treating patients with ASD correlated with the quality of their educational experiences. In conclusion, given the growing number of patients with ASD, it is important to revisit dental education efforts targeted towards preparing future dental care providers for the treatment of patients with ASD and special needs.

175. 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.

176. Willumsen, T., B. Fjaera, et al. (2010). "Oral health-related quality of life in patients receiving home-care nursing: associations with aspects of dental status and xerostomia." Gerodontology 27(4): 251-257.

OBJECTIVE: To explore the differences in oral status, dental attendance and dry mouth problems between patients with long-term disease with high and low scores on Oral Health Impact Profile 14 (OHIP 14) and how patients cope with oral problems such as xerostomia and a reduced ability to brush their teeth. **BACKGROUND:** There has been a lack of studies of oral health and oral health-related quality of life in the frail elderly within the community services.

MATERIALS AND METHODS: A cross-sectional questionnaire study was conducted with 137 patients receiving home-care nursing. Structured interviews were conducted by student nurses using OHIP-14, items from the Xerostomia Inventory and questions concerning dental visit habits, brushing of teeth and data from medical records. **RESULTS:** Eighty-three per cent of patients had natural teeth and 60% had only natural teeth. 'Natural teeth only' indicated a low score on OHIP-14. Problems with brushing and items concerning xerostomia indicated a high score on OHIP-14. Contrasts in the assessments concerning brushing of teeth and xerostomia indicated low priority from the patients themselves and the nursing staff. **CONCLUSION:** Community health services should focus upon oral health. Both patients and nurses should assess the need for regular brushing of teeth carried out by home-care nurses. Assessment and treatment of dry mouth problems should have higher priority.

177. Wood, M. (2010). "The safety and efficacy of intranasal midazolam sedation combined with inhalation sedation with nitrous oxide and oxygen in paediatric dental patients as an alternative to general anaesthesia." SAAD Dig 26: 12-22.

INTRODUCTION: Conscious Decision¹ was published in 2000 by the Department of Health, effectively ending the provision of dental general anaesthesia (DGA) outside the hospital environment. Other aspects of dental anxiety and behavioural management and sedation techniques were encouraged before the decision to refer for a DGA was reached. Although some anxious children may be managed with relative analgesia (RA), some may require different sedation techniques for dentists to accomplish dental treatment. Little evidence has been published in the UK to support the use of alternative sedation techniques in children. This paper presents another option using an alternative conscious sedation technique. **AIM:** to determine whether a combination of intranasal midazolam (IN) and inhalation sedation with nitrous oxide and oxygen is a safe and practical alternative to DGA. **STUDY DESIGN:** A prospective clinical audit of 100 cases was carried out on children referred to a centre for DGA. **METHOD:** 100 children between 3 and 13 years of age who were referred for DGA were treated using this technique. Sedation was performed by intranasal midazolam followed by titrating a mixture of nitrous oxide and oxygen. A range of dental procedures was carried out while the children were sedated. Parents were present during the dental treatment. Data related to the patient, dentistry and treatment as well as sedation variables were collected at the treatment visit and a telephonic post-operative assessment from the parents was completed a week later. **RESULTS:** It was found that 96% of the required dental treatment was completed successfully using this technique, with parents finding this technique acceptable in 93% of cases. 50% of children found the intranasal administration of the midazolam acceptable. There was no clinically relevant oxygen desaturation during the procedure. Patients were haemodynamically stable and verbal contact was maintained throughout the procedure. **CONCLUSIONS:** In selected cases this technique provides a safe and effective alternative to DGA and could reduce the number of patients referred to hospitals for DGA. It is recommended that this technique should only be used by dentists skilled in sedation with the appropriate staff and equipment at their disposal.

178. Wu, Y., G. Zhou, et al. (2010). "A randomized double-blind, positive-control trial of topical thalidomide in erosive oral lichen planus." Oral Surg Oral Med Oral Pathol Oral Radiol Endod 110(2): 188-195.

OBJECTIVE: The objective of this study was to evaluate the short-term efficacy and safety of topical thalidomide for erosive oral lichen planus (OLP) in a prospective randomized, positive-control, double-blind clinical trial. **STUDY DESIGN:** Sixty-nine patients with erosive OLP received thalidomide 1% paste (n = 37) or dexamethasone 0.043% paste (n = 32) for 1 week. Patients without erosions after initial 1-week treatment were followed for recurrence, whereas those with ongoing erosions received an additional 3-week treatment. Outcome measures included size of erosive area, visual

analog scale (VAS) scores, 3-month recurrence rates, and adverse effects at 1 year. RESULTS: After 1-week application, both groups showed significant reductions in erosive areas and VAS scores ($P < .001$). Complete healing occurred in 18 (54.5%) of 33 thalidomide-treated and 17 (56.7%) of 30 dexamethasone-treated patients. Erosive area size ($P = .420$) and VAS scores ($P = .498$) were similar between groups. After 1 month of treatment, 24 patients receiving thalidomide (66.7%) and 22 receiving dexamethasone (73.3%) fully healed. There was no difference between groups in recurrence at the 3-month follow-up. Only 2 patients in each group experienced discomfort with treatment, and no adverse reactions were observed over 1 year of follow-up. CONCLUSION: Topical thalidomide appears as effective as dexamethasone for erosive OLP.

