

**2010 Literature Review
(SAID's Search of Dental Literature Published
in Calendar Year 2009*)**



Special Care Advocates in Dentistry

**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 2009*
Language = English
SAID Search-Term Results 6,552
Initial Selection Results = 521 articles
Final Selected Results = 151 articles

Compiled by Robert G. Henry, DMD, MPH

***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.*

SAID Search-Terms Employed:

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

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

Categories and Highlights:

- | | |
|-----------------------------------|----------------------------|
| A. Mental Issues (1-5) | F. Sedation (22-26) |
| B. Dental Care for disabled (6-9) | G. Oral conditions (27-32) |
| C. Behavior mgmt (10-13) | H. State/community (33,34) |
| D. Syndromes (14-16, 37) | I. Pharmacy preps (39) |
| E. Immobilization (18, 19, 21) | J. Other (17, 35, 36, 38) |

*In grateful recognition and appreciation of **Ms. Patti Herzog**, librarian from the VA Medical Center in Lexington for the help in collecting and copying articles from this literature search.

SAID 2010 Literature Review (Articles from 2009)

1. (2009). "**Aspiration pneumonia.**" *Respirology* **14 Suppl 2**: S59-64.

Aspiration pneumonia is diagnosed upon confirmation of inflammatory findings in the lungs and overt aspiration (apparent aspiration) or a condition in which aspiration is strongly suspected (abnormal swallowing function and dysphagia). In hospital-acquired pneumonia, this occurs as one consequence of frequent silent aspiration. In the diagnosis of aspiration pneumonia, evaluation of the risk of silent aspiration during the night and evaluation of swallowing function are important. The causative microorganisms in aspiration pneumonia, similar to community-acquired pneumonia, are basically thought to be bacteria residing in the oral cavity, such as pneumococcus, Haemophilus influenzae, Staphylococcus aureus and anaerobes. Hospital-acquired aspiration pneumonia often occurs with no distinction between apparent and silent aspiration, and in many cases, aspiration of foreign substances is serious when dysphagia itself is severe. In the treatment of aspiration pneumonia, use of antimicrobials for the pneumonia itself and early measures to prevent aspiration are important.
2. Abetz, L. M. and N. W. Savage (2009). "**Burning mouth syndrome and psychological disorders.**" *Aust Dent J* **54(2)**: 84-93; quiz 173.

Burning mouth syndrome (BMS) is an oral dysaesthesia that causes chronic orofacial pain in the absence of a detectable organic cause. The aetiology of BMS is complex and multifactorial, and has been associated in the literature with menopause, trigger events and even genetic polymorphisms. Other studies have found evidence for mechanisms such as central and peripheral nervous system changes, with clinical and laboratory investigations supporting a neuropathologic cause. These physiological explanations notwithstanding, there is still much evidence that BMS aetiology has at least some psychological elements. Somatoform pain disorder has been suggested as a mechanism and factors such as personality, stress, anxiety, depression and other psychological, psychosocial and even psychiatric disorders play a demonstrable role in BMS aetiology and symptomatology. In order to treat BMS patients, both physiological and psychological factors must be managed, but patient acceptance of possible components of psychological disease basis is a major hurdle. Clinical signs of patient stress, anxiety or depression are a useful reinforcement of clinical discussions. The current paper proposes a number of clinical signs that may be useful for both clinical assessment and subsequent patient discussions by providing visible supportive evidence of the diagnosis.
3. Ahmed, M. M. and H. R. Martinez (2009). "**Short communication: Graph for calculating maximum local analgesic dose in millilitres for the paediatric population.**" *Eur Arch Paediatr Dent* **10 Suppl 1**: 40-42.

AIM: Determination of the maximum local analgesic dosage in millilitres can be confusing. This article presents a new graph that easily allows the dental practitioner to determine a child's maximum local analgesic dosage in millilitres based on their weight. BACKGROUND: Local analgesia is used daily in dentistry to manage pain, and different kinds of agents are available in the market that may be selected depending on the strength and duration of analgesia required. Each analgesic agent has a maximum recommended dose, and it is very important to calculate that dose, especially in children, to avoid the risk of toxicity that could lead to death. Currently a series of calculations are used to calculate the maximum recommended dose for local analgesic agents that could be taxing. This paper presents a newly-developed graph that makes it easier for dental practitioners to quickly identify the maximum recommended dose of the different local analgesic agents used in dentistry based on a patient's weight. CONCLUSION: Dentists can utilize this graph to obtain the maximum local analgesic dose in millilitres based on the child's weight. This will save time and encourage dentists to routinely identify the maximum allowed dose and most importantly, decrease or eliminate the risks of toxicity and overdose especially when treating small children.
4. Akutsu, Y., H. Matsubara, et al. (2010). "**Pre-operative dental brushing can reduce the risk of postoperative pneumonia in esophageal cancer patients.**" *Surgery* **147(4)**: 497-502.

BACKGROUND: The presence of pathogens in dental plaque is a risk factor associated with postoperative pneumonia in esophageal cancer patients. The effectiveness of pre-operative dental brushing to decrease the risk of postoperative pneumonia in esophageal cancer patients was evaluated prospectively. METHODS: A total of 86 thoracic esophageal cancer patients who underwent an esophagectomy were investigated. Patients were divided into 2 groups: the control group (41 patients) and the pre-operative dental brushing group (45 patients). The patients in the brushing group were assigned to brush their teeth 5 times a day. After the operation, the frequency of postoperative pneumonia and need for tracheostomy for pulmonary treatment was calculated. RESULTS: Postoperative pneumonia was decreased markedly from 32% to 9% ($P = .013$), and the frequency of postoperative pneumonia requiring tracheostomy decreased from 12% to 0% in the dental brushing group, respectively. Limiting the patients who had positive pathogenic bacteria in their dental plaque on their admission, the frequency of postoperative pneumonia was decreased from 71% (5 of 7 patients) in the control group to 17% (2 of 12 patients) in

the dental brushing group ($P = .045$). **CONCLUSION:** Frequent pre-operative dental brushing is performed easily and seems to prevent postoperative pneumonia in esophageal cancer patients.

5. Almeida, F. R. and A. A. Lowe (2009). **"Principles of oral appliance therapy for the management of snoring and sleep disordered breathing."** *Oral Maxillofac Surg Clin North Am* **21**(4): 413-420.
Oral appliance (OA) therapy for snoring, obstructive sleep apnea, or both is simple, reversible, quiet, and cost-effective and may be indicated in patients who are unable to tolerate nasal continuous positive airway pressure (nCPAP) or are poor surgical risks. OAs are effective in varying degrees and seem to work because of an increase in airway space, the provision of a stable anterior position of the mandible, advancement of the tongue or soft palate, and possibly a change in genioglossus muscle activity. This article provides a detailed clinical protocol and titration sequence for OAs, because this clinical procedure is often not well understood by practitioners new to the field. Prediction of treatment success is addressed, OA treatment is compared with surgery and nCPAP, OA compliance is described, and the possible adverse effects associated with this type of therapy are discussed.
6. Al-Zahrani, A. M., A. H. Wyne, et al. (2009). **"Comparison of oral midazolam with a combination of oral midazolam and nitrous oxide-oxygen inhalation in the effectiveness of dental sedation for young children."** *J Indian Soc Pedod Prev Dent* **27**(1): 9-16.
AIM: To compare the effectiveness of 0.6 mg/kg oral midazolam sedation alone and a combination of 0.6 mg/kg oral midazolam plus nitrous oxide-oxygen inhalation sedation, in controlling the behavior of uncooperative children during dental treatment. STUDY DESIGN: The study had a crossover design where the same patient received two different sedation regimens, that is, oral midazolam 0.6 mg/kg and oral midazolam 0.6 mg/kg with nitrous oxide-oxygen inhalation during two dental treatment visits. MATERIALS AND METHODS: Thirty children (17 males and 13 females) were randomly selected for the study, with a mean age of 55.07 (+/- 9.29) months, ranging from 48 - 72 months. A scoring system suggested by Houpt et al. (1985) was utilized for assessment of the children's behavior. RESULTS: There was no significant ($p > 0.05$) difference in the overall behavior assessment between the two sedation regimens, that is, oral midazolam alone and oral midazolam plus nitrous oxide-oxygen. However, the combination of midazolam and nitrous oxide-oxygen showed significantly ($p < 0.05$) superior results as compared to midazolam alone, in terms of controlling movement and crying during local anesthesia administration and restorative procedures. CONCLUSION: Compared to oral midazolam alone, a combination of oral midazolam and nitrous oxide inhalation sedation appears to provide more comfort to pediatric dental patients and operators during critical stages of dental treatment.
7. Ami, S. and A. Wolff (2010). **"Implant-supported electrostimulating device to treat xerostomia: a preliminary study."** *Clin Implant Dent Relat Res* **12**(1): 62-71.
BACKGROUND: The full accomplishment of salivary function depends on proper salivary flow rate and composition. Salivary secretion is highly essential in the maintenance of health and integrity of oral hard and soft tissue. Xerostomia is a common symptom affecting between one-fifth and one-third of the adult population, more commonly women than men. Induction of salivary secretion exists in several pharmacological formulations per os. Electrostimulation to enhance salivary secretion has been used frequently as a research tool but only in limited extent as a clinical method to treat patients with xerostomia. PURPOSE: The aims of this preliminary study were to observe and evaluate the therapeutic effect on xerostomia of the Saliwell Crown (Saliwell Ltd., Harutzim, Israel), an innovative saliva electrostimulation device fixed on an implant, placed in the lower third molar area. MATERIALS AND METHODS: A Saliwell Crown was placed in the lower third molar area of an 81-year-old female patient with complaints of dry and burning mouth. Salivary secretion was measured, and the patient was asked to fill in written satisfaction questionnaires. The patient was monitored for a year, comparing her salivary secretion rates and the written questionnaires. RESULTS: The results showed a constant slight but significant increase in the salivary secretion and in the patient's personal feelings as presented in the questionnaires. CONCLUSIONS: The saliva stimulation device Saliwell Crown, placed on an implant in an 81-year-old patient with dry and burning mouth complaints, presented promising results when both the salivary secretion tests and the self-assessment questionnaires were examined and compared.
8. Ankola, A. V., M. Hebbal, et al. (2009). **"How clean is the toothbrush that cleans your tooth?"** *Int J Dent Hyg* **7**(4): 237-240.
Until recently, little attention has been directed towards the role the toothbrush may play in human health, even though a report of toothbrush as a significant factor in the infection appeared in 1920. It is common knowledge that the human mouth harbours a wide variety of microorganisms, some of which, at any given time, can be assumed to be potential pathogens. This was not known when toothbrushes were originally designed, yet the common toothbrush has been used in basically the same form for about 200 years. In today's world of organ transplantation and alteration of the immune system, it is important to consider the toothbrush as a source of potential pathogens. Given the fact that very often people will traumatize themselves with their toothbrush, this trauma may become a potential portal of entry for organisms. In this article, we have attempted to demonstrate the importance of toothbrush disinfection, given

tips on home toothbrush care and hope to motivate the dentists to educate the patients on the importance of toothbrush disinfection.

9. Anson, D. (2009). "**The changing treatment planning paradigm: save the tooth or place an implant.**" Compend Contin Educ Dent **30**(8): 506-508, 510-502, 514-507; quiz 518, 520.
With the high predictability of dental implants and the emphasis on evidence-based dentistry, treatment planning in periodontics and restorative dentistry is undergoing a paradigm shift. The algorithm of when to try to save periodontally involved teeth and when to extract and place dental implants is changing; however, the dental research has not yet provided definitive answers. This article discusses five main factors to consider during treatment planning and provides guidelines for considering extraction and implant placement or tooth-preservation procedures.
10. Assael, L. A. (2009). "**Oral bisphosphonates as a cause of bisphosphonate-related osteonecrosis of the jaws: clinical findings, assessment of risks, and preventive strategies.**" J Oral Maxillofac Surg **67**(5 Suppl): 35-43.
PURPOSE: Oral bisphosphonates are known to have potentially profound effects on oral health. A review of the evidence supporting answers to key clinical questions is necessary to assist surgeons in the care of their patients who are receiving oral bisphosphonates. MATERIALS AND METHODS: The literature is reviewed to address several questions, ie, what is the risk of bisphosphonate-related osteonecrosis of the jaws (BRONJ) in my patient on oral bisphosphonates? Why are so few cases of BRONJ attributable to oral bisphosphonate use? What is the importance of cofactors in the development of osteonecrosis? How major a clinical problem is BRONJ, typically, in the oral bisphosphonate patient? What dental procedures are associated with a risk of BRONJ? Are other findings apart from BRONJ of importance in the oral bisphosphonate patient? Are there proven strategies to prevent BRONJ in the oral bisphosphonate patient? Should my patient discontinue the use of oral bisphosphonates temporarily or permanently? RESULTS: A review of the evidence offers information that will help in clinical decision-making. In general, the risk of BRONJ is between 1 in 10,000 and 1 in 100,000, but may increase to 1 in 300 after dental extraction. The great majority of BRONJ cases will likely remain in the intravenous population. Cofactors have not been firmly established, although smoking, steroid use, anemia, hypoxemia, diabetes, infection, and immune deficiency may be important. Rarely does BRONJ in the oral bisphosphonate patient appear to progress beyond stage 2, and many cases reverse with discontinuation of oral medication. Extraction is the only dental procedure shown to increase the risk of BRONJ. Dental implant therapy should be used with caution in the oral bisphosphonate patient. The benefits and risks of oral bisphosphonate use must be weighed individually and in consultation with the prescribing physician, before determining the need for temporary or permanent cessation of medication. CONCLUSION: Emerging evidence supports clinical decisions in favor of the oral and maxillofacial surgery patient taking oral bisphosphonates.
11. Balandin, S., B. Hemsley, et al. (2009). "**Understanding mealtime changes for adults with cerebral palsy and the implications for support services.**" J Intellect Dev Disabil **34**(3): 197-206.
BACKGROUND: Changes in the swallowing capabilities of adults with cerebral palsy as they age may impact on their health, safety, and well-being. METHOD: Thirty-two adults with cerebral palsy aged between 30 and 69 years participated in in-depth interviews about their experiences of changes in their swallowing and related management of their mealtimes within the last two years. A constant comparative qualitative analysis of the interviews elucidated the changes they experienced. RESULTS: Changes included increased coughing and choking, digestive or gastro-oesophageal symptoms, diet modification, loss of independence with psychosocial consequences. Participants reported unsatisfactory collaboration with service providers over mealtime management decisions and interventions. CONCLUSIONS: Adults with cerebral palsy may experience gradual changes in their swallowing and mealtime capabilities from as early as 30 years of age. Regular collaborative assessment and involvement of all stakeholders in decisions are important to facilitate compliance with recommendations, ongoing safety, and optimal well-being.
12. Balasubramaniam, R., G. D. Klasser, et al. (2009). "**Separating oral burning from burning mouth syndrome: unravelling a diagnostic enigma.**" Aust Dent J **54**(4): 293-299.
Burning mouth syndrome (BMS) is characterized by burning pain in the tongue or other oral mucous membrane often associated with symptoms such as subjective dryness of the mouth, paraesthesia and altered taste for which no medical or dental cause can be found. The difficulty in diagnosing BMS lies in excluding known causes of oral burning. A pragmatic approach in clarifying this issue is to divide patients into either primary (essential/idiopathic) BMS, whereby other disease is not evident or secondary BMS, where oral burning is explained by a clinical abnormality. The purpose of this article was to provide the practitioner with an understanding of the local, systemic and psychosocial factors which may be responsible for oral burning associated with secondary BMS, therefore providing a foundation for diagnosing primary BMS.

13. Barker, K. E., M. D. Batstone, et al. (2009). **"Comparison of treatment modalities in burning mouth syndrome."** *Aust Dent J* **54**(4): 300-305; quiz 396.
BACKGROUND: Burning mouth syndrome (BMS) is characterized by a spontaneous burning pain in the oral mucosa without known organic cause or standardized treatment. The aims of this study were to assess and compare the efficacy of clonazepam and diazepam in relieving the symptoms associated with BMS and evaluate for which patients this treatment might be effective by correlating treatment efficacy with underlying psychological status. METHODS: The medical records of BMS patients attending an oral medicine private practice (1999-2004) were reviewed. The patients were then contacted and asked to complete a short questionnaire regarding their response to diazepam/clonazepam drug therapies. A second group of patients attending the above clinic (n = 30) were asked to fill out a hospital anxiety and depression assessment form in an attempt to correlate treatment success with underlying psychological status. RESULTS: A total of 71.4 per cent of patients treated with clonazepam had partial or complete resolution of their oral symptoms, while 55.1 per cent of patients treated with diazepam had improvement of their oral symptoms. There was no correlation between underlying anxiety or depression and efficacy of benzodiazepine medication. CONCLUSIONS: A greater percentage of patients taking clonazepam reported either partial or complete relief of symptoms compared to diazepam. However, the differences were not statistically significant. There was no correlation found between underlying psychopathology and treatment success with benzodiazepines.
14. Bartlett, D. (2009). **"Etiology and prevention of acid erosion."** *Compend Contin Educ Dent* **30**(9): 616-620.
Acid erosion is the chemical effect of dietary or gastric acids on enamel and dentine. Unlike dental caries, which is a bacterially mediated condition, acid erosion normally is combined with physical forms of attrition and abrasion. The clinical appearance of acid erosion in the early stages is seen characteristically as hollowed-out lesions on occlusal surfaces and on smooth surfaces as a subtle change in the tooth contour. As the condition progresses, the lesions coalesce and form widespread dentin exposure and coronal destruction. Dietary acids that are present in beverages and fruits potentially can cause acid erosion. However, dietary habits involving frequent consumption of acids are believed to be important determinants in the risk of developing clinical signs of acid erosion. Prevention using fluoride toothpastes, dietary modifications, and calcium-based products probably have a significant clinical effect in reducing the risk of developing acid erosion.
15. Becker, D. E. (2009). **"Preoperative medical evaluation: part 1: general principles and cardiovascular considerations."** *Anesth Prog* **56**(3): 92-102; quiz 103-104.
A thorough assessment of a patient's medical status is standard practice when dental care is provided. Although this is true for procedures performed under local anesthesia alone, the information gathered may be viewed somewhat differently if the dentist is planning to use sedation or general anesthesia as an adjunct to dental treatment. This article is the first of a 2-part sequence and will address general principles and cardiovascular considerations. A second article will address pulmonary, metabolic, and miscellaneous disorders.
16. Becker, D. E. (2009). **"Preoperative medical evaluation: part 2: pulmonary, endocrine, renal, and miscellaneous considerations."** *Anesth Prog* **56**(4): 135-144; quiz 145.
A thorough assessment of a patient's medical status is standard practice when dental care is provided. Although this is true for procedures performed under local anesthesia alone, the information gathered may be viewed somewhat differently if the dentist is planning to provide sedation or general anesthesia as an adjunct to dental treatment. This article, the second of a 2-part sequence on preoperative assessment, will address pulmonary and other noncardiovascular disorders.
17. Becker, D. E. and A. B. Casabianca (2009). **"Respiratory monitoring: physiological and technical considerations."** *Anesth Prog* **56**(1): 14-20; quiz 21-12.
The American Dental Association and several dental specialty organizations have published guidelines that detail requirements for monitoring patients during various levels of sedation and, in some cases, general anesthesia. In general, all these are consistent with those guidelines suggested by the American Society of Anesthesiologists for sedation and analgesia by nonanesthesiologists. It is well accepted that the principal negative impact of sedation and anesthesia is the compromise of respiratory function. While monitoring per se is a technical issue, an appreciation of its purpose and the interpretation of the information provided require an understanding of respiratory anatomy and physiology. The focus of this continuing education article is to address the physiological aspects of respiration and to understand the appropriate use of monitors, including the interpretation of the information they provide.