179.Wynn, R. L. (2010). "Antidepressant drugs: new reports on adverse effects and efficacy." *Gen Dent* 58(6): 474-477.

180.Wynn, R. L. (2010). "The top 50 prescription medications dispensed in pharmacies in 2008." *Gen Dent* 58(5): 360-363.

181.Yilmaz, Y., C. Guler, et al. (2010). "Evaluation of tooth-fragment reattachment: a clinical and laboratory study." *Dent Traumatol* 26(4): 308-314.

PURPOSE: To evaluate the restoration of fractured teeth by reattaching tooth fragment to its tooth remnant in a group of children and adolescents, and to compare the results with those of a laboratory study. MATERIALS AND METHODS: The clinical study was conducted on 43 fractured incisors: 22 uncomplicated crown fractures (Group A) and 21 complicated crown fractures (Group B). The 43 incisal fragments: 23 were kept dry for 47 h and 20 were kept wet for 24 h by the patients before they were reattached. The fragments were kept in 0.9% saline solution for 30 min before reattachment. The fragments in Group A were reattached using a dentin bonding agent, a flowable and a hybrid resin composite, whereas the fragments in Group B were reattached to the tooth remnant after a pulpotomy was performed. The laboratory study was conducted on 56 extracted incisors. Teeth were divided equally into four groups: Group I - Uncomplicated crown fracture + wet medium; Group II - Uncomplicated crown fracture + dry medium; Group III - Complicated crown fracture + wet medium, and Group IV - Complicated crown fracture + dry medium. The fragments were then reattached in a manner that was similar to that used in the clinical study. The restored teeth were then re-fractured. All data were analyzed statistically. RESULTS: In the clinical study, the restored teeth were followed up for 2 years. Neither the type of trauma nor the storage medium had any significant effect on the survival, color, and bond strength of the restored teeth when assessed in the clinical and laboratory study. The color disharmony that was encountered initially in restored teeth resolved significantly on its own accord within 12 months after reattachment of the fragment. CONCLUSION: Fragment reattachment can be used to treat fractured teeth successfully in children and adolescents.

182.Yoshida, H., K. Tsuji, et al. (2010). "Clinical study of tongue pain: Serum zinc, vitamin B12, folic acid, and copper concentrations, and systemic disease." *Br J Oral Maxillofac Surg* 48(6): 469-472.

The aim of this retrospective study of patients with tongue pain who showed no improvement after initial treatment and examination was to find out if their lack of response correlated with serum concentrations of zinc, vitamin B12, folic acid, and copper, and if it was associated with coexisting systemic diseases. We studied 311 patients for whom we had data about serum concentrations of these elements, and recorded whether they had any systemic diseases and were taking medicines regularly. One patient (0.3%) had a copper concentration outside the reference range; 2 patients (0.6%) had folic acid concentrations outside the reference range. The corresponding number for vitamin B12 was 5 (2%), and for zinc 30 (10%). The systemic diseases with the highest rates were: hyperlipidaemia ($n=53$, 17%), gastritis or gastric ulcer ($n=51$, 16%), angina pectoris ($n=39$, 13%), diabetes mellitus ($n=31$, 10%), thyroid disease ($n=31$, 10%), mild mental disorder ($n=27$, 9%), hypertension ($n=18$, 6%), cerebral infarction ($n=17$, 6%), leiomyoma ($n=15$, 5%) and anaemia ($n=15$, 5%). Roughly 10% of the patients were deficient in zinc. This study suggested that the serum concentration of zinc was most important to the patients with tongue pain. Many patients had more than one systemic condition, and all were taking various drugs.

183.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.

184.Zini, A., R. Czerninski, et al. (2010). "Oral cancer over four decades: epidemiology, trends, histology, and survival by anatomical sites." J Oral Pathol Med 39(4): 299-305.

BACKGROUND: Oral cancer is one of the few life-threatening oral diseases. The subtypes and different sites of oral cancer has different etiology epidemiology and survival rate. Prevalence of the various anatomical oral sites provided potential baseline for improvement of clinical approach. **METHODS:** Incidence and survival rates were derived from the Israel National Cancer Registry and included all registered data between 1970 and 2006. Oral cancer included the lips, tongue, buccal mucosa, gums, vestibulum, floor of the mouth, and palate. **RESULTS:** Most prevalent oral cancer subtype was squamous cell carcinoma (SCC) among men above the age of 55 years. Females had a higher incidence of SCC in lateral border of tongue, gums and buccal mucosa. Lymphoma and sarcoma were the most prevalent under the age of 20. Melanomas and metastatic disease revealed the lowest survival rate, while invasive or infiltrating basal cell carcinoma in the lips had the highest rate. The highest oral survival rate was for the lip, and the lowest was for the tongue and gums. **CONCLUSIONS:** Early detection of oral cancer is important for all the medical health team. Decrease in lip carcinoma may be a result of occupational or awareness changes and should be studied. Non-epithelial tumors under the age of 20 should be considered as a differential diagnosis. A basic oral examination should be included in all routine medical examinations, with emphasis on high-risk patients and high-risk oral sites.