18. Beil, H., M. Mayer, et al. (2009). **"Dental care utilization and expenditures in children with special health care needs."** J Am Dent Assoc **140**(9): 1147-1155.
BACKGROUND: The authors compared children with special health care needs (CSHCN) and children without special health care needs (SHCN) with respect to the odds, amount and determinants of having any dental care and dental care expenditures. METHODS: The authors assessed data from the 2004 Medical Expenditures Panel Survey, Agency for Healthcare Research and Quality, to identify a sample of 8,518 children aged 2 to 17 years. The authors used logistic regression to determine the effect of having SHCN on the probability of having any dental care expenditure, for total dental care expenditures and procedure-specific expenditures. They tested the modifying effect between CSHCN and other variables on the probability of having any dental care expenditure. RESULTS: Compared with children without SHCN, CSHCN did not differ in the probability (odds ratio = 0.91, 95 percent confidence interval [CI] = 0.76 to 1.09) or amount (beta = 30.17, 95 percent CI = -162.93 to 223.27) of total dental care expenditures. Likewise, CSHCN did not differ in their likelihood of having undergone a preventive, restorative, diagnostic or other procedure. Known determinants of dental care utilization did not modify the relationships between having SHCN and any dental care expenditure. CONCLUSIONS: Despite the reported difficulty in CSHCN's accessing dental care, the authors found that CSHCN had dental care utilization and expenditures that were comparable with those of children without SHCN. Furthermore, the association of CSHCN status and any dental care expenditure was not modified by known determinants of dental care utilization. Future research should focus on characterizing risk for dental disease among CSHCN more accurately and identifying factors that affect dental care utilization in CSHCN, including provider and parent characteristics. PRACTICE IMPLICATIONS: The study results highlight low rates of dental care utilization among all young children, including CSHCN. Efforts to increase dental care utilization among children are warranted and need to include broad-based provider and parent initiatives.
19. Bimstein, E. and J. Katz (2009). **"Obesity in children: a challenge that pediatric dentistry should not ignore--review of the literature."** J Clin Pediatr Dent **34**(2): 103-106.
The link between childhood oral diseases and obesity is demonstrated by their increasing prevalence, potential cause and effect relationship, the significant deleterious effect on the child's present and future oral and systemic health, and the influence of obesity on conscious sedation. The purpose of this manuscript is to review the literature on the relationships between childhood oral diseases and obesity, and between obesity, breathing and conscious sedation. While some reports suggest a connection between caries and obesity others do not, and it is unclear if they correlate or they just coexist since they have common etiologic and/or facilitating factors. Deleterious effects of dental caries and obesity on the systemic condition are clear, may potentiate each other, and facilitate the development and progress of chronic or acute systemic conditions. Obesity may interfere with the possibility to sedate patients because of potential breathing problems, or modify the effect of the sedative agents. Health providers should be aware of the increasing challenge posed by the correlations between dental caries, obesity, oral and systemic diseases. Furthermore, pediatric dentistry should team with other health professions in order to cooperate in the prevention and treatment of these diseases.
20. Binkley, C. J., A. Beacham, et al. (2009). **"Genetic variations associated with red hair color and fear of dental pain, anxiety regarding dental care and avoidance of dental care."** J Am Dent Assoc **140**(7): 896-905.
BACKGROUND: Red hair color is caused by variants of the melanocortin-1 receptor (MC1R) gene. People with naturally red hair are resistant to subcutaneous local anesthetics and, therefore, may experience increased anxiety regarding dental care. The authors tested the hypothesis that having natural red hair color, a MC1R gene variant or both could predict a patient's experiencing dental care-related anxiety and dental care avoidance. METHODS: The authors enrolled 144 participants (67 natural red-haired and 77 dark-haired) aged 18 to 41 years in a cross-sectional observational study. Participants completed validated survey instruments designed to measure general and dental care-specific anxiety, fear of dental pain and previous dental care avoidance. The authors genotyped participants' blood samples to detect variants associated with natural red hair color. RESULTS: Eighty-five participants had MC1R gene variants (65 of the 67 red-haired participants and 20 of the 77 dark-haired participants) ($P < .001$). Participants with MC1R gene variants reported significantly more dental care-related anxiety and fear of dental pain than did participants with no MC1R gene variants. They were more than twice as likely to avoid dental care as were the participants with no MC1R gene variants, even after the authors controlled for general trait anxiety and sex. CONCLUSION: Dental care-related anxiety, fear of dental pain and avoidance of dental care may be influenced by genetic variations. CLINICAL IMPLICATIONS: Dentists should evaluate all patients, but especially those with naturally red hair, for dental care-related anxiety and use appropriate modalities to manage the patients' anxiety.

21. Binkley, C. J., G. S. Haugh, et al. (2009). **"Oral microbial and respiratory status of persons with mental retardation/intellectual and developmental disability: an observational cohort study."** Oral Surg Oral Med Oral Pathol Oral Radiol Endod **108**(5): 722-731.
 OBJECTIVE: The objective of this study was to determine the prevalence of select microorganisms in oral biofilms and to investigate relationships between oral and respiratory status in persons with mental retardation/intellectual and developmental disabilities (IDD). STUDY DESIGN: We conducted a 6-month-long observational cohort study with 63 persons with IDD. Oral examinations, oral sampling, and medical record reviews were performed at baseline and then monthly. Polymerase chain reaction (PCR) was used to analyze all baseline oral samples for the presence of *Streptococcus pneumoniae*, Methicillin-resistant *Staphylococcus aureus* (MRSA), *Prevotella melaninogenica*, and *Candida albicans*. PCR analyses were also performed on participants' samples collected in the month before being diagnosed with a respiratory infection. RESULTS: All subjects had *P. melaninogenica* detected by PCR in their oral samples. Fifty-five percent (35 of 63) of participants had *S. pneumoniae*, MRSA, and *C. albicans* in their oral samples at baseline. No dental decay was detected clinically, oral hygiene was fair, and dysphagia was common. During the 6 months of the study, there were 22 respiratory infections (35% of participants)-12 pneumonias, 7 sinusitis, 1 bronchitis, and 1 upper respiratory tract infection. Participants with microorganisms in their baseline samples were significantly more likely to develop any respiratory infection and those who had poor oral status were significantly more likely to develop pneumonia. Almost 60% of participants who developed respiratory infections had the same microorganism detected in the sample collected in the month before infection as had been detected in their baseline sample. CONCLUSION: Potentially pathogenic microorganisms in the oral cavity and poor oral status significantly increased the risk of developing respiratory infections, including pneumonia, in persons with IDD. The results suggest that colonization with these microorganisms may persist despite routine tooth brushing. Meticulous comprehensive oral hygiene of the oral cavity may be needed to reduce oropharyngeal microbial load.
22. Bizarra, F. and S. Ribeiro (2009). **"Improving toothbrushing behaviour in an institution for the disabled in Lisbon, Portugal."** Int J Dent Hyg **7**(3): 182-187.
 PURPOSE: This pilot study evaluates changes in toothbrushing capability among 135 disabled individuals enrolled in an institution for the disabled. METHODS: Direct observation of toothbrushing behaviour of the disabled was used to recommend changes required in daily toothbrushing programme. The simplified Debris Index (DI-S) was used to compare plaque removal outcomes over a 3-month period. RESULTS: At baseline, of the 135 participants, 114 completed a routine toothbrushing procedure and 10 (8.8%) of them brushed all tooth surfaces. At the end of the study, 52 (48.6%) brushed all tooth surfaces. The mean difference between the initial and final DI-S was 0.62 ($P < 0.01$). CONCLUSION: Toothbrushing was not a common procedure at this institution. This study shows that it is possible to implement daily oral hygiene maintenance in disabled individuals. Furthermore, most participants will adopt more efficient toothbrushing behaviour when monitored daily.
23. Brand, H. S., W. Bekker, et al. (2009). **"Complications of local anaesthesia. An observational study."** Int J Dent Hyg **7**(4): 270-272.
 OBJECTIVES: Local anaesthesia is increasingly used by dental hygienists. As little is known about the incidence of adverse effects during and after the administration of local anaesthetics, we evaluated side-effects associated with local anaesthesia. METHODS: A prospective observational study was conducted using standard criteria among a group of 103 patients receiving mandibular block anaesthesia. RESULTS: Physical reactions like clenching fists (14.5%), moaning (12.6%) and turning pale (7.8%) were frequently observed. Patients (3.8%) showed a painful reaction because of needle contact with a nerve or the periosteum. Systemic complications were not observed. After the injection, 41.7% said they felt tense during the administration; 4.9% of the patients reported swallowing problems and 3.9% a tachycardia. CONCLUSIONS: These results suggest that administration of local anaesthesia has a small risk of adverse events. Complications, if they occur, seem minor and transient in nature.
24. Cabre, M., M. Serra-Prat, et al. (2010). **"Prevalence and prognostic implications of dysphagia in elderly patients with pneumonia."** Age Ageing **39**(1): 39-45.
 BACKGROUND: oropharyngeal dysphagia is a common condition among the elderly but not systematically explored. OBJECTIVE: to assess the prevalence and the prognostic significance of oropharyngeal dysphagia among elderly patients with pneumonia. DESIGN: a prospective cohort study. SETTING: an acute geriatric unit in a general hospital. SUBJECTS: a total of 134 elderly patients (>70 years) consecutively admitted with pneumonia. METHODS: clinical bedside assessment of oropharyngeal dysphagia and aspiration with the water swallow test were performed. Demographic and clinical data, Barthel Index, Mini Nutritional Assessment, Charlson Comorbidity Index, Fine's Pneumonia Severity Index and mortality at 30 days and 1 year after admission were registered. RESULTS: of the 134 patients, 53% were over 84 years and 55% presented clinical signs of oropharyngeal dysphagia; the mean Barthel score was 61 points indicating a frail population. Patients with dysphagia were older, showed lower functional status, higher prevalence of malnutrition and comorbidities and higher Fine's pneumonia severity scores. They had a higher mortality at 30 days (22.9% vs. 8.3%, $P = 0.033$) and at 1 year of follow-up (55.4% vs. 26.7%, $P = 0.001$).

CONCLUSIONS: oropharyngeal dysphagia is a highly prevalent clinical finding in elderly patients with pneumonia and is an indicator of disease severity in older patients with pneumonia.

25. Capua, M., N. Ahmadi, et al. (2009). **"Overview of obstructive sleep apnea in children: exploring the role of dentists in diagnosis and treatment."** *J Can Dent Assoc* **75**(4): 285-289.
Among the many factors important in children's development is sleep. Sleep disorders can impair children's sleep and lead to negative consequences. Obstructive sleep apnea (OSA), which involves blockage of the airway during sleep, can affect development and behaviour; thus, OSA in children should be diagnosed and treated at an early stage. One of the main causes of childhood OSA is enlargement of the tonsil tissues and, in most cases, their removal serves as an ultimate treatment of OSA. However, it remains unclear what proportion of children with enlarged tonsil tissue suffer from OSA. Dentists are becoming increasingly aware of the issue of OSA as they are sometimes involved in treatment of this condition using oral appliances. Moreover, as dentists often look into children's mouths, they can play an active role in identifying those with enlarged tonsils and referring them for sleep assessment.
26. Caputo, A. C. (2009). **"Providing deep sedation and general anesthesia for patients with special needs in the dental office-based setting."** *Spec Care Dentist* **29**(1): 26-30.
This article discusses the issues of morbidity and mortality associated with deep sedation and general anesthesia specifically in the dental office-based setting for patients with special needs (PSN). A focused review of a particular environment and patient population was challenging as it was difficult to identify articles that discuss the unique scope of this subject. During the review of the literature, no article was identified that discussed this exact topic. There were articles that discussed the delivery of general anesthesia for PSN in an outpatient setting and associated issues of morbidity and mortality. There were also articles and sources of information that discussed the delivery of general anesthesia for other patient populations in the office-based setting. In an effort to support the scope of this article, some of these articles are discussed as they pertain to the subject of this article. In addition, an analysis of the author's practice over a 4-year period is discussed in an effort to present relevant data per the scope of this article. After reviewing the literature and the author's clinical practice, it appears that the incidence of mortality for PSN in the dental office-based setting is minimal and the incidence of morbidity for this same population is limited to relatively minor events. Ultimately, it was concluded that the delivery of general anesthesia for PSN in the dental office-based setting can be considered a very safe and successful procedure.
27. Carvalho, T. S., T. R. Ribeiro, et al. (2009). **"The atraumatic restorative treatment approach: an "atraumatic" alternative."** *Med Oral Patol Oral Cir Bucal* **14**(12): e668-673.
INTRODUCTION: Fear and anxiety are part of all human experiences and they may contribute directly to a patient's behavior. The Atraumatic Restorative Treatment (ART) is a technique that may be an alternative approach in treating special care patients or those who suffer fear or anxiety. OBJECTIVE: the aim of this paper is to review the ART technique as an alternative to reduce pain and fear during dental treatment. MATERIAL AND METHODS: A search for the term "atraumatic restorative treatment" was carried out in the MEDLINE search engine. References, from the last 10 years, containing at least one of the terms: "psychological aspects", "discomfort", "fear", "anxiety" or "pain", were selected. RESULTS: A total of 120 references were found, from which only 17 fit the criteria. Discussion: All authors agreed that the ART promotes less discomfort for patients, contributing to a reduction of anxiety and fear during the dental treatment. Results also indicated that ART minimizes pain reported by patients. CONCLUSIONS: The ART approach can be considered as having favorable characteristics for the patient, promoting an "atraumatic" treatment. This technique may be indicated for patients who suffer from fear or anxiety towards dental treatments and whose behavior may cause the treatment to become unfeasible or even impossible altogether.
28. Casabianca, A. B. and D. E. Becker (2009). **"Cardiovascular monitoring: physiological and technical considerations."** *Anesth Prog* **56**(2): 53-59; quiz 60.
The American Dental Association and several dental specialty organizations have published guidelines that detail requirements for monitoring patients during various levels of sedation and, in some cases, general anesthesia. In general, all of these are consistent with those guidelines suggested by the American Society of Anesthesiologists Task Force for Sedation and Analgesia by Non-Anesthesiologists. It is well-accepted that the principal negative impact of sedation and anesthesia pertains to the compromise of respiratory function, but attentive monitoring of cardiovascular function is also important. While monitoring per se is a technical issue, an appreciation of its purpose and the interpretation of the information provided require an understanding of basic cardiovascular anatomy and physiology. The focus of this continuing education article is to address essential physiological aspects of cardiovascular function and to understand the appropriate use of monitors, including the interpretation of the information they provide.

29. Chan, D. C. and A. K. Chung (2009). **"Management of idiopathic subgingival amalgam hypertrophy--the common amalgam overhang."** *Oper Dent* **34**(6): 753-758.
An amalgam overhang is defined as an extension of amalgam restorative material beyond the confines of a cavity preparation. The pseudo pathology term "idiopathic subgingival amalgam hypertrophy" is used in the title for shock effect and as a scare tactic to catch the attention of our readers. From various studies, it is apparent that such overhangs are alarmingly common. The overhang is largely iatrogenic, caused by poor operator skill exacerbated by unusual dental morphology. Creep may also play a role in the gingival overhang of large amalgam restorations. Maybe we, as clinicians, are becoming complacent and lax in our techniques and matrixing while restoring such a routine restoration. This article revisits the pros and cons of different methods of amalgam overhang management with clinical cases for illustration.
30. Chandra, P., L. Anandakrishna, et al. (2009). **"Caries experience and oral hygiene status of children suffering from attention deficit hyperactivity disorder."** *J Clin Pediatr Dent* **34**(1): 25-29.
OBJECTIVE: The study was conducted to determine the caries experience and oral hygiene status of children suffering from attention deficit hyperactivity disorder (ADHD) and was compared with that of non-ADHD children. STUDY DESIGN: A total of 80 children, including 40 ADHD and 40 non-ADHD children were included in the study. A visual dental examination for dental caries was performed and oral hygiene status of these children was determined. The parent/guardian completed a questionnaire concerning the child's behavior followed by questionnaire to the child regarding oral hygiene practices and food habits. RESULTS: Student-t test and chi-square test showed that children with ADHD had significantly higher defs score, mean plaque score in compared to that of non-ADHD children. Statistical significant differences were also found out in relation with frequency of tooth brushing and consumption of sugary food among the children suffering from ADHD. CONCLUSION: Caries prevalence in the primary dentition is increased in the children suffering from ADHD due to poor oral hygiene and increased consumption of sugary foods.
31. Cohen, H. V. and S. Y. Quek (2009). **"Seizure disorders. Update on medical management for the dental clinician. A pacemaker for the brain."** *J N J Dent Assoc* **80**(3): 26-28.
There have been many papers reviewing the dental office assessment and management of the patient with a seizure disorder. This paper will discuss two updated medical management issues which may impact dental office care of the seizure patient. The focus will on the use of a pacemaker-like device connected to the vagus nerve as part of seizure control. Also presented is an FDA update on the increasingly recognized medical side effects of antiseizure (antiepileptic) medications which may impact a dentist's interaction with a patient.
32. Coke, J. M. and M. D. Edwards (2009). **"Minimal and moderate oral sedation in the adult special needs patient."** *Dent Clin North Am* **53**(2): 221-230, viii.
Oral minimal/moderate sedation can be an effective tool to aid in the dental management of adult special needs patients. Specific sedative drugs must be chosen by the dentist that can be used safely and effectively on these patients. This article focuses on a select number of these drugs, specific medical and pharmacologic challenges presented by adult special needs patients, and techniques to safely administer oral minimal and moderate sedation.
33. Colangelo, G. A. (2009). **"Innovations to improve oral health care access."** *Dent Clin North Am* **53**(3): 591-608.
Improving access to oral health care requires an understanding of the social, cultural, political, financial, and manpower factors that influence access. Armed with this knowledge, individuals and organizations desiring to improve access can innovate to change public policy, garner resources, create clinical programs, and expand public health interventions as demonstrated by the examples in this article. This article highlights past and contemporary innovations that have improved access, or have the potential to improve access to oral health care. These innovations are grouped into six categories: the dental profession, public health, community-based care delivery, oral health care funding, dental education, and evidence-based dentistry.
34. Cook, I. J. (2009). **"Oropharyngeal dysphagia."** *Gastroenterol Clin North Am* **38**(3): 411-431.
Although the aging process per se can produce measurable changes in the normal oropharyngeal swallow, these changes alone are rarely sufficient to cause clinically apparent dysphagia. The causes of oropharyngeal dysphagia in the elderly are predominantly neuromyogenic, with the most common cause being stroke. The evaluation of oropharyngeal dysphagia in the elderly involves early exclusion of structural abnormalities, detection of aspiration by videofluoroscopy which might dictate early introduction of nonoral feeding, and exclusion of underlying systemic and neuromyogenic causes that have specific therapies in their own right. Such conditions include Parkinson disease, myositis, myasthenia, and thyrotoxicosis. Management is best delivered by a multidisciplinary team involving physician, speech pathologist, nutritionist and, at times, a surgeon.

35. Coolidge, T., L. J. Heaton, et al. (2009). **"The challenge of sedation with adolescents: case studies and clinical recommendations."** SAAD Dig 25: 29-36.
Adolescent dental patients pose a unique challenge to providers, particularly when intravenous sedation is introduced to the treatment plan. Surveys show many adolescents are afraid of the dentist. Five to six per cent overall are fearful of dental injections and may avoid care or have irregular attendance. At the same time, adolescents may assert their independence by refusing to cooperate with providers' and parents' requests even while accepting that the goal of better health is reasonable. Successful treatment of--and rapport with--the adolescent dental patient, however, can ensure that adolescents' oral needs are met. Successful providers recognise that adolescents alternate between childlike and mature coping strategies during the course of dental treatment. Identifying an adolescent's current coping style can help the dental team select appropriate strategies to help treatment proceed more smoothly for the adolescent and clinical team. Working with adolescents' individual coping styles, rather than expecting consistently adult behaviour, will ideally help decrease frustration and improve treatment outcome.
36. Cortinas-Saenz, M., L. Martinez-Gomez, et al. (2009). **"Results of a major ambulatory oral surgery program using general inhalational anesthesia on disabled patients."** Med Oral Patol Oral Cir Bucal 14(11): e605-611.
OBJECTIVES: To assess the demographic characteristics and comorbidities of the group to be studied, as well as various quality indicators of a Major Ambulatory Surgery (MAS) program. Quantification of the surgical-anesthetic incidents. STUDY DESIGN: We aimed to perform a retrospective and descriptive analysis of disabled patients who had received oral ambulatory surgery under general anesthesia. Data obtained from the clinical history and telephone interview included the demographic characteristics, socioeconomic status, previous dental history, cause of the mental disability, degree of mental retardation, comorbidity measured according to the scale of the American Society of Anesthesiologists (ASA), anesthesia or preoperative surgical treatments, level of analgesia, length of stay, incidents in the Resuscitation Ward, the rate of substitution, suspensions, patients admitted, complications and the degree of patient satisfaction. RESULTS: We included 112 oral surgery procedures performed on disabled patients who were treated under general inhalational anesthesia as part of MAS during the years 2006-2007. During this period, 577 restorations, 413 extractions, 179 sealants, 102 pulpectomies, 22 root canal treatments, 17 gingivectomies and 3 frenectomies were performed. A total of 75% (78 cases) of the patients had coexisting medical pathology. The average surgery time per patient was 72.69 +/- 29.78 minutes. The rate of replacement was 100%. The rate of suspension was 1.92%. The percentage of patients readmitted was 1.92%, due to significant bleeding in the mouth, which did not require treatment and the patients were discharged from hospital 24 hours after being admitted. The rate of patients who required re-hospitalization was 3.84%. CONCLUSIONS: The MAS performed in this group, despite being on patients with high comorbidity resulted in only a low number of medical incidents reported.
37. Craig, R. G. and P. Kotanko (2009). **"Periodontitis and the end-stage renal disease patient receiving hemodialysis maintenance therapy."** Compend Contin Educ Dent 30(8): 544, 546-552.
Atherosclerotic complications, including myocardial infarction and stroke, are highly prevalent and associated with increased systemic inflammation in patients who have end-stage renal disease (ESRD) and are receiving renal hemodialysis maintenance therapy. In the general population, an increasing body of evidence suggests periodontitis can contribute to systemic inflammation and may contribute to atherosclerotic complications. In addition, results of recent interventional trials suggest effective periodontal therapy may decrease systemic inflammation as well as endothelial dysfunction, an early predictor of atherosclerotic complications. Because moderate-to-severe periodontitis appears to be highly prevalent in the renal hemodialysis population, effective periodontal therapy may reduce systemic inflammation and thereby become a treatment consideration for this population. This article will acquaint dental practitioners with ESRD and the association between systemic inflammation and mortality. Also discussed are the possible contributions of destructive periodontal diseases to systemic inflammation and the dental management of patients receiving renal replacement therapies.
38. Cune, M. S., H. Strooker, et al. (2009). **"Dental implants in persons with severe epilepsy and multiple disabilities: a long-term retrospective study."** Int J Oral Maxillofac Implants 24(3): 534-540.
PURPOSE: A retrospective study on the performance of endosseous implants in a population of patients with severe epilepsy and additional motor and/or intellectual impairments was performed. MATERIALS AND METHODS: All residents of an inpatient center for persons affected by severe, refractory epilepsy and multiple disabilities who received endosseous implants between 1991 and April 2007 were included in the study. Implant survival was analyzed using the Kaplan-Meier method. A subset of patients who were treated between 1991 and 2004 was invited to participate in a clinical and radio?graphic evaluation in 2004 and 2005. RESULTS: A total of 61 patients were treated between 1991 and April 2007 (n=134 implants). Three of these implants in three different patients failed during the observation period, demonstrating an estimated probability of functional implant survival of 97.6% (SE 1.4%) after 16 years. In patients who were seen during the clinical evaluation in 2004 (n=76 implants), only mild inflammation of the peri-implant mucosa was generally observed (Gingival-Bleeding Index=1), despite the fact that

the level of oral hygiene was considered inadequate around 55 of 76 implants (72%). Obvious signs of drug-induced gingival hyperplasia in relation to the implants were not observed. Probing depths averaged approximately 2 mm. Stable marginal bone levels were observed on the radiographs. CONCLUSIONS: Dental implant treatment in a population of patients with severe epilepsy and additional disabilities seems to be a viable treatment option. Implant loss is rare. Although adequate plaque control was not feasible in all patients, marginal bone levels remained stable.

39. Cunha, B. A., A. A. D'Elia, et al. (2010). "**Viridans streptococcal (*Streptococcus intermedius*) mitral valve subacute bacterial endocarditis (SBE) in a patient with mitral valve prolapse after a dental procedure: the importance of antibiotic prophylaxis.**" *Heart Lung* 39(1): 64-72.
BACKGROUND: Subacute bacterial endocarditis (SBE) is an infection of the heart involving damaged valves or endothelium. The most common organisms causing SBE are the viridans streptococci. Viridans streptococci differ in their propensity to cause SBE, which is related to the ability to adhere to damaged heart valves and endothelium, which is a function of extracellular matrix production. *Streptococcus intermedius* is a member of the *S. anginosus* group. *S. intermedius* is one of the many strains of viridans streptococci and a rare cause of SBE. SBE may result following a high-grade, sustained viridans streptococcal bacteremia in patients with predisposing cardiac lesions. Because viridans streptococci are relatively avirulent pathogens in normal hosts, they usually present as SBE. Some strains of viridans streptococci are inherently more virulent (eg, *S. intermedius*) and clinically resemble *S. lugdunensis* or *S. aureus*. METHODS: We report a case of *S. intermedius* SBE in a patient with mitral valve prolapse (MVP). Throughout the patient's life, she received antibiotic prophylaxis for dental procedures and never developed SBE. Because of changes in endocarditis prophylaxis guidelines in 2007, recommending no prophylaxis for dental procedures in patients with MVP, she did not receive prophylaxis for a dental procedure 3 months before admission. The change in prophylaxis recommendations was based on the relatively low incidence of endocarditis with certain cardiac lesions. The recommendations were also based on concern for antibiotic resistance from widespread antibiotic use for antibiotic prophylaxis. There has been no appreciable increase in penicillin resistance, and antimicrobial resistance is not an important consideration among the viridans streptococci. The incidence of SBE is not high after dental procedures in patients with MVP, but if SBE occurs, it may result in serious consequence for the patient. RESULTS: In this case, the patient developed *S. intermedius*, mitral valve SBE complicated by a cerebral vascular accident, and embolic occlusion of her leg. She was given optimal antibiotic treatment with ceftriaxone 2 g (intravenously) every 24 hours plus gentamicin 120 mg (intravenously) every 24 hours (synergy dose) but failed to respond to antimicrobial therapy. Although her *S. intermedius* bacteremia was rapidly cleared with antimicrobial therapy, sterilization of her vegetation was not accomplished, and during therapy, the size of her cardiac vegetation actually increased in size. Because of therapeutic failure despite optimal antibiotic therapy, the increasing size of her vegetation necessitated mitral valve replacement, which the patient underwent. Reasons for apparent/real antibiotic failure include inappropriate antimicrobial therapy, inadequately dosed antimicrobial therapy, antibiotic "tolerance," or increased pathogen virulence. Her strain of *S. intermedius* was sensitive to all antibiotics and not due to a "tolerant strain", i.e., her minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) were the same (<0.25 microg/mL). CONCLUSION: In this case, despite optimal antimicrobial therapy, and in the absence of resistance/tolerance, therapeutic failure was best explained on the basis of *S. intermedius* virulence. The take-home lesson for clinicians is that it is better to err on the side of antibiotic prophylaxis even in patients with low-risk cardiac lesions. Failure to administer antibiotic prophylaxis for dental procedures may result in SBE and have disastrous consequences for the patient, which, in this case, resulted in a cerebral vascular accident, embolic occlusion of the leg, and mitral valve replacement. In terms of virulence in patients with endocarditis, *S. intermedius* may resemble *S. lugdunensis*.
40. da Fonseca, M. A. (2009). "**Substance use disorder in adolescence: a review for the pediatric dentist.**" *J Dent Child (Chic)* 76(3): 209-216.
Substance use during puberty has become a serious public health issue with significant morbidity and mortality in many countries. Approximately half of American youth have tried an illicit substance by the time they graduate from high school. Drug addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use. Substance use disorders are maladaptive patterns of use accompanied by clinically significant impairment or distress, causing reduced functioning in major areas of life, risk-taking behavior, exposure to hazardous situations, and an increase in the likelihood of legal problems due to possession. In 2008, there was an annual prevalence of drug use of approximately 7% for eighth graders, 11% for 10th graders, and 18% for 12th graders. The pediatric dentist is in a good position to help prevent and detect suspicious cases of substance use because of the age of patients seen in the pediatric dental practice as well as the many behavioral and oral aspects present in adolescents who use illicit substances.
41. Dasheiff, R. M. and R. Finn (2009). "**Clinical foundation for efficient treatment of obstructive sleep apnea.**" *J Oral Maxillofac Surg* 67(10): 2171-2182.
Only a few decades ago, the entity known as obstructive sleep apnea (OSA) was unknown and untreated. Now, there is a rush to put literally millions of Americans on continuous positive airway pressure devices. Community practice

standards are changing yearly under pressure from strong forces based on economic incentives for industry, government, and physicians, independent of the actual medical evidence supporting treatment and efficacy. Medicare has lowered the diagnostic threshold for diagnosis and reimbursement; the International Classification of Sleep Disorders, Revision 2 (2005) has allowed OSA to be diagnosed exclusively by a laboratory test without the patient having clinical symptoms of excessive daytime sleepiness; and industry is poised to have the public buy computer-assisted continuous positive airway pressure machines without need of a physician prescription. Because of this paradigm shift away from physician-directed diagnosis and treatment, this article will critically evaluate the present state of medical evidence regarding the clinical foundation for treatment of OSA.

42. Davis, M. J. (2009). **"Issues in access to oral health care for special care patients."** Dent Clin North Am **53**(2): 169-181, vii.
Access to oral health care for persons with special health care needs is quite limited. Psychologic, economic, and physical barriers exist that prevent these patients, who may have complex medical histories and physical or psychologic disabilities, from accessing appropriate continuing dental care. There are ways to surmount each of these barriers, typically with both positive and negative aspects that must be considered. Education of the health care professionals, the patients, government officials, third-party payers, and colleagues in all aspects of health care, is needed. The ultimate answer is education of and cooperation by all concerned, including the patients and caretakers.
43. de Mello, A. L. and D. M. Padilha (2009). **"Oral health care in private and small long-term care facilities: a qualitative study."** Gerodontology **26**(1): 53-57.
OBJECTIVE: Elderly people who are institutionalised receive qualified care. Among the services supplied, oral health care has not always been a priority. The aim of this study was to identify the characteristics of oral health care provided to the elderly residents in long-term care facilities (LTC) in Porto Alegre/RS city. METHODS: Twelve private and small-size LTCs (less than 20 residents) participated in this study. All supervisors and 36 carers were interviewed. The data obtained were organised according to the offer of oral health under the following categories: responsibility for oral care, oral care routines, difficulties carrying out oral care routines. RESULTS: The procedures used most often in order of frequency were tooth brushing, prostheses cleaning, use of mouthwashes, soaking of prostheses and cleaning of the tongue. Among the difficulties mentioned were the high cost of dental assistance, the lack of co-operation both by family members and by the elderly themselves, the oral and general health status of the elderly and the limited time available for carers to carry out the tasks. Oral care is conducted empirically, and the responsibility is left to the carers. CONCLUSIONS: Analysis of the statements given reveals that oral care does not follow any kind of protocol or standardisation. The persistence of this situation could lead to unsatisfactory oral health care in private and small LTC facilities.
44. Delucia, L. M. and E. L. Davis (2009). **"Dental students' attitudes toward the care of individuals with intellectual disabilities: relationship between instruction and experience."** J Dent Educ **73**(4): 445-453.
This study examined the relationship between didactic instruction related to special needs patients and dental students' expectations of and reported comfort levels in treating those with intellectual disabilities. The relationship between students' experience with individuals with intellectual disabilities and their expectations and comfort levels was also assessed. Third-year students were surveyed immediately before and one week, six months, and one year after a lecture on management of patients with developmental disabilities. Students indicated their previous experience with individuals with intellectual disabilities, assessment of their general capabilities (i.e., life function skills) and dental capabilities, and current and anticipated comfort levels related to their treatment. Repeated measures ANOVA indicated significantly higher expectations of general and dental capabilities after instruction ($p < 0.05$), but no change in comfort levels. At one-year follow-up, students' expectations were still significantly higher than at baseline. Regression analyses indicated significant positive relationships between experience and baseline comfort levels ($p < 0.05$), but no significant relationship between experience and expectations of general or dental capabilities. Based on these findings and review of the literature, it is recommended that curricula include experiential learning with reflective components in order to develop students' comfort level in treating special needs populations.
45. Demko, C. A., D. Sawyer, et al. (2009). **"Prevalence of oral lesions in the dental office."** Gen Dent **57**(5): 504-509.
Comprehensive head and neck examinations provide the best opportunity to carefully evaluate the oral cavity for the presence of disease. For this study, 40 dental professionals in 20 dental offices in Northern Ohio received a three-hour standardization course on oral pathology, performed head and neck examinations on all adult patients over a three-week period, and recorded the presumptive identification of all observed oral lesions. Lesion-positive and lesion-negative patients were compared on patient age, gender, tobacco usage, denture status, and the type of provider (dentist or hygienist) making the observations. Providers performed head and neck examinations on 3,182 adults, 847 (26.7%) of whom had 1,073 lesions. Lesion-positive and negative patients were similar in terms of age and gender, although patients with lesions were almost twice as likely to use tobacco and more than 2.5 times as

likely to wear dentures. Most lesions were classified as white (36.6%), followed by red (17%), ulcerated (14%), pigmented (14%), and soft tissue enlargements (12%). Leukoplakia and erythroplakia were observed in 1% of the screened adults, although patients were not aware of the presence of these conditions. Overall, the prevalence of lesions in dental patients (26.7%) was similar to national estimates (27.9%), but the prevalence of some specific lesions varied.

46. Dewan, K., K. Bishop, et al. (2009). **"Management of patients on warfarin by general dental practitioners in South West Wales: continuing the audit cycle."** *Br Dent J* 206(4): E8; discussion 214-215.
AIMS: To ascertain the current management protocols of patients on warfarin by general dental practitioners (GDPs) in South West Wales and to compare these findings with current guidelines and the results from a previous audit published in 2003. MATERIALS AND METHODS: A questionnaire similar to that used in the first audit was sent to 447 GDPs in South West Wales. In addition, questions were included on factors which might affect international normalised ratio (INR), the timing of pre-operative INR assessment and the risk of bleeding associated with implant surgery. GDPs' details were derived from the online GDC database of registered dental practitioners. Registered specialists and GDPs who practised only orthodontics were excluded. RESULTS: Of the 447 questionnaires distributed, 332 (74%) were returned. Eight percent (n = 26) of the respondents did not treat patients on warfarin. Two hundred and forty-seven respondents (74%) considered implant placement as a procedure with high risk of bleeding, with inferior dental block, sub-gingival restorations and sub-gingival debridement receiving a lower response (45%, 28% and 12%, respectively). When planning a high risk procedure, 206 respondents (63%) indicated they would seek advice from a cardiologist or general medical practitioner; none of the respondents would advise the patient to reduce their warfarin dose, while 1% indicated they would ask the patient to stop taking warfarin without seeking any medical opinion. A total of 278 respondents (84%) stated they would check the INR before treatment and of these, 214 (65%) indicated they would do so within 24 hours of treatment and 60 (18%) within 48 hours. Ten respondents said they would not normally check INR. One hundred and twelve respondents (34%) considered 2.5 as the safe upper INR limit for performing high risk procedures, 21 (6%) considered an INR of between 1 and 2 as the safe limit, 99 (30%) considered an INR of 3 as safe, 36 (10%) considered 3.5 as safe and 36 (10%) considered an INR of 4 as safe. Finally, 286 respondents (86%) considered drug interactions and 236 (71%) considered alcohol as significant influencing factors on INR. CONCLUSIONS: The findings demonstrate a broad change in practice towards the new recommendations produced in 2001 but also highlight that further education and support may be necessary, as well as greater consistency in published guidelines.
47. Donaldson, M. and J. H. Goodchild (2009). **"Use of bispectral index system (BIS) to Monitor Enteral Conscious (moderate) sedation during general dental procedures."** *J Can Dent Assoc* 75(10): 709.
Although dental board regulations for the provision of in-office enteral conscious (oral) sedation vary widely with respect to training and pharmacologic strategies, they agree on the use of drugs that are inherently safe, the use of pulse oximetry and the availability of emergency equipment, including pharmacologic antagonists. Patient safety is of greatest concern and is best addressed by appropriate selection of patients, adequate training of personnel and appropriate monitoring of patients. Readings from bispectral index system (BIS) monitors, which use electroencephalographic signals, correlate accurately with depth of sedation during nondissociative general anesthesia of adults and children in the operating room setting. The usefulness of such monitoring as an adjunct to other forms of monitoring of in-office enteral sedation in the dental setting may represent the next important application of this tool, adding a further level of safety for the patient and another level of predictability for the practitioner. This paper reviews the current evidence supporting this new technique, presenting data from 20 procedures in which BIS monitoring during in-office enteral sedation was employed in a community dental practice.
48. Falsetti, P., C. Acciai, et al. (2009). **"Oropharyngeal dysphagia after stroke: incidence, diagnosis, and clinical predictors in patients admitted to a neurorehabilitation unit."** *J Stroke Cerebrovasc Dis* 18(5): 329-335.
OBJECTIVE: We analyzed patients with stroke in a neurorehabilitation unit to define incidence of dysphagia, compare clinical bedside assessment and videofluoroscopy (VFS), and define any correlation between dysphagia and clinical characteristic of patients. METHODS: In all, 151 consecutive inpatients with recent ischemic or hemorrhagic stroke were enrolled. RESULTS: Dysphagia was clinically diagnosed in 62 of 151 patients (41%). A total of 49 patients (79% of clinically dysphagic patients) underwent VFS. Six patients clinically suggested to be dysphagic had a normal VFS finding. The correlation between clinical and VFS diagnosis of dysphagia was significant (r = 0.6505). Penetrations and aspirations were observed, respectively, in 42.8% and 26.5% of patients with dysphagia, with 12.2% classified as silent. Lower respiratory tract infections were observed in 5.9%, more frequently in patients with dysphagia (30%). Dysphagia was not influenced by type of stroke. Cortical stroke of nondominant side was associated with dysphagia (P = .0322) and subcortical nondominant stroke showed a reduced frequency of dysphagia (P = .0008). Previous cerebrovascular disease resulted associated to dysphagia (P = .0399). Patients with dysphagia had significantly lower functional independence measurement (FIM) and level of cognitive functioning on

admission and lower FIM on discharge, longer hospital stay, and more frequent malnutrition, and they were more frequently aphasic and dysarthric. Percutaneous endoscopic gastrostomy was used in 18 of 151 patients (11.9%) (41.8% of patients with VFS-proved dysphagia). CONCLUSIONS: Dysphagia occurs in more than a third of patients with stroke admitted to rehabilitation. Clinical assessment demonstrates good correlation with VFS. The grade of dysphagia correlates with dysarthria, aphasia, low FIM, and level of cognitive functioning. Large cortical strokes of nondominant side are associated with dysphagia.

49. Fantasia, J. E. (2009). "**Bisphosphonates--what the dentist needs to know: practical considerations.**" *J Oral Maxillofac Surg* **67**(5 Suppl): 53-60.
50. Fischer, D. J., J. B. Epstein, et al. (2009). "**Multiple sclerosis: an update for oral health care providers.**" *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* **108**(3): 318-327.
Multiple sclerosis (MS) is a chronic, inflammatory, demyelinating disease of the central nervous system. The disease mostly affects young adults and is increasing in prevalence and incidence. Multiple sclerosis is characterized by periods of activity and remission which, after numerous relapses, cause permanent neurologic deficits. Diagnosis of MS is based on patient history and clinical examination supplemented by the findings of radiologic and laboratory tests. Numerous motor and sensory disturbances occur in MS and may present in the orofacial region. This medical management update highlights issues that are important to the oral health care provider, including orofacial manifestations of MS and dental considerations for patients with MS.
51. Formicola, A., H. Bailit, et al. (2009). "The Dental Pipeline program's impact on access disparities and student diversity." *J Am Dent Assoc* **140**(3): 346-353.
BACKGROUND: The Robert Wood Johnson Foundation, Princeton, N.J., the W.K. Kellogg Foundation, Battle Creek, Mich., and The California Endowment, Los Angeles, collaborated in funding a five-year (2002-2007) national demonstration program (Pipeline, Profession & Practice: Community-Based Dental Education [Dental Pipeline]) to reduce dental care access disparities. Fifteen dental schools were selected to participate in the Dental Pipeline program. The goals were to have senior students spend more time in community sites providing care to underserved patients; to prepare students to treat diverse, low-income patients; and to increase enrollment of underrepresented minority (URM) students. METHODS: A national program office at Columbia University in New York City administered the Dental Pipeline program. The participating dental schools developed networks of community clinics and practices for student rotations, established courses in cultural competency and public health and implemented new programs to recruit URM students. RESULTS: The average time senior students spent in community clinics and practices increased from 10 to 50 days; all schools developed courses in cultural competency and public health; and enrollment of URM students increased 54.4 percent (excluding two of the schools) versus 16 percent in non-Dental Pipeline schools. CONCLUSIONS: On average, the participating dental schools were successful in meeting program goals.
52. Friedlander, A. H., M. Mahler, et al. (2009). "**Parkinson disease: systemic and orofacial manifestations, medical and dental management.**" *J Am Dent Assoc* **140**(6): 658-669.
BACKGROUND: More than 1.5 million Americans have Parkinson disease (PD), and this figure is expected to rise as the population ages. However, the dental literature offers little information about the illness. TYPES OF STUDIES REVIEWED: The authors conducted a MEDLINE search using the key terms "Parkinson's disease," "medical management" and "dentistry." They selected contemporaneous articles published in peer-reviewed journals and gave preference to articles reporting randomized controlled trials. RESULTS: PD is a progressive neurodegenerative disorder caused by loss of dopaminergic and nondopaminergic neurons in the brain. These deficits result in tremor, slowness of movement, rigidity, postural instability and autonomic and behavioral dysfunction. Treatment consists of administering medications that replace dopamine, stimulate dopamine receptors and modulate other neurotransmitter systems. CLINICAL IMPLICATIONS: Oral health may decline because of tremors, muscle rigidity and cognitive deficits. The dentist should consult with the patient's physician to establish the patient's competence to provide informed consent and to determine the presence of comorbid illnesses. Scheduling short morning appointments that begin 90 minutes after administration of PD medication enhances the patient's ability to cooperate with care. Inclination of the dental chair at 45 degrees, placement of a bite prop, use of a rubber dam and high-volume oral evacuation enhance airway protection. To avoid adverse drug interactions with levodopa and entacapone, the dentist should limit administration of local anesthetic agents to three cartridges of 2 percent lidocaine with 1:100,000 epinephrine per half hour, and patients receiving selegiline should not be given agents containing epinephrine or levonordefrin. The dentist should instruct the patient and the caregiver in good oral hygiene techniques.
53. Gao, J., L. Chen, et al. (2009). "**A case-control study on etiological factors involved in patients with burning mouth syndrome.**" *J Oral Pathol Med* **38**(1): 24-28.
OBJECTIVE: To evaluate and analyze the risk factors for burning mouth syndrome (BMS). METHODS: Eighty-seven consecutive patients with BMS and a randomly selected control group (n = 82) were comprehensively investigated

with a self-designed questionnaire, Self-rating Anxiety Scale (SAS) and Self-rating Depression Scale (SDS). A complete blood count and serum sex hormone were also examined in patients with BMS and control subjects. All the data obtained were transferred to a data bank and analyzed statistically in SPSS 11.5 for windows. RESULTS: No statistical difference between the BMS group and the control group was found in blood analyses including white blood cell count, red blood cell count, hemoglobin and platelet count. Among the menopausal or postmenopausal women with BMS, the follicle stimulating hormone (FSH) level was significantly higher, but the estradiol level was significantly lower. The BMS group reported adverse life events more frequently than the control group. Patients with BMS significantly exhibited symptoms of somatization, and both the scores of anxiety, depression in patients with BMS were higher than those of the control group ($P < 0.05$). A regression equation which included six variables had been established by using logistic regression analysis, indicating that the habit of tongue thrusting, lip sucking, periodontitis, smoking, outcome of recent medication, depression were the principal risk factors, among which tongue thrusting was the most significant. CONCLUSION: Our study indicated that BMS may be of psychological origin, and the measures such as refraining from oral parafunctional activities, removing local irritating factors, stopping smoking, good mental health status could help in the prevention of BMS.

54. Gardner, K. (2009). **"An update on oral hygiene products and techniques."** *Dent Update* 36(7): 439; author reply 439.
55. Garon, B. R., T. Sierzant, et al. (2009). **"Silent aspiration: results of 2,000 video fluoroscopic evaluations."** *J Neurosci Nurs* 41(4): 178-185; quiz 186-177.
The purpose of this retrospective study of aspiration and the lack of a protective cough reflex at the vocal folds (silent aspiration) was to increase the awareness of nursing staffs of the diagnostic pathology groups associated with silent aspiration. Of the 2,000 patients evaluated in this study, 51% aspirated on the video fluoroscopic evaluation. Of the patients who aspirated, 55% had no protective cough reflex (silent aspiration). The diagnostic pathology groups with the highest rates of silent aspiration were brain cancer, brainstem stroke, head-neck cancer, pneumonia, dementia/Alzheimer, chronic obstructive lung disease, seizures, myocardial infarcts, neurodegenerative pathologies, right hemisphere stroke, closed head injury, and left hemisphere stroke. It is of high concern that the diagnostic groups identified in this research as having the highest risk of silent aspiration be viewed as "red-flag" patients by the nursing staff caring for them. Early nursing dysphagia screens, with close attention to the clinical symptoms associated with silent aspiration, and early referral for formal dysphagia evaluation are stressed.
56. Glassman, P. (2009). **"A review of guidelines for sedation, anesthesia, and alternative interventions for people with special needs."** *Spec Care Dentist* 29(1): 9-16.
There are significant numbers of people in our society with disabilities or other special needs. Their number and percentage are growing, in some cases, dramatically. Many of these individuals need special support in order to receive dental treatment. Modalities that can be used to provide dental treatment include pharmacological approaches to produce various levels of sedation or anesthesia. In addition to the use of medications, there are also techniques that employ behavioral or psychological interventions. In some circumstances, physical support or protective stabilization is used. There are also social supports and prevention strategies that can impact the individual's preparation for and need for dental treatment. This review of the numerous guidelines, which have been published for the use of sedation and anesthesia to facilitate the delivery of dental treatment, indicates that there are fewer guidelines for the inclusion of behavioral or psychological interventions or for the incorporation of social supports or prevention strategies. In addition, most published guidelines do not include considerations for people with special needs. There is a need for increased research and documentation of combined treatment modalities, and these combined approaches need to be incorporated into guidelines for patient care for people with special needs. There is also a need to advocate for reimbursement systems that support all appropriate treatment options so that practitioners can be free to recommend treatment options based on the efficacy and safety of each option.
57. Glassman, P. and C. Miller (2009). **"Social supports and prevention strategies as adjuncts and alternatives to sedation and anesthesia for people with special needs."** *Spec Care Dentist* 29(1): 31-38.
People with special needs are assuming a more prominent place in our society. The number of people living in communities with medical, physical, and psychological conditions is increasing dramatically. In spite of the advances that people with special needs have made in recognition of their right to live in society and access services open to other people, their oral health is still significantly poorer than that of other groups. There are a number of modalities that can complement or replace pharmacological interventions and allow individuals to have dental treatment in a dental office or clinic. These include behavioral or psychological interventions and social support and prevention strategies. Social supports include care management and integration of oral health services with general health and social service systems. Preventive programs using modern "medical model" oral health prevention strategies also have the potential to reduce the burden of disease among people with special needs and therefore reduce the need for dental procedures. A social support system using community-based Dental Hygienists acting as Dental

Coordinators, is described along with outcomes demonstrating improved oral health for people with special needs living in community residential care facilities. Combined social support systems and community prevention strategies have the potential to reduce the need for pharmacological interventions in order to maintain oral health in populations of people with special needs. Social supports and modern preventive strategies must be included in the range of options available in communities in order to improve and maintain oral health for people with special needs.

58. Gonzalez, F. (2009). **"Diphenhydramine may be useful as a palliative treatment for patients dying with Parkinson's disease and tremors: a case report and discussion."** *Am J Hosp Palliat Care* **26**(6): 474-475.
Diphenhydramine is an antihistamine with anticholinergic properties, which has been used for the treatment of Parkinson disease (PD) prior to the development of newer agents with better side-effect profiles. However, most of these agents are given orally. Unfortunately, at the time of death, patients with paralysis agitans are no longer able to swallow and they can experience worsening of their tremors. We report the case of 1 patient with congestive heart failure (CHF) and PD who was unable to swallow and developed uncontrollable tremors 24 hours prior to death and whose tremors were successfully treated with diphenhydramine. We feel that in preimminent patients who cannot swallow or may not have perioral endoscopic gastrostomy (PEG)s or feeding tubes, parenteral diphenhydramine may be an appropriate palliative intervention to reduce tremors.
59. Greenwood, M. (2009). **"Medical emergencies in dental practice: 2. Management of specific medical emergencies."** *Dent Update* **36**(5): 262-264, 266-268.
In the second of two papers on the diagnosis and management of medical emergencies, the measures needed to manage specific medical emergencies are discussed. Each emergency requires a correct diagnosis for effective and safe management. Signs and symptoms are highlighted at the beginning of each section describing patient management. The basis of management in contemporary dental practice avoids the intravenous route of drug administration, where drugs are required. CLINICAL RELEVANCE: All dental practitioners require a knowledge of the management of specific medical emergencies.
60. Griffin, S. O., L. K. Barker, et al. (2009). **"Oral health needs among adults in the United States with chronic diseases."** *J Am Dent Assoc* **140**(10): 1266-1274.
BACKGROUND: Oral and dental diseases may be associated with other chronic diseases. METHODS: Using data from the National Health and Nutrition Examination Survey 1999-2004, the authors calculated the prevalence of untreated dental diseases, self-reported poor oral health and the number of missing teeth for adults in the United States who had certain chronic diseases. The authors used multivariate analysis to determine whether these diseases were associated with indicators of dental disease after controlling for common risk factors. RESULTS: Participants with rheumatoid arthritis, diabetes or a liver condition were twice as likely to have an urgent need for dental treatment as were participants who did not have these diseases. After controlling for common risk factors, the authors found that arthritis, cardiovascular disease, diabetes, emphysema, hepatitis C virus, obesity and stroke still were associated with dental disease. CONCLUSIONS: The authors found a high burden of unmet dental care needs among participants with chronic diseases. This association held in the multivariate analysis, suggesting that some chronic diseases may increase the risk of developing dental disease, decrease utilization of dental care or both. CLINICAL IMPLICATIONS: Dental and medical care providers should work together to ensure that adults with chronic diseases receive regular dental care.
61. Guggenheimer, J. and P. A. Moore (2009). **"The patient with asthma: implications for dental practice."** *Compend Contin Educ Dent* **30**(4): 200-202, 205-207; quiz 208, 210.
A history of asthma is reported commonly by adult dental patients and may be more prevalent in children. An acute episode of asthma in the dental office may be precipitated by extrinsic factors such as inhaled allergens, as well as intrinsic factors such as fear or anxiety. An asthma episode should be considered a medical emergency and must be treated promptly by inhalation of a bronchodilating agent. A history of asthma in the dental patient should alert the dentist to implement strategies that may prevent an acute attack and to be prepared to manage this potentially life-threatening medical emergency appropriately. The chronic use of bronchodilating inhalers and/or glucocorticoids for the management of asthma can increase the likelihood of oral candidiasis, particularly in patients who have additional risk factors such as smoking, denture use, or the use of xerostomic medications.
62. Guzeldemir, E. (2009). **"The role of oral hygiene in a patient with idiopathic thrombocytopenic purpura."** *Int J Dent Hyg* **7**(4): 289-293.
OBJECTIVE: Idiopathic thrombocytopenic purpura (ITP) is an acquired disease of children and adults defined as isolated thrombocytopenia with no clinically apparent associated conditions or other causes of thrombocytopenia. Oral manifestations are gingival bleeding, petechiae, mucocutaneous bleeding and haemorrhage into tissues. CASE DESCRIPTION AND RESULTS: An 11-year-old Turkish female was referred to the periodontology clinic by the

paediatric haematologist for the treatment of spontaneous gingival bleeding, gingival oedematous enlargement and hyperaemia. She was diagnosed as chronic ITP 6 months ago and she was told not to brush her teeth. She was also complaining with dull pain and oral malodor. She was motivated for oral hygiene and after consulting with paediatric haematologist, under the proper circumstances, dental plaque and calculus were removed. Healing was uneventful. CONCLUSION: Oral hygiene motivation and dental plaque control is crucial in order to prevent gingival bleeding, inflammation and severe periodontal diseases in patients with haematologic disorders. Understanding of the oral findings is essential in the management of patients and close cooperation between patients' dentist and haematologist is needed. Dental consultation is essential for diagnosis and improvement of medical conditions. It is possible to obtain adequate oral hygiene with limited performance and haematologic disorders are not handicaps for dental/periodontal procedures under the proper circumstances.

63. Hamamoto, D. T. and N. L. Rhodus (2009). "**Methamphetamine abuse and dentistry.**" Oral Dis **15**(1): 27-37.
Methamphetamine is a highly addictive powerful stimulant that increases wakefulness and physical activity and produces other effects including cardiac dysrhythmias, hypertension, hallucinations, and violent behavior. The prevalence of methamphetamine use is estimated at 35 million people worldwide and 10.4 million people in the United States. In the United States, the prevalence of methamphetamine use is beginning to decline but methamphetamine trafficking and use are still significant problems. Dental patients who abuse methamphetamine can present with poor oral hygiene, xerostomia, rampant caries ('Meth mouth'), and excessive tooth wear. Dental management of methamphetamine users requires obtaining a thorough medical history and performing a careful oral examination. The most important factor in treating the oral effects of methamphetamine is for the patient to stop using the drug. Continued abuse will make it difficult to increase salivary flow and hinder the patient's ability to improve nutrition and oral hygiene. Local anesthetics with vasoconstrictors should be used with care in patients taking methamphetamine because they may result in cardiac dysrhythmias, myocardial infarction, and cerebrovascular accidents. Thus, dental management of patients who use methamphetamine can be challenging. Dentists need to be aware of the clinical presentation and medical risks presented by these patients.
64. Henry, R. G. and B. J. Smith (2009). "**Managing older patients who have neurologic disease: Alzheimer disease and cerebrovascular accident.**" Dent Clin North Am **53**(2): 269-294, ix.
Neurologic diseases represent some of the most common disabling and costly conditions in older age. Alzheimer disease and cerebrovascular accidents (strokes) are two of the most common neurologic conditions, and represent the leading causes of nursing home placement. Dental professionals will be caring for older patients who have age-associated neurologic diseases, including Alzheimer disease and stroke because of the increased longevity of the United States population coupled with improved survivorship of these conditions as a result of advanced medical diagnosis and treatment. Understanding the clinical manifestations of these two common, but distinctly different, neurologic conditions will enable dental professionals to provide safe and rational dental care.
65. Hoque, A. and M. McAndrew (2009). "**Use of botulinum toxin in dentistry.**" N Y State Dent J **75**(6): 52-55.
A growing number of dentists are providing botulinum toxin to patients. The research presented here outlines potential uses of Botox related to oral health and facial problems as compared to traditional treatment methods. The administration of Botox (historically done by dermatologists and neurologists) may fall under dentists' jurisdiction, as their training and knowledge encompasses the entire head and neck. A review is made of the literature, based on Ovid and PubMed searches, selecting articles describing the injection of botulinum toxin A in areas related to the oral cavity and the face, excluding cosmetic purposes.
66. Jaccarino, J. (2009). "**Treating the special needs patient with a developmental disability: cerebral palsy, autism and Down syndrome.**" Dent Assist **78**(6): 7-8, 10-11, 34 passim.
67. Jamal, B. T. and K. Herb (2009). "**Perioperative management of patients with myasthenia gravis: prevention, recognition, and treatment.**" Oral Surg Oral Med Oral Pathol Oral Radiol Endod **107**(5): 612-615.
Myasthenia gravis (MG) is an autoimmune disease characterized by weakness and fatigability of skeletal muscles, with improvement following rest. The disease was so named because of a frequently fatal outcome. As recently as 30 years ago, 25% of patients with MG died of the disease. Treatment advances have dramatically changed the expected outcome, and with appropriate therapy, most patients with MG can now lead normal lives and have a relatively normal life expectancy. In this article we review the pathophysiology of MG, its signs and symptoms, treatment, the perioperative evaluation and preparation for surgery, and the anesthetic consideration to enable clinicians better understand this disease entity and provide guidance in diagnosis and care of patients with MG.

68. Kanaa, M. D., J. M. Whitworth, et al. (2009). **"Articaine buccal infiltration enhances the effectiveness of lidocaine inferior alveolar nerve block."** *Int Endod J* **42**(3): 238-246.
 AIM: To compare mandibular tooth pulpal anaesthesia and reported discomfort following lidocaine inferior alveolar nerve block (IANB) with and without supplementary articaine buccal infiltration. METHODOLOGY: In this prospective randomized double-blind cross-over study, thirty-six healthy adult volunteers received two IANB injections of 2 mL lidocaine 2% with epinephrine 1 : 80,000 over two visits. At one visit, an infiltration of 2 mL of articaine 4% with epinephrine 1 : 100,000 was administered in the mucobuccal fold opposite a mandibular first molar. At the other visit, a dummy injection was performed. Injection discomfort was recorded on 100 mm visual analogue scales. Pulpal anaesthesia of first molar, premolar, and lateral incisor teeth was assessed with an electronic pulp tester until 45 min post-injection. A successful outcome was recorded in the absence of sensation on two or more consecutive maximal pulp tester stimulations. Data were analysed using McNemar and Student's t-tests. RESULTS: The IANB with supplementary articaine infiltration produced more success than IANB alone in first molars (33 volunteers vs. 20 volunteers respectively, $P < 0.001$), premolars (32 volunteers vs. 24 volunteers respectively, $P = 0.021$) and lateral incisors (28 volunteers vs. 7 volunteers respectively, $P < 0.001$). Buccal infiltration with articaine or dummy injection produced less discomfort than IANB injection ($t = 4.1$, $P < 0.001$; $t = 3.0$, $P = 0.005$ respectively). CONCLUSIONS: The IANB injection supplemented with articaine buccal infiltration was more successful than IANB alone for pulpal anaesthesia in mandibular teeth. Articaine buccal infiltration or dummy buccal infiltration was more comfortable than IANB.
69. Kikutani, T., F. Tamura, et al. (2009). **"The degree of tongue-coating reflects lingual motor function in the elderly."** *Gerodontology* **26**(4): 291-296.
 OBJECTIVES: The aim of this study was to examine the relation between the degree of tongue-coating and oral function. BACKGROUND: Tongue-coating is a moss-like deposit which forms over the tongue surface, and includes micro-organisms, food residues, and abrasive epithelia. It is considered that motor function of the tongue and lips and saliva secretion decrease in the aged and have some effect on the accumulation of tongue-coating. Although saliva secretion has been reported as a factor amongst these oral functions in contributing to tongue-coating, the correlation with the motor function of oral structures is unknown. SUBJECTS AND METHODS: The factors that contribute to the accumulation of tongue-coating were examined in 48 subjects of advanced age (mean age 80.8 +/- 7.8 years) with no severe levels of periodontal disease. Changes in the degree of tongue-coating were also examined after oral functional training in these subjects. The frequency of oral cleaning, status of oral hygiene, motor function of the tongue, and masticatory performance were examined as potential factors associated with the degree of coating. RESULTS: The results showed that tongue pressure and the frequency of oral diadochokinesis measured by pronouncing the single syllable 'ka' as an indicator were statistically significantly correlated with the degree of tongue-coating. Several factors in oral function improved with training, and also the degree of tongue-coating decreased in 27 subjects. CONCLUSION: These results suggest a correlation between the degree of tongue-coating and a reduction in lingual motor function and, in addition, possible improvement in level of coating by functional training of the tongue.
70. Klasser, G. D. and C. S. Greene (2009). **"Oral appliances in the management of temporomandibular disorders."** *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* **107**(2): 212-223.
 Various types of oral appliances (OAs) have been used for over half a century to treat temporomandibular disorders (TMDs), but there has been considerable debate about how OAs should be designed, how they should be used, and what they actually do therapeutically. However, there is enough information in the scientific literature at this time to reach some evidence-based conclusions about these issues. The main focus of this review is on the materials and designs of various OAs in terms of their proposed mechanisms of action and their claimed clinical objectives. Based on current scientific evidence, an analysis is presented regarding the role that OAs can or cannot play in the management of TMDs. Finally, the concept that OAs may be an effective treatment modality for some TMDs owing to their potential for acting as an elaborate placebo rather than any specific therapeutic mechanism is considered.
71. Koksai, T., I. Dikbas, et al. (2009). **"Alternative restorative approach for treatment of patient with extremely worn dentition."** *N Y State Dent J* **75**(5): 52-55.
 Changes in tooth structure, missing teeth and decreased vertical dimension of occlusion severely deteriorate the stomatognathic system. This case report describes the treatment of a patient with loss of vertical dimension due to severe wear of maxillary and mandibular teeth. An occlusal splint was used to create an optimum maxillomandibular relationship and to provide restorative space prior to restoration of the remaining teeth. The restoration was accomplished with a hybrid composite material. This treatment has been a less-expensive alternative to full-mouth, fixed porcelain/metal-porcelain restoration while conserving the remaining tooth tissue.

72. Kolahi, J. and M. Fazilati (2009). **"Bluetooth technology for prevention of dental caries."** Med Hypotheses **73**(6): 1067-1068.
Caries is caused when the pH at the tooth surface drops below 5.5. A miniaturized and autonomous pH monitoring nodes can be attached to the tooth surface, like a tooth jewel. This intelligent sensor includes three components: (a) digital micro pH meter, (b) power supply, (c) wireless communicating device. The micro pH meter facilitates long term tooth surface pH monitoring and providing real time feedback to the patients and dental experts. Power supply of this system will be microfabricated biocatalytic fuel cell (enzymatic micro-battery) using organic compounds (e.g. formate or glucose) as the fuel to generate electricity. When micro pH meter detects the pH lower than 5.5, wireless Bluetooth device sends a caution (e.g. "you are at risk of dental caries") to external monitoring equipment such as mobile phone or a hands-free heads. After reception of the caution, subjects should use routine brushing and flossing procedure or use a medicated chewing gum (e.g. chlorhexidine containing chewing gum) or rinse with a mouthwash.
73. Kullberg, E., M. Forsell, et al. (2009). **"Dental hygiene education for nursing staff."** Geriatr Nurs **30**(5): 329-333.
The aim of this study was to describe a new dental hygiene education program for nursing staff and to report experiences from the program at a nursing home in Stockholm, Sweden (2006). This strategy comprises 3 steps. The first is individual instruction for nursing staff about oral care for patients and hands-on training in toothbrushing technique using an electric toothbrush. The second step was small discussion groups of 4 to 8 nursing staff, led by a dental hygienist and a psychologist. The third step was a theoretical lecture focusing on the associations among dental hygiene, oral health, and general health among the elderly. During the dental hygiene education program, a negative attitude toward oral care was noted among members of the nursing staff, although they did consider oral care important for their patients. Increased self-confidence of staff in providing oral care was noted after completing the dental hygiene education program. Nursing staff members stated that they had received more detailed knowledge about oral care during the program. This dental hygiene education program appears to result in increased knowledge and interest in oral hygiene tasks among the nursing staff and may lead to improved dental hygiene among nursing home residents.
74. Kumar, H., N. Prabhu, et al. (2009). **"KBG syndrome: review of the literature and findings of 5 affected patients."** Oral Surg Oral Med Oral Pathol Oral Radiol Endod **108**(3): e72-79.
KBG syndrome is a rare, multiple congenital anomaly/mental retardation (MCA/MR) syndrome characterized by neurological disturbance, short stature, a distinct craniofacial appearance, and skeletal anomalies. It is likely to be autosomal dominant in nature with a wide range of expressivity in its clinical features. Dentally, macrodontia, particularly of the maxillary permanent central incisors is a common finding. The aim of this article was to review the familiar clinical presentations of this syndrome and to highlight previously unreported findings of generalized macrodontia and shovel-shaped incisors. Dental and clinical findings of 2 affected brothers with a 3-year follow-up of their dental progress following orthodontic treatment are outlined. Additionally, dental and clinical findings of an affected mother and her daughter, and another sporadic case are also presented.
75. Kumar, J. and R. Samelson (2009). **"Oral health care during pregnancy recommendations for oral health professionals."** N Y State Dent J **75**(6): 29-33.
Pregnancy is a unique time in a woman's life and is characterized by complex physiological changes. These changes can adversely affect oral health. Pregnancy is also an opportune time to educate women about preventing dental caries in young children, a common childhood problem. Although multiple studies have shown an association between periodontal infection and adverse pregnancy outcomes, such as premature delivery and low birth weight, recent randomized clinical trials conducted in the United States failed to show that treatment of periodontal disease during pregnancy improved birth outcomes. However, the studies confirmed the safety and effectiveness of providing oral health care during pregnancy. Pregnancy by itself is not a reason to defer routine dental care and necessary treatment for oral health problems. Diagnosis and treatment, including needed dental X-rays, can be undertaken safely during the first trimester of pregnancy. Needed treatment can be provided throughout the remainder of the pregnancy; however, the time period between the 14th and 20th week is considered ideal.
76. Kunz, J. S., B. Hemann, et al. (2009). **"Is there a link between gastroesophageal reflux disease and atrial fibrillation?"** Clin Cardiol **32**(10): 584-587.
BACKGROUND: Previous studies suggest a potential association between gastroesophageal reflux disease (GERD) and atrial fibrillation. OBJECTIVE: To explore the potential association between GERD and atrial fibrillation. MATERIALS AND METHODS: This was a retrospective study created from a database containing all health care encounters for patients who received ambulatory care in the National Capitol Area military health care system between January 1, 2001 and October 28, 2007. The study population included all subjects at least 18 years of age (n = 163 627). Our primary outcomes of interest were International Classification of Diseases, Ninth Revision (ICD-9) diagnoses of atrial fibrillation and GERD. RESULTS: Among 163 627 patients, 7992 (5%) had atrial fibrillation and 47 845 (29%) had GERD. The presence of GERD increased the relative risk (RR) of a diagnosis of atrial fibrillation (RR:

1.39, 95% confidence interval [CI]: 1.33-1.45). In sensitivity analyses, this relationship persisted after adjustment for cardiovascular disease risk factors (RR: 1.19, 95% CI: 1.13-1.25) and diagnoses known to be strongly associated with atrial fibrillation (RR: 1.08, 95% CI: 1.02-1.13). CONCLUSIONS: The presence of GERD is associated with an increased risk of a diagnosis of atrial fibrillation.

77. Kwak, Y. T., I. W. Han, et al. (2009). "**Associated conditions and clinical significance of awake bruxism.**" Geriatr Gerontol Int **9**(4): 382-390.
BACKGROUND: Awake bruxism is defined as an oral parafunctional activity that includes clenching and grinding of teeth during wakefulness. Confirming the possible related anatomy and the clinical significance of awake bruxism in geriatric hospitals is the aim of this study. METHODS: We analyzed the medical records of 503 patients who were admitted to hospital from April to June 2008. After the recognition of bruxism, the clinical, brain imaging studies and statistical parametric mapping (SPM) of brain single photon emission computed tomography were performed. RESULTS: In each disease group, five of 125 Alzheimer's disease (AD) patients (4.0%), three of 11 frontotemporal dementia (FTD) patients (27.3%), seven of 230 stroke patients (including two patients related to citalopram, 3.0%), one of 45 Parkinson's disease patients (2.2%) and four of 17 hydrocephalus patients (23.5%) had bruxism. Even though awake bruxism occurred early after stroke onset, it occurred late after AD and FTD onset. This occurred in a far advanced stage of AD, while it occurred in a moderately advanced stage of FTD. SPM analysis in AD and FTD patients with awake bruxism revealed significant hypoperfusion in frontotemporal and other subcortical structures. Surface electromyography recordings from the masseter muscle showed rhythmic regular motor activity at a rate of 1-2/s. CONCLUSION: This study suggests that awake bruxism is encountered not infrequently in various diseases in geriatric hospitals. It is frequently observed in FTD and normal pressure hydrocephalus, which characteristically shows frontal lobe dysfunction. These facts and SPM analysis show that awake bruxism can be regarded as a frontal neurological sign of various neurological disorders.
78. Li, K. K. (2009). "**Sleep apnea surgery: putting it all together.**" Oral Maxillofac Surg Clin North Am **21**(4): 421-423.
Since the first description of uvulopalatopharyngoplasty (UPPP) in 1972, the surgical management of obstructive sleep apnea syndrome (OSA) has become increasingly popular. This popularity is caused by several reasons. The psychomotor sequelae of OSA, such as excessive daytime sleepiness, daytime fatigue, and poor sleep quality caused by sleep fragmentation, have major deleterious impact on patients' well being, which behooves them to seek treatment. The risk of hypertension, heart attack, and stroke also prompts patients to seek treatment. Further, despite the potential success of nasal continuous positive airway pressure (CPAP), patients' compliance represents a clear problem, thus causing patients to seek treatment alternatives, namely surgery. All surgeons treating patients who have OSA must realize that the management of OSA crosses specialty lines and no single specialty can adequately take care of patients alone.
79. Lima, D. P., D. G. Diniz, et al. (2010). "**Saliva: reflection of the body.**" Int J Infect Dis **14**(3): e184-188.
Saliva has become an important resource for evaluating physiological and pathological conditions in humans. The use of saliva has many advantages, including the simple and non-invasive method of collection and its easy, low-cost storage. With the addition of modern techniques and chemical instrumentation equipment, there has been an increase in its use for laboratory investigations, applicable for basic and clinical analyses in the fields of medicine and dentistry. The value of these methods for the diagnosis of oral and systemic diseases has been the subject of study by several researchers with the aim of increasing its use alongside complementary exams.
80. Lima, L. M., M. B. Diniz, et al. (2009). "**Moebius syndrome: clinical manifestations in a pediatric patient.**" Pediatr Dent **31**(4): 289-293.
Moebius syndrome is a congenital, nonprogressive disorder clinically characterized by loss of facial expression, impaired stomatognathic system functions, incapacity to close the eyelids, and several oral impairments. The purpose of this paper was to present the clinical manifestations and the dental treatment in a 5-year, 2-month-old male Moebius syndrome patient. The child presented with facial asymmetry, difficulty performing facial mimic movements and pronouncing some letters, and compromised suction, mastication, breathing, and deglutition. An intraoral examination revealed hypofunction of the perioral muscles, cheeks and tongue, ankyloglossia, anterior open bite, and absence of carious lesions and dental anomalies. The dental treatment consisted of frenectomy and further placement of a removable orthodontic appliance with a palatal crib for correction of the anterior open bite. After 12 months of follow-up, anterior open bite decreased and speech, deglutition, and mastication improved.
81. Locker, D. (2009). "**Self-esteem and socioeconomic disparities in self-perceived oral health.**" J Public Health Dent **69**(1): 1-8.
OBJECTIVE: To determine if psychosocial factors explain the socioeconomic disparities in self-perceived oral health that persist after controlling for oral status variables. METHODS: Data came from the participants in the Canadian Community Health Survey 2003 who were residents in the city of Toronto. Oral health variables included self-rated

oral health, a 13-item oral health scale, denture wearing, and having a tooth extracted in the previous year. The last two measures were regarded as proxy indicators of tooth loss. Psychosocial variables included a self-esteem scale, a depression scale, and single items measuring life satisfaction, life stress, and sense of cohesion. Socioeconomic status was assessed using total annual household income. RESULTS: Interviews were completed with 2,754 dentate persons aged 20 years and over. Bivariate analyses confirmed that there were income gradients in self-rated oral health and scores on the oral health scale. Linear regression analyses confirmed that these persisted after controlling for age, gender, denture wearing, and having a tooth extracted in the previous year. In the model predicting self-rated oral health self-esteem, life satisfaction, stress, a sense of cohesion, and depression also contributed to the model, increased its explanatory power, and reduced the strength of but did not eliminate the association between income and self-rated oral health. Broadly, similar results were obtained when the oral health scale score was used as the dependent variable. In both analyses and all models, denture wearing had the strongest and most enduring effect. CONCLUSION: Psychosocial factors partly but do not wholly explain the socioeconomic disparities in self-perceived oral health in this population after controlling for tooth loss and denture wearing. Other variables need to be added to the models to increase their explanatory power.

82. Lockhart, P. B., M. T. Brennan, et al. (2009). **"Poor oral hygiene as a risk factor for infective endocarditis-related bacteremia."** *J Am Dent Assoc* **140**(10): 1238-1244.
 BACKGROUND: Infective endocarditis (IE) often is caused by bacteria that colonize teeth. The authors conducted a study to determine if poor oral hygiene or dental disease are risk factors for developing bacteremia after toothbrushing or single-tooth extraction. METHODS: One hundred ninety-four participants in a study were in either a toothbrushing group or a single-tooth extraction with placebo group. The authors assessed the participants' oral hygiene, gingivitis and periodontitis statuses. They assayed blood samples obtained before, during and after the toothbrushing or extraction interventions for IE-associated bacteria. RESULTS: The authors found that oral hygiene and gingival disease indexes were associated significantly with IE-related bacteremia after toothbrushing. Participants with mean plaque and calculus scores of 2 or greater were at a 3.78- and 4.43-fold increased risk of developing bacteremia, respectively. The presence of generalized bleeding after toothbrushing was associated with an almost eightfold increase in risk of developing bacteremia. There was no significant association between any of the measures of periodontal disease and the incidence of bacteremia after toothbrushing. The oral hygiene or disease status of a tooth was not significantly associated with bacteremia after its extraction. CONCLUSION: Bacteremia after toothbrushing is associated with poor oral hygiene and gingival bleeding after toothbrushing. CLINICAL IMPLICATIONS: Improvements in oral hygiene may reduce the risk of developing IE.
83. Loo, C. Y., R. M. Graham, et al. (2009). **"Behaviour guidance in dental treatment of patients with autism spectrum disorder."** *Int J Paediatr Dent* **19**(6): 390-398.
 BACKGROUND: Autism spectrum disorder (ASD) is a neurodevelopmental disorder categorized into autism, pervasive developmental disorder - not otherwise specified (PDD-NOS) and Asperger syndrome. AIMS: To identify factors associated with the behaviour of patients with ASD in a dental setting, use of general anaesthesia (GA), and protective stabilization. DESIGN: The dental charts of 395 patients with ASD patients and 386 unaffected patients were reviewed. The following data were analysed: ASD diagnosis, age, gender, residence, seizure disorder, additional diagnosis (mental retardation, cerebral palsy, self-injurious behaviour or pica), medications, caries prevalence and severity, dental treatment history, behaviour, and behaviour guidance technique(s) used. RESULTS: Within both groups, younger patients were more uncooperative. ASD patients with autism were more uncooperative than patients with PDD-NOS; patients with an additional diagnosis were also more uncooperative. ASD patients with higher caries severity, who were uncooperative or female, were more likely to require GA. Use of protective stabilization was associated with lower caries severity, presence of seizure disorder, uncooperative behaviour, male gender, or residency in a group home/institution. CONCLUSIONS: Autism spectrum disorder patients with autism, younger age and an additional diagnosis were more uncooperative. Factors associated with the use of GA and protective stabilization in patients with ASD were also identified.
84. Lotan, M., R. Moe-Nilssen, et al. (2010). **"Measurement properties of the Non-Communicating Adult Pain Checklist (NCAPC): a pain scale for adults with Intellectual and Developmental Disabilities, scored in a clinical setting."** *Res Dev Disabil* **31**(2): 367-375.
 The 18 items' Non-Communicating Adult Pain Checklist (NCAPC) has been developed from the 27 items Non-Communicating Children Pain Checklist to better capture pain behavior of adults with Intellectual and Developmental Disabilities (IDD). As part of the NCAPC's measurement properties, internal consistency, reliability and sensitivity to pain have been evaluated and found satisfactory, using scores based on video-uptakes. The aim of the article therefore was to examine the instrument's discriminative ability and sensitivity to pain of adults at different levels of IDD when scored within a clinical situation as well as through video-uptakes. Participants were 59 adults at different levels of IDD who were observed for pain behavior, before and during dental hygiene treatment (scored directly) and influenza injection (scored from video-uptakes), using the NCAPC. The results suggest that the NCAPC differentiated between pain and non-pain situations, as well as between pain reaction during two different medical procedures

expected to cause more or less pain, and it was found sensitive to pain at all levels of IDD. We conclude that the present findings add to previous findings of measurement properties of the NCAPC, and support that it can be scored directly in a clinical setting.

85. Lyons, R. A. (2009). **"Understanding basic behavioral support techniques as an alternative to sedation and anesthesia."** *Spec Care Dentist* **29**(1): 39-50.
Patients with special needs often present a challenge for the dental care team. The exacting and surgical nature of dental procedures requires significant patient cooperation to ensure the safe delivery of care. Some individuals who have special care needs have difficulty cooperating during treatment, thus creating a potentially harmful situation. Modern dentistry, particularly pediatric dentistry, provides the dental team with a variety of strategies designed to enable the team to safely provide comprehensive care in the least restrictive manner. These techniques range from tell-show-do, to medical stabilization, to general anesthesia. The effective use of noninvasive, nonpharmacologic behavioral guidance/support techniques cannot only avoid the need for sedation or general anesthesia, they can teach the patient to develop coping skills that may enable them to receive comprehensive care in a traditional dental setting over a lifetime. Unfortunately, many providers are inadequately trained in behavioral support strategies. This paper presents a review of noninvasive, nonpharmacologic behavioral support techniques with discussion regarding their application to persons with special care needs.
86. Madrid, C. and M. Sanz (2009). **"What impact do systemically administered bisphosphonates have on oral implant therapy? A systematic review."** *Clin Oral Implants Res* **20 Suppl 4**: 87-95.
OBJECTIVES: The aim of this systematic review is to evaluate, analysing the dental literature, whether: * Patients on intravenous (IV) or oral bisphosphonates (BPs) can receive oral implant therapy and what could be the risk of developing bisphosphonate-related osteonecrosis of the jaw (BRONJ)? * Osseointegrated implants could be affected by BP therapy. MATERIAL AND METHODS: A Medline search was conducted and all publications fulfilling the inclusion and exclusion criteria from 1966 until December 2008 were included in the review. Moreover, the Cochrane Data Base of Systematic Reviews, and the Cochrane Central Register of Controlled Trials and EMBASE (from 1980 to December 2008) were searched for English-language articles published between 1966 and 2008. Literature search was completed by a hand research accessing the references cited in all identified publications. RESULTS: The literature search rendered only one prospective and three retrospective studies. The prospective controlled non-randomized clinical study followed patients with and without BP medication up to 36 months after implant therapy. The patients in the experimental group had been on oral BPs before implant therapy for periods ranging between 1 and 4 years. None of the patients developed BRONJ and implant outcome was not affected by the BP medication. The three selected retrospective studies (two case-controls and one case series) yielded very similar results. All have followed patients on oral BPs after implant therapy, with follow-up ranging between 2 and 4 years. BRONJ was never reported and implant survival rates ranged between 95% and 100%. The literature search on BRONJ including guidelines and recommendations found 59 papers, from which six were retrieved. Among the guidelines, there is a consensus on contraindicating implants in cancer patients under IV-BPs and not contraindicating dental implants in patients under oral-BPs for osteoporosis. CONCLUSIONS: From the analysis of the one prospective and the three retrospective series (217 patients), the placement of an implant may be considered a safe procedure in patients taking oral BPs for <5 years with regard to the occurrence of BRONJ since in these studies no BRONJ has been reported. Moreover, the intake of oral-BPs did not influence short-term (1-4 years) implant survival rates.
87. Maeda, Y., D. Kumamoto, et al. (2009). **"Effectiveness and fabrication of mouthguards."** *Dent Traumatol* **25**(6): 556-564.
Although mouthguards have been suggested as a means for preventing dental traumatic injuries, there are still some controversies over some aspects such as effectiveness in preventing concussions, material selections, method for fabrication, design, side effects and so on. The purpose of this literature review was to clarify differences in opinions with supporting evidence on these issues and find the best guidelines for promoting usage and providing mouthguards with better protective capability and fewer side effects such as difficulty in breathing and speaking.
88. 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.

89. Malden, N., C. Beltes, et al. (2009). **"Dental extractions and bisphosphonates: the assessment, consent and management, a proposed algorithm."** *Br Dent J* **206**(2): 93-98.
 Bisphosphonate-associated osteonecrosis of the jaws (BONJ) is recognised as a significant complication related to the use of bisphosphonates and currently is gaining importance due to the increasingly widespread use of these medications. Patients are placed into low or high risk groups of developing BONJ depending on the systemic condition for which they have received bisphosphonates. Numerically, the largest group worldwide is patients receiving bisphosphonates for osteoporosis and these generally fall into the low risk group for BONJ. The high risk group, while numerically smaller, is composed of those patients receiving bisphosphonates in the management of malignancy affecting the skeleton, either primary or secondary (metastatic disease). A number of additional systemic and local risk factors are proposed, which have the effect of increasing the risk of BONJ following an extraction. These risk factors may have the effect of moving a low risk categorised patient into a medium, or perhaps more realistically an unknown risk category. An example of a systemic risk factor is the concurrent use of corticosteroids and a local risk factor is mandibular molar extraction. The purpose of this paper is to define and validate an algorithm to guide clinicians in the area of patient information, consent and management for patients currently taking or having previously taken bisphosphonates who require dental extractions.
90. Manfredini, D. and F. Lobbezoo (2009). **"Role of psychosocial factors in the etiology of bruxism."** *J Orofac Pain* **23**(2): 153-166.
 AIMS: To summarize literature data about the role of psychosocial factors in the etiology of bruxism. METHODS: A systematic search in the National Library of Medicine's PubMed Database was performed to identify all peer-reviewed papers in the English literature dealing with the bruxism-psychosocial factors relationship. All studies assessing the psychosocial traits of bruxers (by using questionnaires, interviews, and instrumental and laboratory exams) and reviews discussing the contribution of those factors to the etiology of bruxism were included in this review. RESULTS: A total of 45 relevant papers (including eight reviews) were retrieved with a search strategy combining the term "bruxism" with the words stress, anxiety, depression, psychosocial and psychological factors. The majority of data about the association between psychosocial disorders and bruxism came from studies adopting a clinical and/or self-report diagnosis of bruxism. These studies showed some association of bruxism with anxiety, stress sensitivity, depression and other personological characteristics, apparently in contrast with sleep laboratory investigations. A plausible hypothesis is that clinical studies are more suitable to detect awake bruxism (clenching type), while polysomnographic studies focused only on sleep bruxism (grinding type). CONCLUSION: Wake clenching seems to be associated with psychosocial factors and a number of psychopathological symptoms, while there is no evidence to relate sleep bruxism with psychosocial disorders. Future research should be directed toward the achievement of a better distinction between the two forms of bruxism in order to facilitate the design of experimental studies on this topic.
91. Mickelson, S. A. (2009). **"Anesthetic and postoperative management of the obstructive sleep apnea patient."** *Oral Maxillofac Surg Clin North Am* **21**(4): 425-434.
 Sleep apnea patients pose a challenge for surgeons, anesthesiologists, and surgical facilities as there is increased risk for anesthetic and postoperative complications. Precautions before and after surgery minimize these risks. Screening for sleep apnea should be done for all surgical patients. Safe perioperative management requires judicious use of narcotics and sedating medications, reducing upper airway edema, prevention of aspiration and deep vein thrombosis, blood pressure control, use of positive airway pressure, and proper postoperative monitoring. Although the literature lacks specific recommendations, the guidelines presented in this article are based on more than 20 years of experience and supported by peer-reviewed medical literature.
92. Miller, C. S. and G. J. McGarity (2009). **"Tetracycline-induced renal failure after dental treatment."** *J Am Dent Assoc* **140**(1): 56-60.
 BACKGROUND: Tetracyclines are broad-spectrum antibiotics used by dental practitioners in the treatment of periodontal disease. They generally are safe in adults. However, caution is advised in patients who have pre-existing kidney disease. CASE DESCRIPTION: A 42-year-old woman with polycystic kidney disease received a prescription for tetracycline (250 milligrams, four times daily) after undergoing tooth extractions. She developed nausea, vomiting and diarrhea within days and end-stage renal disease within two weeks of taking the antibiotic. Hemodialysis was required to stabilize the patient's condition. Use of the Naranjo nomogram demonstrated an association between the two events. CLINICAL IMPLICATIONS: This case illustrates the importance of obtaining a thorough medical history and understanding potential adverse drug effects before prescribing a common antibiotic.
93. Modi, M., S. Rastogi, et al. (2009). **"Buprenorphine with bupivacaine for intraoral nerve blocks to provide postoperative analgesia in outpatients after minor oral surgery."** *J Oral Maxillofac Surg* **67**(12): 2571-2576.

PURPOSE: The demonstration that opioid receptors exist in the peripheral nervous system offers the possibility of providing postoperative analgesia in the ambulatory surgical patient. Over the previous decade, many investigators have studied this approach and have compared the efficacy of various opioids added to the local anesthetic near the brachial plexus; and it appears from several of these studies that buprenorphine provides the longest duration of analgesia, the most important parameter of postoperative analgesia in outpatients. One of these studies indicated that the agonist-antagonist, buprenorphine, added to bupivacaine provided a longer period of postoperative analgesia than the traditional opiates, but none of the studies was performed in patients undergoing minor oral surgery to check the efficacy of buprenorphine to provide postoperative analgesia in dental patients. The present study was undertaken to ascertain the efficacy of buprenorphine in providing prolonged postoperative analgesia when added to 0.5% bupivacaine with epinephrine 1:200,000. **PATIENTS AND METHODS:** Fifty healthy, consenting adult patients scheduled for upper extremity surgery were enrolled in the study. Patients were assigned randomly to 1 of 2 equal groups based on the agents used for the blocks. Patients in group I received 40 mL of a local anesthetic alone, and those in group II received the same local anesthetic plus buprenorphine 0.3 mg. The study was kept double-blind by having one dentist prepare the solutions, a second dentist perform the blocks, and a third dentist monitor the anesthesia and analgesia thereafter, up to and including the time of the first request for an analgesic medication. The data were reported as means +/- standard errors of the mean, and differences between groups were determined using t test. A P value less than .01 was considered statistically significant. **RESULTS:** The mean duration of postoperative pain relief after injection of the local anesthetic alone was 8.34 +/- 0.11 hours compared with 28.18 +/- 1.02 hours after buprenorphine was added, a difference that was statistically (and clinically) significant ($P < .001$). **CONCLUSION:** The addition of buprenorphine to the local anesthetic used for intraoral nerve blocks in the present study provided a 3-fold increase in the duration of postoperative analgesia, with complete analgesia persisting 30 hours beyond the duration provided by the local anesthetic alone in 75% of patients. This practice can be of particular benefit to patients undergoing minor oral surgery by providing prolonged analgesia after discharge from the hospital.

94. Mohammadi, Z. (2009). **"Systemic and local applications of steroids in endodontics: an update review."** *Int Dent J* 59(5): 297-304.
Up to 80% of endodontic patients who report with preoperative pain continue to experience some level of pain following the endodontic procedure. Various classes of drugs have been studied for the management of post-treatment endodontic pain. Since endodontic pain is often associated with chronic inflammation, the presence of bacterial by-products, influx of primed immune cells and activation of the cytokine network and other inflammatory mediators, pain may be reduced by administration of glucocorticoid steroids. The aim of this paper is to review the pharmacology and mechanisms of actions of steroids as well as their indications for endodontics, contraindications, dosages and side-effects.
95. Montecchi, P. P., M. Di Trani, et al. (2009). **"The dentist's role in recognizing childhood abuses: study on the dental health of children victims of abuse and witnesses to violence."** *Eur J Paediatr Dent* 10(4): 185-187.
AIM: Up to today, little attention and training has been paid, in the Italian dental field, to a dramatically widespread problem, childhood abuse and neglect (CAN). Our research fits into a current of thought on alerting physicians, not only paediatricians, to the problem of abused children. Violence is often part of neglect and carelessness toward children, and it often also concerns their personal hygiene and health care. Aim of our study was to verify the hypothesis that dental neglect, intended as a specific form of neglect, is often associated to other types of neglect, and therefore it could represent an important sign in identifying childhood abuse and neglect situations. These were investigated through the comparison between a group of children with psychological disorder and a control group, as far as their dental health is concerned. Our results indicate that the abused children show: a significantly higher dental plaque index ($p=.02$); a higher gingival inflammation ($p=.2$); a higher number of untreated decays ($p=.004$); more evidences of neglect ($p=.0002$). Additionally, the abused subjects were less cooperative during dental visits ($p=.0005$). Our data support the hypothesis that the abused children in our group are, both under the hygiene point of view and access to treatment, more neglected by their caregivers.
96. Morimoto, Y., H. Niwa, et al. (2009). **"Hemostatic management for periodontal treatments in patients on oral antithrombotic therapy: a retrospective study."** *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 108(6): 889-896.
PURPOSE: We retrospectively investigated hemostatic management for periodontal treatments in patients on oral antithrombotic therapy. **PATIENTS AND METHODS:** A total of 155 periodontal treatment procedures were performed in 139 patients who continued taking conventional antithrombotic drugs. Insertion of oxidized cellulose, compression, and suturing were used as local hemostatic measures. When hemostasis was difficult, hemorrhage was stopped using electrocautery and/or splint. **RESULTS:** For the warfarin patients, 49 scaling procedures were performed in patients with INR of 4.82 or less, and 52 periodontal surgeries were performed in patients with INR of 2.97 or less. As for periodontal surgeries, electrocautery and splint were used in 30% and 70% of cases, respectively. In the entire patient population, posttreatment hemorrhage was seen in 2 (1.3%) of the 155 periodontal treatment procedures.

CONCLUSIONS: Scaling can be safely performed in patients on warfarin (INR <4.0) and/or antiplatelet therapy. Periodontal surgery can be performed in patients with INR less than 3.0 with proper local hemostatic procedures.

97. Nash, D. A. (2009). **"Improving access to oral health care for children by expanding the dental workforce to include dental therapists."** *Dent Clin North Am* **53**(3): 469-483.
This article documents the disparities in oral health among children, identifies barriers to access to care for children, describes the use of dental therapists internationally to improve access to care for children, documents previous efforts in the United States to train individuals other than dentists to care for children's teeth, describes the current status of the use of dental therapists in Alaska, justifies limiting the care given by dental therapists to children, suggests potential economic advantages of using dental therapists, and concludes by describing how dental therapists could be trained and deployed in the United States to improve access to care for children and reduce disparities in oral health.
98. Nematullah, A., A. Alabousi, et al. (2009). **"Dental surgery for patients on anticoagulant therapy with warfarin: a systematic review and meta-analysis."** *J Can Dent Assoc* **75**(1): 41.
PURPOSE: To evaluate the effect of continuing warfarin therapy on the bleeding risk of patients undergoing elective dental surgical procedures. METHODS: Data sources were the MEDLINE and EMBASE databases, the Cochrane Central Register of Controlled Trials, a manual citation review of the relevant literature, content experts and relevant abstracts from the proceedings of the International Association for Dental Research. Study selection was carried out independently by 2 reviewers, as was quality assessment. Data extraction was done by 3 reviewers. Differences were resolved by consensus. Eligible studies were randomized controlled trials that compared the effects of continuing the regular dose of warfarin therapy with the effects of discontinuing or modifying the dose on the incidence of bleeding in patients undergoing dental procedures. RESULTS: Five trials (a total of 553 patients) met the inclusion criteria. Compared with interrupting warfarin therapy (either partial or complete), perioperative continuation of warfarin with patients' usual dose was not associated with an increased risk for clinically significant nonmajor bleeding (relative risk [RR], 0.71; 95% confidence interval [CI]: 0.39-1.28; $p = 0.65$; $I^2 = 0\%$) or an increased risk for minor bleeding (RR, 1.19; 95% CI: 0.90-1.58; $p = 0.22$; $I^2 = 0\%$). CONCLUSIONS: Continuing the regular dose of warfarin therapy does not seem to confer an increased risk of bleeding compared with discontinuing or modifying the warfarin dose for patients undergoing minor dental procedures.
99. Ney, D. M., J. M. Weiss, et al. (2009). **"Senescent swallowing: impact, strategies, and interventions."** *Nutr Clin Pract* **24**(3): 395-413.
The risk for disordered oropharyngeal swallowing (dysphagia) increases with age. Loss of swallowing function can have devastating health implications, including dehydration, malnutrition, pneumonia, and reduced quality of life. Age-related changes increase risk for dysphagia. First, natural, healthy aging takes its toll on head and neck anatomy and physiologic and neural mechanisms underpinning swallowing function. This progression of change contributes to alterations in the swallowing in healthy older adults and is termed presbyphagia, naturally diminishing functional reserve. Second, disease prevalence increases with age, and dysphagia is a comorbidity of many age-related diseases and/or their treatments. Sensory changes, medication, sarcopenia, and age-related diseases are discussed herein. Recent findings that health complications are associated with dysphagia are presented. Nutrient requirements, fluid intake, and nutrition assessment for older adults are reviewed relative to dysphagia. Dysphagia screening and the pros and cons of tube feeding as a solution are discussed. Optimal intervention strategies for elders with dysphagia ranging from compensatory interventions to more rigorous exercise approaches are presented. Compelling evidence of improved functional swallowing and eating outcomes resulting from active rehabilitation focusing on increasing strength of head and neck musculature is provided. In summary, although oropharyngeal dysphagia may be life threatening, so are some of the traditional alternatives, particularly for frail, elderly patients. Although the state of the evidence calls for more research, this review indicates that the behavioral, dietary, and environmental modifications emerging in this past decade are compassionate, promising, and, in many cases, preferred alternatives to the always present option of tube feeding.
100. Nguyen, V. and G. Palmer (2009). **"A review of the diagnosis and management of the cracked tooth."** *Dent Update* **36**(6): 338-340, 342, 345-336 passim.
A cracked tooth is a common presentation in general dental practice. It may be difficult to diagnose, owing to the variations in the clinical presentation. The symptoms that result from a cracked tooth have given rise to the term Cracked Tooth Syndrome (CTS). This article reviews and discusses the clinical signs, symptoms and the management of CTS. An early diagnosis is important to relieve pain, restore function and improve the prognosis for the tooth. The prognosis can be unpredictable and this needs to be understood by patients before embarking on definitive treatment. CLINICAL RELEVANCE: Cracked tooth syndrome is a common occurrence in general dental practice and may be difficult to diagnose, especially as to the extent and direction of the crack. Awareness of cracked tooth syndrome is therefore important in providing the correct treatment and patient management.

101. Norisue, Y., J. Onopa, et al. (2009). **"Surfing as a risk factor for gastroesophageal reflux disease."** Clin J Sport Med **19**(5): 388-393.
 OBJECTIVE: To compare the prevalence of gastroesophageal reflux disease (GERD) in surfers versus nonsurfers who participate in other sports activities based on the hypothesis that paddling in the prone position on hard surfboard surfaces leads to increased intra-abdominal pressure and GERD. STUDY DESIGN: A questionnaire survey using a modified Gastrointestinal Symptom Rating Scale. SETTING: Data obtained from surfers and nonsurfer athletes on the island of Oahu in the state of Hawaii. PARTICIPANTS: One hundred eighty-five surfers and 178 nonsurfers who participate in sports activities. ASSESSMENT OF RISK FACTORS: Surfer or nonsurfer status, type of surfboard used, frequency of surfing, and duration of surfing experience. MAIN OUTCOME MEASURES: The prevalence of reflux symptoms at least twice a week (GERD). RESULTS: The prevalence of GERD was significantly higher in short-board surfers than in nonsurfers with an odds ratio of 4.6 (28% versus 7%, $P < 0.001$) after adjustment for demographic variables using the multivariate regression model. GERD was more prevalent in short-boarders than long-boarders (28% and 12%, respectively). The prevalence of GERD increased significantly as both the frequency and duration of surfing experience increased ($P < 0.001$). CONCLUSION: Surfing is strongly associated with GERD. Short-board surfing appears to have a stronger association with GERD than long-board surfing.
102. Noroozi, A. R. and R. F. Philbert (2009). **"Modern concepts in understanding and management of the "dry socket" syndrome: comprehensive review of the literature."** Oral Surg Oral Med Oral Pathol Oral Radiol Endod **107**(1): 30-35.
 OBJECTIVES: This paper provides a comprehensive review of the etiology, pathophysiology and current treatment of dry socket. STUDY DESIGN: The Medline database (Ovid version) from 1966 to 2007 was searched for the term "dry socket" published in the English language, and 317 results were obtained. The articles were screened by abstract for relevance to etiology, pathophysiology, or treatment of dry socket. Treatment papers were ranked on the quality of evidence presented as assessed using the evidence-based systematic review worksheet of the University of Alberta. A total of 62 publications were included in the final review. RESULTS: Prevention methods remain the key to avoiding this complication. Prophylactic placement of topical antibiotics can be considered, whereas systemic antibiotics should be reserved for patients who are immunocompromised. CONCLUSION: This paper provided a comprehensive review of the etiology, pathophysiology, and current treatment of dry socket in dental practice.
103. Nussbaum, B. L. (2009). **"Dental care for patients who are unable to open their mouths."** Dent Clin North Am **53**(2): 323-328, x.
 There are a number of diseases and conditions that prevent the sufferer from adequately opening the mouth. The danger of inanition, malnutrition, chronic periodontal disease, caries, and abscessed teeth are very real to this population. Dental treatment issues include inadequate access to the oral cavity, inability to locally anesthetize mandibular posterior teeth, inability to gain access for traditional operative dentistry, and lack of clearance for most oral surgery procedures. The purpose of this article is to provide the reader with a discussion of the various conditions and then discuss the dental and anesthesia issues for this unique population.
104. Osei, A. D. (2009). **"An approach to assessing elder abuse and neglect in the dental office."** Tex Dent J **126**(7): 592-594.
 Elder abuse and neglect is a complex phenomenon with no clear markers identified as both reliable and valid in the dental operator. Applying the concepts and definition of abuse and attention to risk factors for abuse could lead the clinician, as the head of the care team to situations where abuse of an elder could be suspected. Once abuse is suspected, direct questioning and comprehensive assessment of an elders' physical, emotional, and emotional state could be recorded as part of social history in their dental records. A multidisciplinary team approach is encouraged to combat elder abuse. In Texas, state statutes on suspected abuse mandate reporting to appropriate Adult Protective Services within your region with stipulated penalties for failure to report suspected abuse or neglect. Elder abuse hotlines are (800) 252-5400 or (512) 834-3784 (elder abuse domestic or community).
105. Otto, S., S. Hafner, et al. (2009). **"The role of inferior alveolar nerve involvement in bisphosphonate-related osteonecrosis of the jaw."** J Oral Maxillofac Surg **67**(3): 589-592.
 PURPOSE: Hypesthesia or anesthesia of the lower lip (Vincent's symptom) is a common sign in patients with osteomyelitis of the mandible, especially in severe cases. PATIENTS AND METHODS: We observed an involvement of the inferior alveolar nerve in patients with bisphosphonate-related osteonecrosis of the jaw (BRONJ). Surprisingly, we found Vincent's symptom also in patients with limited and early stages of BRONJ. RESULTS: These patients were successfully treated by surgical removal of the necrotic bone combined with preoperative and postoperative administration of antibiotics. We report on the occurrence and management of an involvement of the inferior alveolar nerve in patients with BRONJ and discuss possible causes. CONCLUSION: We conclude that impairment of inferior alveolar nerve function can be an important early symptom or even the presenting symptom of BRONJ that is also easily detectable by bisphosphonate-prescribing physicians. Concerning the management of BRONJ, we conclude

that surgical removal of necrotic bone combined with antibiotics is an adequate treatment in patients with osteonecrosis of the jaw.

106. Packer, M., V. Nikitin, et al. (2009). **"The potential benefits of dental implants on the oral health quality of life of people with Parkinson's disease."** *Gerodontology* **26**(1): 11-18.
OBJECTIVE: To investigate how dental implants impact on the oral health quality of life of people with Parkinson's disease (PD). BACKGROUND: PD is a progressive neurological disorder that can result in a number of oral health care challenges, including denture difficulties. Lack of evidence related to use of implants in PD prompted this study to investigate their use in this group of people. MATERIALS AND METHODS: Nine people with PD were provided with either fixed or removable prostheses using Astra-Tech implants. Participants completed the socio-dental questionnaire, 'The Dental Impact on Daily Living Assessment' (DIDL) prior to implant surgery, and at 3 and 12 months after provision of the final prosthesis. DIDL comprises two components - the Oral Health Quality of Life Inventory (OH-QoL) and the Self-Reported Assessment of Oral Health and Functional Status (SROH). RESULTS: Nine people (with an age range of 54-77 years) had implants placed. The implant success rate was 85 and 81% in the maxilla and mandible, respectively. The OH-QoL and SROH results (analysed using the one-way analysis of variance and pairwise multiple comparisons) demonstrated a significant improvement in the domains of eating and satisfaction with the prosthesis after 3 months, which was maintained at the twelve month review. The OH-QoL indicated a gradual improvement in oral well-being over the 12-month period. CONCLUSION: The oral health quality of life of people with PD was improved by the use of dental implants, indicating this as a viable treatment option.
107. Padmanabhan, M. Y., R. K. Pandey, et al. (2009). **"A comparative evaluation of agents producing analgo-sedation in pediatric dental patients."** *J Clin Pediatr Dent* **34**(2): 183-188.
OBJECTIVE: Procedural sedation and analgesia (PSA) has reduced the need for general anesthesia (GA) for many surgical procedures in pediatric patients. The objective of this study was to evaluate the efficacy of four analgo-sedative combinations- midazolam plus ketamine (MK), midazolam plus tramadol (MT), promethazine plus tramadol (PT) and promethazine plus ketamine (PK) in facilitating dental treatment of uncooperative children. STUDY DESIGN: Thirty six uncooperative ASA type I children who required extensive dental treatment were randomly assigned to receive one of the four analgo-sedative combinations during each visit. A 4-stage cross-over design was adopted so that each child received all the four combinations. Safety was monitored through vital signs and side effects. RESULTS: The overall success was 81% with MK, 69% for PK, 67% for MT and 42% for PT and the difference between the success rates of these agents was statistically significant ($p < 0.001$). The required dental treatment could be successfully completed at least during 3 sessions in 23 children (62.2%). CONCLUSIONS: Segmental dental treatment under analgo-sedation can be considered as a viable alternative before considering patients for dental management under GA. MK and MT were found to be safe and effective for sedating pediatric dental patients.
108. Paul, R., R. Anand, et al. (2009). **"An unusual complication of an inferior dental nerve block: a case report."** *Br Dent J* **206**(1): 9-10.
Local anaesthetic drugs are commonly used in dental practice, with few complications. We describe an unusual complication of an inferior dental nerve block where, as the needle was advanced through the mucosa, the patient experienced profound numbness and skin pallor in the distribution of the infra-orbital nerve. We discuss the possible mechanism for this complication.
109. Peltier, B. (2009). **"Psychological treatment of fearful and phobic special needs patients."** *Spec Care Dentist* **29**(1): 51-57.
Dental fears and phobias trouble patients with and without special needs, and they are a problem for dentists, as well. This article reviews current research and literature related to methods used to alleviate dental fear and concludes that while some important psychological methods are available, much work is left to be done in this area. It is clear that there is an important role for psychological and behavioral input to the dentist-patient interaction. While dental phobia represents a class of special needs itself, patients with other important disabilities (e.g., physical or cognitive impairments) are sometimes comorbidly phobic, a condition often missed or misdiagnosed by treating practitioners. Office-based techniques that focus on relaxation, breathing, imagery, hypnosis, and effective use of operatory language are described. The methods advocated here can be used with patients having mild or moderate cognitive impairments. Readings are recommended for the dentist or auxiliary practitioner interested in learning these techniques.
110. Penarrocha, M., E. Mora, et al. (2009). **"Idiopathic trigeminal neuropathies: a presentation of 15 cases."** *J Oral Maxillofac Surg* **67**(11): 2364-2368.
PURPOSE: The aim of this study is to present a clinical series of patients with trigeminal neuropathy and their treatment. PATIENTS AND METHODS: We present a retrospective study of 15 cases of idiopathic trigeminal neuropathies, with unilateral involvement of 1 or more divisions of the trigeminal nerve. The clinical, radiologic, and

laboratory data of the patients, in addition to the treatment and clinical evolution, were reviewed. The patients were followed up for a mean of 34.4 months (range, 12-120 months). RESULTS: The study consisted of 11 women and 4 men. The numbness was predominantly located in the innervated mental area and extended in some cases to the first and second trigeminal divisions. Seven patients had slight continuous discomfort in association with the numbness, one of whom had added bouts of typical neurogenic pain. Of the 15 cases, 8 (53%) had acute idiopathic trigeminal neuropathies and fully recovered within 3 months and 7 (47%) were chronic cases, without full recovery after 3 months. Mild pain was felt by 57% of the chronic patients and 37% of the acute patients; treatment with amitriptyline achieved complete or partial improvement in over half of these patients. CONCLUSION: Of the idiopathic trigeminal neuropathies, half were acute and half were chronic. Mild pain presented more frequently in the chronic patients and was relieved with amitriptyline.

111. Pereira, L. J., R. C. Costa, et al. (2009). **"Risk indicators for signs and symptoms of temporomandibular dysfunction in children."** *J Clin Pediatr Dent* **34**(1): 81-86.
OBJECTIVES: The aim of this study was to determine the risk indicators for signs and symptoms of temporomandibular dysfunction (TMD) in children between 4 and 12 years of age. STUDY DESIGN: One hundred six patients were assessed for the following variables: (1) signs and symptoms of TMD (deviation when opening mouth, joint noises, limitation of movement, pain in the mandible or during movement), (2) dentition and occlusal abnormalities, and 3) habits (pacifier sucking, nonnutritive sucking, finger sucking, nail biting, and teeth grinding (bruxing)). Multivariate logistic regression was performed with the level of significance set at $P < 0.05$. RESULTS: The prevalence of at least one sign or symptom of TMD in the present sample was 12.26% ($n = 13$). Only bruxing ($P = 0.01$, odds ratio 6.08, CI 1.51-24.51) and posterior crossbite ($P = 0.03$, odds ratio 5.74, CI, 1.18-27.85) achieved statistical significance in the multivariate regression model and were considered risk indicators for signs and symptoms of TMD. CONCLUSIONS: Children with bruxing or clenching habits and those with posterior crossbite have a greater likelihood of developing signs and symptoms of TMD.
112. Pobo, A., T. Lisboa, et al. (2009). **"A randomized trial of dental brushing for preventing ventilator-associated pneumonia."** *Chest* **136**(2): 433-439.
BACKGROUND: Poor oral hygiene is associated with respiratory pathogen colonization and secondary lung infection. The impact of adding electric toothbrushing to oral care in order to reduce ventilator-associated pneumonia (VAP) incidence is unknown. METHODS: The study design was a prospective, simple-blind, randomized trial of adult patients intubated for > 48 h. Controlling for exposure to antibiotic treatment, patients were randomized to oral care every 8 h with 0.12% chlorhexidine digluconate (standard group) or standard oral care plus electric toothbrushing (toothbrush group). VAP was documented by quantitative respiratory cultures. Mechanical ventilation (MV) duration, hospital ICU length of stay (LOS), antibiotic use, and hospital ICU mortality were secondary end points. RESULTS: The study was terminated after randomizing 147 patients (74 toothbrush group) in a scheduled interim analysis. The two groups were comparable at baseline. The toothbrush group and standard group had similar rates of suspected VAP (20.3% vs 24.7%; $p = 0.55$). After adjustment for severity of illness and admission diagnosis, the incidence of microbiologically documented VAP was also similar in the two groups (hazard ratio, 0.84; 95% confidence interval, 0.41 to 1.73). The groups did not differ significantly in mortality, antibiotic-free days, duration of MV, or hospital ICU LOS. CONCLUSIONS: Our findings suggest that the addition of electric toothbrushing to standard oral care with 0.12% chlorhexidine digluconate is not effective for the prevention of VAP. Trial registration: ClinicalTrials.gov Identifier: NCT00842478.
113. Pogrel, M. A. (2009). **"Broken local anesthetic needles: a case series of 16 patients, with recommendations."** *J Am Dent Assoc* **140**(12): 1517-1522.
BACKGROUND: Local anesthetic needle fractures occur rarely. Since reports are uncommon, the mechanism and optimal treatment remain controversial. METHODS: The author reviewed 16 cases of needle fracture that were reported during a 25-year period in one academic institution. RESULTS: Of 16 needle fractures, 15 occurred in connection with an inferior alveolar nerve block, and one occurred in connection with a posterior superior alveolar block. Of the 16 fractures, 13 involved a 30-gauge needle. Five of the patients involved were younger than 10 years. The oldest patient was 28 years old. In all cases, a surgeon retrieved the needle, often with radiological guidance, while the patient was under general anesthesia in an operating room. CONCLUSIONS AND CLINICAL IMPLICATIONS: Most needle fractures occur during the administration of inferior alveolar nerve blocks, often with 30-gauge needles and in children who are reported to have moved suddenly and violently as the dentist gave the injection. Dentists should avoid burying any needle up to the hub (so as to ensure the possibility of immediately retrieving the needle intraorally), avoid using 30-gauge needles to administer inferior alveolar nerve blocks and avoid bending the needle before inserting it.

114. Pradhan, A., G. D. Slade, et al. (2009). **"Factors influencing caries experience among adults with physical and intellectual disabilities."** *Community Dent Oral Epidemiol* **37**(2): 143-154.
 BACKGROUND: There is limited and inconsistent evidence on the influence of residential setting on caries experience of adults with physical and intellectual disabilities (PID), described here as care-recipients. Objective: To examine caries experience and associated factors among adults with PID. METHODS: Mailed questionnaire survey (2005-2006) of carers of adults with PID (18-44 years) in South Australia from family homes, community housing, and institutions, and oral examinations of care-recipients recording decayed (D), missing (M) and filled (F) teeth (DMFT). RESULTS: Carers completed questionnaires for 485 care-recipients, 267 of whom were examined (completion rate=55.1%). The prevalence of decay (D>0) was 16.9% and 76.3% had caries experience (DMFT>0). In unadjusted analysis, care-recipients at institutions had a significantly higher mean DMFT than other settings. After adjusting for carer and care-recipient characteristics, there was no difference in any of the DMFT components among residential settings. However, there were statistically significant associations (OR+/-95% CI excluding unity) between decayed teeth and moderate and high intake of sweet drinks and frequency of dental visits. Higher odds of missing teeth were associated with type of disability, general anaesthetic requirement for dental treatment and low and high carer-contact. Higher odds of filled teeth were associated with age, no oral hygiene assistance (OHA) and high carer-contact. Higher odds of caries experience were associated with age and no OHA. CONCLUSIONS: Residential setting was not associated with caries experience. Modifiable risk factors were diet, frequency of dental visits, no OHA and carer-contact hours.
115. Prahlow, J. A., T. J. Prahlow, et al. (2009). **"Case study: Asphyxia caused by inspissated oral and nasopharyngeal secretions."** *Am J Nurs* **109**(6): 38-43; quiz 51.
 An institutionalized man with severe mental disability and cerebral palsy, admitted from the ED with suspected aspiration pneumonia, died after a long struggle with respiratory difficulties. The cause of death was determined to be asphyxia resulting from a complete obstruction of the posterior pharynx and upper larynx by thickened oral and nasopharyngeal secretions. Although airway obstruction is common in people with motor or neurologic disorders and in those who are chronically debilitated or institutionalized, food and foreign matter are not the only culprits. This case serves to remind clinicians that a failure to provide good oral care and adequate hydration is not only poor practice but can result in death.
116. Priebe, H. J. (2009). **"Cricoid pressure: an expert's opinion."** *Minerva Anestesiol* **75**(12): 710-714.
 Nearly 40 years ago, cricoid pressure (CP) was introduced into anesthetic practice based on a single small case series that lacked essential information. No randomized controlled trials have since documented any benefit of CP. In addition, numerous surveys have shown that most anesthetists lack adequate theoretical and practical knowledge regarding all aspects of CP. Despite the lack of evidence of its effectiveness, evidence of numerous deleterious effects (the most important being interference with airway management), and documentation of poor practice of the technique, CP is still considered by most anesthetists as a standard of care during rapid sequence induction. However, by using CP we may well be endangering more lives by causing airway problems than we are saving in the hope of preventing pulmonary aspiration. It is dangerous to consider CP to be an effective and reliable measure in reducing the risk of pulmonary aspiration and to become complacent about the many factors that contribute to regurgitation and aspiration. Ensuring optimal positioning and a rapid onset of anesthesia and muscle relaxation to decrease the risk of coughing, straining or regurgitation during the induction of anesthesia are likely more important in the prevention of pulmonary aspiration than CP.
117. Pruitt, D. W. and T. Tsai (2009). **"Common medical comorbidities associated with cerebral palsy."** *Phys Med Rehabil Clin N Am* **20**(3): 453-467.
 The medical issues associated with the diagnosis of cerebral palsy (CP) can have significant interplay with the neuromuscular issues that most physiatrists manage in the clinical setting. Identification and appropriate management of these common comorbidities by the primary care and subspecialist physicians can have significant impact on the quality of life of the patient and family. Some of these issues are prevalent across all gross motor function classification system (GMFCS) levels of severity, whereas others more commonly complicate the care of those children with the more severe GMFCS levels IV and V. Performance of a complete review of systems to address the potentially complex medical comorbidities and subsequent application of appropriate screening tools can assist in achieving optimal outcomes in children with CP and their families.
118. Ram, S., H. Seirawan, et al. (2010). **"Prevalence and impact of sleep disorders and sleep habits in the United States."** *Sleep Breath* **14**(1): 63-70.
 PURPOSE: Epidemiologic studies on sleep disorders in the USA have mostly focused on specific disorders in specific groups of individuals. Most studies on sleep habits and sleep-related difficulties have focused on children and adolescents. The authors describe the prevalence of the three common physician-diagnosed sleep disorders (insomnia, sleep apnea, and restless legs syndrome (RLS)) by age, gender, and race in the US population. In addition, the authors describe the sleep habits and sleep-related difficulties in carrying routine daily activities. The

authors also investigate the impact of the sleep disorders on performing routine daily activities. METHODS: Data from the 2005-2006 National Health and Nutrition Examination Survey for 6,139 individuals over the age of 16 was analyzed for sleep-related parameters. RESULTS: The prevalence was highest for sleep apnea (4.2%), followed by insomnia (1.2%) and RLS (0.4%). Hispanics and Whites reported longer sleep duration than Blacks by 24 to 30 min. The predominant sleep habits were snoring while sleeping (48%), feeling unrested during the day (26.5%), and not getting enough sleep (26%). Difficulty concentrating (25%) or remembering (18%) were the main sleep-related difficulties in our sample. Insomnia, sleep apnea, and RLS had the highest impact on concentration and memory. CONCLUSIONS: Our findings suggest that the prevalence of sleep disorders in the USA is much lower than previously reported in the literature suggesting under diagnosis of sleep disorders by primary care physicians.

119. Rao, A. and R. Shenoy (2009). "**Mineral trioxide aggregate--a review.**" *J Clin Pediatr Dent* **34**(1): 1-7. Mineral Trioxide Aggregate (MTA) is a new material with numerous exciting clinical applications. MTA promises to be one of the most versatile materials of this century in the field of dentistry. Some of the appreciable properties of MTA include its good physical properties and its ability to stimulate tissue regeneration as well as good pulp response. In this article the availability, composition, manipulation, setting reaction, properties and clinical applications of MTA in pediatric practice has been reviewed.
120. Raposa, K. A. (2009). "**Behavioral management for patients with intellectual and developmental disorders.**" *Dent Clin North Am* **53**(2): 359-373, xi. Intellectual and developmental disorders can severely impair a patient's ability to communicate and socialize. Individuals with such disorders tend to have unusual ways of learning, paying attention, and reacting to different sensations. Symptoms can range from very mild to very severe. To properly treat these patients and, if necessary, refer them for appropriate medical care, dental professionals must be able to recognize the signs and symptoms of each patient's specific disability. This article gives details about behavior associated with intellectual and developmental disorders and describes specific techniques for care that may be used routinely at home and carried into the dental setting.
121. Reich, W., M. S. Kriwalsky, et al. (2009). "**Bleeding complications after oral surgery in outpatients with compromised haemostasis: incidence and management.**" *Oral Maxillofac Surg* **13**(2): 73-77. PURPOSE AND RESULTS: The aim of this prospective study was to determine the incidence of postoperative bleeding after oral surgery under local anaesthesia performed in outpatients with haemostatic disorders within a 5-year period (2003-2007). One hundred twenty one (70 males, 51 females) out of 2,056 outpatients with different haemostatic disorders (acquired or hereditary) were included in this study. The following data were recorded: medical history and general condition; medications; indication for the surgical procedure; specification of local anaesthesia; applied surgical techniques, considering the kind of haemostatic disorder; and peri- or postoperative bleeding complications. Postoperative bleeding was observed in 12 patients (9.9%). In three cases, inpatient treatment became necessary. The management of two patients with a haemostatic disorder (von Willebrand s disease and haemophilia A) is presented in short case reports. CONCLUSION: In a heterogeneous group of 121 outpatients with known haemostatic disorders, a combination of a few haemostatic agents with appropriate operative technique enables an effective wound management. In cases of failed local interventions after postoperative bleeding, further diagnostic investigations are required.
122. Reilly, D., C. A. Boyle, et al. (2009). "**Obesity and dentistry: a growing problem.**" *Br Dent J* **207**(4): 171-175. Obesity has increased at an alarming rate in recent years. It is now a worldwide public health problem. The World Health Organisation (WHO) classifies obesity as a chronic disease. Affected individuals are at increased risk of hypertension, heart disease and other illnesses. There are also important social implications. Within dentistry and particularly in the provision of conscious sedation, obesity can be a potential complicating factor. For example, the position of anatomical landmarks may be less obvious if surrounded by fatty tissue. Very obese patients may be housebound or have difficulty accessing dental surgeries. Dental chairs may not be of an appropriate design to accommodate some obese patients. However, little information or advice on this topic is available in the literature. This article reviews obesity from a dental perspective. Challenges in providing dental care for obese patients are identified and practical recommendations made for their management.
123. Robbins, M. R. (2009). "**Dental management of special needs patients who have epilepsy.**" *Dent Clin North Am* **53**(2): 295-309, ix. Patients who have developmental disabilities and epilepsy can be safely treated in a general dental practice. A thorough medical history should be taken and updated at every visit. A good oral examination to uncover any dental problems and possible side effects from antiepileptic drugs is necessary. Stability of the seizure disorder must be taken into account when planning dental treatment. Specific considerations for epileptic patients include the treatment of oral soft tissue side effects of medications and damage to the hard and soft tissue of the orofacial region

secondary to seizure trauma. Most patients who have epilepsy can and should receive functionally and esthetically adequate dental care.

124. Romer, M. (2009). **"Consent, restraint, and people with special needs: a review."** Spec Care Dentist **29**(1): 58-66.
Dentists providing treatment to individuals with developmental disabilities are often faced with unique medical/legal issues. Obtaining informed consent when a patient does not have capacity can be an involved process. Issues regarding therapeutic aides used for immobilization (i.e., restraint) during treatment may further complicate the situation. This area is controversial and has even resulted in legal difficulties for some dentists. Several topics related to the use of restraint are addressed in this article. A review of the literature and applicable laws pertaining to consent issues for people with special needs is presented and appropriate use of medical immobilization is discussed. Existing guidelines are reviewed. Informed consent and the use of restraint should be incorporated into overall guidelines for the use of anesthesia, sedation, and alternative behavior management techniques in providing dental care to patients with special needs.
125. Romer, M. and N. J. Dougherty (2009). **"Oral self-injurious behaviors in patients with developmental disabilities."** Dent Clin North Am **53**(2): 339-350, x-xi.
Self-injurious behaviors (SIB) in patients who have developmental disabilities is a complex disorder, and its underlying etiologies are poorly understood. SIB is a significant factor in hospitalizations, decisions to use psychotropic medications, and institutional placement for people who have developmental disabilities. Because this group often manifests oral SIB, the dentist may be the first professional called upon to evaluate a patient. Dental therapy focuses on symptomatic treatment to minimize tissue damage caused by SIB, but addressing the underlying impetus for the behavior is essential for successful treatment. Determining definitive therapeutic interventions is difficult because of the mixed bio behavioral etiologies for SIB. This complication necessitates a team approach that includes medical and behavioral specialists.
126. Romney, G. and M. Glick (2009). **"An updated concept of coagulation with clinical implications."** J Am Dent Assoc **140**(5): 567-574.
BACKGROUND: Over the past century, a series of models have been put forth to explain the coagulation mechanism. The coagulation cascade/waterfall model has gained the most widespread acceptance. This model, however, has problems when it is used in different clinical scenarios. A more recently proposed cell-based model better describes the coagulation process in vivo and provides oral health care professionals (OHCPs) with a better understanding of the clinical implications of providing dental care to patients with potentially increased bleeding tendencies. METHODS: The authors conducted a literature search using the PubMed database. They searched for key words including "coagulation," "hemostasis," "bleeding," "coagulation factors," "models," "prothrombin time," "activated partial thromboplastin time," "international normalized ratio," "anticoagulation therapy" and "hemophilia" separately and in combination. CONCLUSIONS: The coagulation cascade/waterfall model is insufficient to explain coagulation in vivo, predict a patient's bleeding tendency, or correlate clinical outcomes with specific laboratory screening tests such as prothrombin time, activated partial thromboplastin time and international normalized ratio. However, the cell-based model of coagulation that reflects the in vivo process of coagulation provides insight into the clinical ramifications of treating dental patients with specific coagulation factor deficiencies. CLINICAL IMPLICATIONS: Understanding the in vivo coagulation process will help OHCPs better predict a patient's bleeding tendency. In addition, applying the theoretical concept of the cell-based model of coagulation to commonly used laboratory screening tests for coagulation and bleeding will result in safer and more appropriate dental care.
127. Saliba, D. L., T. A. McCutchen, et al. (2009). **"Reliable block of the gag reflex in one minute or less."** J Clin Anesth **21**(6): 463.
128. Santamato, A., F. Panza, et al. (2009). **"Acoustic analysis of swallowing sounds: a new technique for assessing dysphagia."** J Rehabil Med **41**(8): 639-645.
OBJECTIVE: To perform acoustic analysis of swallowing sounds, using a microphone and a notebook computer system, in healthy subjects and patients with dysphagia affected by neurological diseases, testing the positive/negative predictive value of a pathological pattern of swallowing sounds for penetration/aspiration. DESIGN: Diagnostic test study, prospective, not blinded, with the penetration/aspiration evaluated by fiberoptic endoscopy of swallowing as criterion standard. SUBJECTS: Data from a previously recorded database of normal swallowing sounds for 60 healthy subjects according to gender, age, and bolus consistency was compared with those of 15 patients with dysphagia from a university hospital referral centre who were affected by various neurological diseases. METHODS: Mean duration of the swallowing sounds and post-swallowing apnoea were recorded. Penetration/aspiration was verified by fiberoptic endoscopy of swallowing in all patients with dysphagia. RESULTS: The mean duration of swallowing sounds for a liquid bolus of 10 ml water was significantly different between patients with dysphagia and healthy patients. We also described patterns of swallowing sounds and tested the

negative/positive predictive values of post-swallowing apnoea for penetration/aspiration verified by fiberoptic endoscopy of swallowing (sensitivity 0.67 (95% confidence interval 0.24-0.94); specificity 1.00 (95% confidence interval 0.56-1.00)). CONCLUSION: The proposed technique for recording and measuring swallowing sounds could be incorporated into the bedside evaluation, but it should not replace the use of more diagnostic and valuable measures.

129. Santos, M. T., R. O. Guare, et al. (2009). "**Caries experience in individuals with cerebral palsy in relation to oromotor dysfunction and dietary consistency.**" *Spec Care Dentist* **29**(5): 198-203.
The aim of this study was to investigate caries experience in individuals with cerebral palsy (CP) who have oromotor dysfunction and relate it to age and dietary consistency. Noninstitutionalized individuals with CP (n = 108) aged 4-19 years (mean: 10 years, 1 month +/- SD 4 years, 5 months) were recruited for this study. Subjects who were severely impaired (35.2%) had orofacial motor dysfunction most frequently, followed by those who were slightly affected (27.7%), moderately affected (20.4%), and very slightly affected (16.7%). Age was a statistically significant factor for oromotor dysfunction (p= 0.007), with the youngest individuals having the most severe oromotor problems. Dietary consistency and oromotor function were statistically significant influence on the DMF index (p= 0.0352). The highest total DMF values were measured for individuals who were severely impaired and also the youngest, as well as for those receiving liquid diets. Early rehabilitation, intervention, and prevention are important for these individuals.
130. Scully, C., J. Limeres, et al. (2009). "**Drooling.**" *J Oral Pathol Med* **38**(4): 321-327.
INTRODUCTION: Drooling is the overflowing of saliva from the mouth. It is mainly due to neurological disturbance and less frequently to hypersalivation. Drooling can lead to functional and clinical consequences for patients, families, and caregivers. The aim of this review is to emphasize the clinical aspects of the assessing and management of drooling. METHODS: All papers and clinical reviews of drooling in the electronic data bases (Medline, PubMed, Embase and the Cochrane Library) for the past 40 years in any languages have been evaluated. RESULTS: The severity of drooling and the effects on the quality of life of the patient and family, help to establish a prognosis and to decide the therapeutic regimen. Treatment options range from conservative therapy to medication, radiation, or surgery, and often a combination is needed. CONCLUSIONS: Chronic drooling remains a problem that can be difficult to manage. Despite the acceptable results obtained with most of the treatments, none is free of undesirable effects.
131. Seymour, R. A. (2009). "**Drug interactions in dentistry.**" *Dent Update* **36**(8): 458-460, 463-456, 469-470.
An increasing number of our patients are on medication of various types. This increase in prescribed medicines also raises the significant issue of potential drug interactions between those drugs used in dental practice and those taken by the patient. This article addresses those interactions and, where appropriate, puts them into perspective and attempts to quantify the risk. Mechanisms of relevant drug interactions are also discussed. Certain categories of drugs are more likely to be involved in interactions and again these are highlighted. Drug interactions relevant to dentistry can for the most part be prevented. A careful drug history should be taken from each patient and updated on a regular basis. CLINICAL RELEVANCE: This article highlights drug interactions that can arise in dental practice and how they can be avoided and managed.
132. Shah, A., N. Mehta, et al. (2009). "**Fracture of a dental needle during administration of an inferior alveolar nerve block.**" *Dent Update* **36**(1): 20-22, 25.
We report a case of a 42-year-old female who was referred to our department for the management of a fractured dental needle following administration of an inferior alveolar nerve block. The fractured needle was successfully removed under general anaesthesia. We also suggest some guidelines for preventing this unfortunate event.
133. Shankland, W. E., 2nd (2009). "**Four common herbs seen in dental practice: properties and potential adverse effects.**" *Cranio* **27**(2): 118-124.
The use of herbal supplements in North America is steadily growing and raises concerns about safety, efficacy, and how they affect safe patient care. The most notable and direct health risks associated with herbal supplements include hypertension, prolonged bleeding, and the potential for drug-herb interactions, which is of particular concern for patients undergoing anesthesia, both general and local anesthesia. In this article, four of the most commonly used herbs today in North America will be discussed: garlic, ginkgo, ginseng, and ginger. The pharmacology, benefits, and possible side effects of these herbs will be presented. Awareness of the rising use of herbs is important to prevent, recognize, and treat potential problems that can arise from herbal preparations taken alone or in conjunction with prescription medications.

134. Sproat, C., S. Beheshti, et al. (2009). **"Should we screen for hypertension in general dental practice?"** *Br Dent J* **207**(6): 275-277.
Hypertension is reported by the World Health Organisation as one of the most important causes of premature morbidity and mortality, although it is often asymptomatic. Approximately 40% of the UK population are thought to be affected, however, only one third of these are currently detected. Dental practice offers an ideal opportunity to screen for hypertension, due to the large cohort of the general population who regularly attend. A pilot study was carried out to screen for hypertension and associated risk factors in 114 consecutive patients who attended a city general dental practice. Results revealed that 39% (44) of the population screened had a high blood pressure reading but only 18% (8) of these were previously diagnosed as hypertensive, and 16% (7) had systolic readings greater than 160 mmHg. Of those currently receiving treatment for hypertension, the blood pressure was still elevated in 63% (5). This suggests that screening for hypertension in general dental practice may be of benefit to the population at large.
135. Srinivasan, N., M. Kavitha, et al. (2009). **"Comparison of anesthetic efficacy of 4% articaine and 2% lidocaine for maxillary buccal infiltration in patients with irreversible pulpitis."** *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* **107**(1): 133-136.
OBJECTIVE: The purpose of this prospective, randomized, double-blind study was to compare the anesthetic efficacy of 4% articaine and 2% lidocaine (both with 1:100,000 epinephrine) for buccal infiltration in patients experiencing irreversible pulpitis in maxillary posterior teeth. STUDY DESIGN: Forty patients with irreversible pulpitis in first premolar or first molar were divided into 4 study groups and received buccal infiltration of either 4% articaine or 2% lidocaine in a double-blind manner. Endodontic access was begun 5 minutes after solution deposition. Success was defined as no or mild discomfort (VAS recordings) during the endodontic procedure. RESULTS: The success rate for maxillary buccal infiltration to produce pulpal anesthesia using articaine was 100% in first premolar and first molar, and for the lidocaine solution, success rate was 80% in first premolar and 30% in first molar. There was high significant difference between the articaine and lidocaine solutions (ANOVA; $P < .001$). CONCLUSION: The efficacy of 4% articaine was superior to 2% lidocaine for maxillary buccal infiltration in posterior teeth.
136. Sullivan, A. L., C. Morgan, et al. (2009). **"Dental professionals' knowledge about treatment of patients with spinal cord injury."** *Spec Care Dentist* **29**(3): 117-122.
This study investigated the knowledge and training of dental professionals to competently serve persons with spinal cord injuries (SCI). Fifty dental clinics were approached to complete a survey containing questions regarding their special needs training. From the 35 completed surveys, descriptive quantitative data were analyzed. The majority of professionals reported minimal exposure to special needs dentistry during their academic training. Further analysis revealed a lack of expertise in wheelchair transfers or knowledge of possible medical complications. This study suggests that additional training is needed if dental professionals are to comfortably and safely care for patients with SCI.
137. Thikkurissy, S. and S. Lal (2009). **"Oral health burden in children with systemic diseases."** *Dent Clin North Am* **53**(2): 351-357, xi.
Children who have systemic diseases face a burden of disease distinctly greater than their healthy counterparts. Neglect or delay of addressing this burden can lead not only to significant morbidity for the child, but also to family dysfunction. This article addresses issues salient to the understanding of oral health burden in children and families living with systemic disease. Topics include the parent as caregiver, children who have cerebral palsy, juvenile arthritis, developmental delay, and organ diseases.
138. van Dijk, M., A. Valkenburg, et al. (2009). **"Children with intellectual disabilities and pain perception: a review and suggestions for future assessment protocols."** *Eur Arch Paediatr Dent* **10**(2): 57-60.
AIM: This was to review what is known about pain assessment in children with intellectual disabilities and to translate findings into clinical dental practice. METHODS: Literature review. REVIEW: The association between anxiety and pain as reported in the literature was explored. The specific pain expressions for individuals with Down's syndrome and those with autism are discussed with available literature. Various pain assessment instruments for cognitively impaired children have comparable content but vary in number of items. However, none of these instruments has been tested or implemented in the dental setting. Five pain assessment instruments for children with intellectual disabilities are described in more detail and these instruments were primarily tested for postoperative children. There are only limited data available on their use in dental treatments. Suggestions for step-by-step implementation of pain assessment in dental practice are given. CONCLUSION: Further studies in dental practice are recommended to achieve optimal pain management during dental procedures in individuals with intellectual disabilities.

139. Van, T. T., L. K. Chiodo, et al. (2009). **"Informed consent and the cognitively impaired geriatric dental patient."** Tex Dent J **126**(7): 582-589.
 Many geriatric patients will have cognitive impairment, sometimes temporary and other times progressive. Dentists are challenged to evaluate for the presence of cognitive impairment that can affect the consent process. This review gives an overview of types of cognitive impairments, clues to recognizing these conditions, how they affect the dental consent process, and what makes an effective informed consent. When there is doubt of a patient's capacity to consent, prudence calls for stopping dental treatment and referring the patient for a medical evaluation.
140. Waldman, H. B., F. M. Hasan, et al. (2009). **"Down syndrome and sleep-disordered breathing: the dentist's role."** J Am Dent Assoc **140**(3): 307-312.
 BACKGROUND: Sleep apnea is a common sleep disorder characterized by sleep fragmentation, oxygen desaturation and daytime somnolence. It is common in people with Down syndrome, occurring in at least one-half of this population. METHODS: The authors review the clinical presentation of obstructive sleep apnea and its association with Down syndrome. RESULTS: The diagnosis and treatment of sleep-disordered breathing in the Down syndrome population reinforce the important role that dentists play in recognizing its association with comorbidities and daily cognitive and behavioral function. CONCLUSIONS: Sleep abnormalities in children with Down syndrome often are not cured by surgical procedures. These patients may not tolerate continuous positive airway pressure treatment, but they should benefit from the use of oral appliances. CLINICAL IMPLICATIONS: The dentist has an important role in enhancing the quality of life of patients with Down syndrome, especially in the recognition and treatment of sleep-disordered breathing.
141. Waldman, H. B. and S. P. Perlman (2009). **"Mega numbers, lobbying and providing care for individuals with autism."** J Okla Dent Assoc **100**(7): 16, 18-20.
 Lobbying is a competitive effort directed to reaching legislators who are attempting to balance the demands of individuals, organized groups, political parties, and the complex economic realities of our times. Unfortunately, the use of all-inclusive "mega numbers" (whether it is the millions of individuals with disabilities or the billions of dollars for needed services) is difficult for any person to place in proper perspective. As a result, the estimated 1.5 million children and adults with autism spectrum disorders and their families in the United States become just "numbers" - not actual people. The need is to somehow personalize these numbers if we are to bring increased attention to these individuals with special needs. Centers for Disease Control and Prevention and private research foundation data are used to illustrate an approach to better personalize the information for individual politicians and health practitioners.
142. Waldman, H. B., S. P. Perlman, et al. (2009). **"ADHD affects not only children, but also adults."** J N J Dent Assoc **80**(1): 25-28.
 Millions of children (and also adults) affected by attention deficit hyperactivity (ADHD) are members of families already receiving care in many dental practices. A review of national and state prevalence data, the impact of ADHD on children, youths and adults, and issues related to dental services are presented to provide a broad appreciation of the disorder beyond an individual dental practice. "...cost of illness' for ADHD was between \$36 and \$52 billion in 2005 dollars".
143. Waldman, H. B., S. P. Perlman, et al. (2009). **"Adults with special needs and proper dental care."** J Mass Dent Soc **58**(2): 16-19.
 The Special Olympics was founded by Eunice Kennedy Shriver in 1968 and has grown into a global movement involving 2.5 million athletes, in addition to millions of volunteers, family members, and friends. The international organization provides year-round sports training and athletic competition in a variety of Olympic-style sports for children and adults with intellectual disabilities. The year-round programs provide opportunities for participants to develop physical fitness, demonstrate courage, experience joy and participate in the sharing of gifts, skills, and friendship with their families, other Special Olympics athletes, and the community. Most important has been the opportunity to demonstrate what people with intellectual disabilities can do, rather than what they can't do.
144. Waldman, H. B., R. Rader, et al. (2009). **"Health related issues for individuals with special health care needs."** Dent Clin North Am **53**(2): 183-193, vii.
 More than 50 million individuals in the United States with developmental disabilities, complex medical problems, significant physical limitations, and a vast array of other conditions considered under the rubric of "disabilities" live in our communities, many as a result of deinstitutionalization and mainstreaming. Children and adults with special health care needs have become a much more integral and visible component of everyday life. This process represents an ongoing change in perceptions about individuals with disabilities and subsequent reform of policies concerning the rights and the principles of care for people with special needs. The reform was built upon an increased role for the family and community health practitioners in providing needed care.

145. Weaver, T. E. and A. Sawyer (2009). **"Management of obstructive sleep apnea by continuous positive airway pressure."** *Oral Maxillofac Surg Clin North Am* **21**(4): 403-412.
Obstructive sleep apnea (OSA) is a common problem, with 9% to 28% of women and 24% to 26% of males having apneic events at a treatable level, making this syndrome a serious public health issue. This article describes the outcomes associated with continuous positive airway pressure treatment, significance of the issue of poor adherence in OSA, discusses evidence regarding the optimal duration of nightly use, describes the nature and predictors of nonadherence, and reviews interventions that have been tested to increase nightly use and suggests management strategies.
146. Woolley, S. M., E. J. Hingston, et al. (2009). **"Paediatric conscious sedation: views and experience of specialists in paediatric dentistry."** *Br Dent J* **207**(6): E11; discussion 280-281.
OBJECTIVES: The objectives were three-fold: to investigate the level of conscious sedation training received prior to and during specialist training in paediatric dentistry; to establish the use of conscious sedation during and following specialisation; and to determine the attitudes of specialists in paediatric dentistry to conscious sedation. SUBJECTS AND METHODS: A self-administered postal questionnaire was sent to all specialists in paediatric dentistry registered with the General Dental Council in January 2008. Non-responders were contacted again after a four-week period. RESULTS: A response rate of 60% was achieved. Of the 122 respondents, 67 (55%) had received sedation training as an undergraduate; 89 (75%) had been trained during specialisation. All respondents performed dental treatment under sedation as a trainee and the majority used nitrous oxide inhalation sedation (NOIS). Over 90% of respondents felt that NOIS should be available to all children, both in appropriate primary care settings and in hospitals. One hundred and twenty-one (99%) respondents thought that all trainees in paediatric dentistry should have sedation training. CONCLUSIONS: The most popular form of sedation amongst specialists in paediatric dentistry was NOIS. However, some of the respondents felt that children should have access to other forms of sedation in both the primary care and hospital settings. Additional research on other forms of sedation is required to evaluate their effectiveness and safety.
147. Wynn, R. L. (2009). **"Calcium channel blockers and gingival hyperplasia--an update."** *Gen Dent* **57**(2): 105-107.
148. Wynn, R. L. (2009). **"Endocarditis-causing bacteria in the bloodstream after toothbrushing."** *Gen Dent* **57**(1): 7-9.
149. Yamanda, S., S. Ebihara, et al. (2010). **"Bacteriology of aspiration pneumonia due to delayed triggering of the swallowing reflex in elderly patients."** *J Hosp Infect* **74**(4): 399-401.
150. Yap, A. K. and I. Klineberg (2009). **"Dental implants in patients with ectodermal dysplasia and tooth agenesis: a critical review of the literature."** *Int J Prosthodont* **22**(3): 268-276.
PURPOSE: The aims of this article are to critique the available literature on dental implants in patients with ectodermal dysplasia (ED) syndrome and tooth agenesis, review the outcomes of implant therapy in these patients, and provide recommendations on the timing of implant placement for these patients. MATERIALS AND METHODS: Searches were performed using Medline, Embase, All EBM Reviews, and Pre-Medline for articles relating to implant patients suffering from ED. Articles unrelated to the topic of dental implants in patients with ED and tooth agenesis, without abstracts, or in languages other than English were excluded. Selected articles were graded according to levels of evidence based upon guidelines set forth by the Agency for Health Care Policy and Research. Articles found to have a level of evidence of IV were excluded from this study. RESULTS: The literature on dental implants in patients with ED and tooth agenesis was found to be scarce. No randomized controlled or case-controlled studies were found. Only 12 articles were found to satisfy all inclusion criteria. CONCLUSION: Implant survival rates vary between 88.5% and 97.6% in patients with ED and between 90% and 100% in patients with tooth agenesis. Implants placed in adolescent ED patients do not have a significant effect on craniofacial growth, while implants placed in ED patients younger than 18 years have a higher risk of failure.
151. Yarborough, C. S. (2009). **"The three Ts of giving."** *J Calif Dent Assoc* **37**(4): 271-274.
The profession of dentistry is recognized as one of the most trusted, honest, and ethical professions by many sources. But are we the most generous with the three Ts of philanthropic giving: time, talent, and treasure? We are fortunate to be able to do what we do and are rewarded accordingly. No matter what stage of dentistry our career is in, we should be able to give back to our profession, our communities, and society in one, if not all three, of the Ts of philanthropy.