Insufficient Evidence for Stabilization Splints

Insufficient Evidence to Support the Use of Stabilization Splint Therapy Over Other Interventions in the Treatment of Temporomandibular Myofascial Pain.

Thurman MM, Huang GJ:

J Am Dent Assoc 2009; 140 (December): 1524-1525

When assessing outcomes, it is imperative to know all the specifics of treatment design.

Background/Objective: This critical review article was based on a literature review article by Al-Ani, et al. published in the Journal of Dental Education (2005; 69 [11]: 1242-1250). The original article reviewed randomized controlled trials (RCT) seeking to measure the efficacy of the use of stabilization splints for the treatment of myofascial pain (MPD).

Methods: Only 12 RCTs qualified according to all inclusion criteria. The outcomes of wearing a stabilization splint were measured against outcomes of acupuncture, bite plates, biofeedback, visual biofeedback, non-occluding splints, relaxation, jaw exercises, and no treatment. A stabilization splint was defined in the original article as a hard acrylic splint that provides a temporary and removable ideal occlusion by covering all teeth on a given arch. This was said to be a centric relation (CR), Tanner-, Fox-, or Michigan-type appliance.

Results: The conclusion drawn in the original article was that stabilization splint therapy was no more effective than the other above-mentioned therapies. Thurman and Huang state that the etiology of MPD may be multifactorial, and that discluding stabilization splints reduce muscle hyperactivity while restoring neuromuscular balance.

Conclusions: While praising the strengths of the review system, the authors were critical of the evidence presented in the studies reviewed. They were most critical of the randomization and concealment procedures used in the blinding procedures. Stabilization splints were shown to decrease symptoms. There is also a placebo effect involved with TMD treatments, and other studies have shown that there is no increased benefit to the use of stabilization splints in addition to palliative therapy.

Reviewer's Comments: It is extremely difficult to set up an evidence-based trial for the treatment of a chronic pain condition that, by nature, varies temporally in intensity. By blinding evaluators, we lose the ability to distinguish patients on an individual basis. Some authors and evaluators have prejudices in both directions about how beneficial these treatments are, and these preconceptions can hardly be overlooked in study design and evaluation. How do we evaluate the effectiveness of an appliance versus no appliance when the patients obviously know whether they are receiving treatment? That being said, my biggest criticism is that there was no description of the CR position used or the technique to achieve it. The definition of CR has changed at least 3 times in my career, and I have observed over that time that an emphasis on posterior positioning has given way to a superior positioning and now to a braced-against-the-eminence positioning. Observing the attempts of multiple practitioners to achieve this CR position has led me to believe that there is certainly not a clear inter-or intra-operator consistency. (Reviewer-Charles R. Hoopingarner, DDS).

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Keywords: Splint Therapy, TMD

Print Tag: Refer to original journal article
Resin-Based Composites--Replace or Repair?

A Long-Term Evaluation of Alternative Treatments to Replacement of Resin-Based Composite Restorations: Results of a Seven-Year Study.

Gordan VV, Garvan CW et al:


Many resin-based composites may be repaired, extending their life span without completely replacing the restoration with loss of additional tooth structure.

Background: Many resin-based composite restorations (RBCs) age, wear, or fail in different manners. Usually, replacement of the restoration has been the preferred solution of practitioners.

Objective: To determine the most frequent condition cited as a failure of composite restorations, and to conduct a survival analysis using U.S. Public Health Service (USPHS) criteria.

Design: 7-year prospective clinical study.

Participants: 37 patients (19 females, 18 males) ranging in age from 27 to 78 years were included in the study.

Methods: A total of 88 teeth were included, and the authors assigned the restorations to 1 of 5 groups: repair, sealing, refinishing, replacement, or no treatment. To be included, the teeth had to have a baseline score of Bravo on the USPHS modified scale in 1 or more areas. Examiners displayed a 92% agreement rate and assigned scores at various time intervals over 7 years. Any restoration given a Charlie rating was considered a failure. Proper statistical analysis was performed with \( P <0.05 \) considered significant.

Results: The reasons for replacement consideration were marginal discoloration in 60.2%, marginal degradation in 20.5%, and color mismatch in 19.3%. Most restorations showed color degradation, marginal adaptation, staining, and luster. No failures occurred in the repair or sealing groups. There was an 18% failure rate for refinishing, 21% for replacement, and 23% for no treatment.

Conclusions: It is believed that repair, sealing, or refinishing breaks the cycle of restoration, preserves tooth structure, and produces less overall stress on the tooth. Removal of only the diseased portion of the tooth with repair was more stable than replacement in this study. Minimally invasive procedures should be attempted before replacement of restorations. This is particularly true in restorations that have localized defects.

Reviewer's Comments: This very interesting article works off the premise that preservation of tooth structure and diminution of trauma to the tooth are very positive benefits. While the overall number of teeth included in this sample was relatively small, it is appreciated that any study lasting 7 years is to be commended. Interestingly, the repair group’s longevity was longer than that of the replacement group. Certainly, when practical for localized defects, minimalist treatment is indicated. When considering color degradation, it is also important to determine if it is in an aesthetically important or critical area. (Reviewer-Charles R. Hoopingarner, DDS).

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Keywords: Resin-Based Composites, Repair, Composite Longevity

Print Tag: Refer to original journal article
Transitioning an Impacted Cuspid Can Be Predictable Undertaking

**Background:** Canines play an extremely important role in facial form and aesthetics and are key to functional occlusion. Because they develop deep in the maxilla and have the longest path to travel, disturbances in the eruptive process are common.

**Design/Objective:** This article is a literature review of the clinical and radiographic studies and case reports of impacted maxillary canines, along with suggestions on how to properly manage the impactions.

**Results:** Canine impaction occurs in 2% of the population, with females being affected twice as often as males. Maxillary impaction is twice as frequent as mandibular impactions, and only 8% of cases are bilateral. One third of cases are positioned labially, and two thirds are positioned palatally. Various etiologic theories exist including arch length discrepancy, genetic predisposition, and displaced guidance. Impaction is usually asymptomatic but can cause loss of arch length, cystic formation, root resorption, migration, and altered eruptive paths. Definitive diagnosis is accomplished radiographically, with cone-beam CT becoming the most appropriate technique. Preventing the impaction is the preferred treatment. It has been suggested that, if not previously lost, the primary canine should be extracted at age 11 years. If the canine is positioned beyond the midline of the root of the lateral or is inclined >31%, the chances of successful eruption are greatly decreased. If prevention fails, then orthodontic treatment followed by surgical exposure is indicated. Depending on the level of the tooth, a bonded attachment may be necessary. The criteria for exposure technique are labiolingual position, vertical position relative to the mucogingival junction, amount of gingiva present, and the mesiodistal position of the crown. The techniques used to uncover the teeth are gingivectomy, apically positioned flap, and closed eruption. It may be necessary to move a palatally impacted canine distally or medially before moving it incisally or buccally in the eruptive process.

**Conclusions:** Early recognition is essential, and timely removal of primary cuspids is the most effective prevention. Appropriate surgical and orthodontic techniques can minimize negative periodontal consequences of treatment.

**Reviewer’s Comments:** This article is an excellent summary of resources available and provides more than a definitive treatment recommendation. It is helpful in coaching the general dentist in early recognition and emphasizes early referral. (Reviewer-Charles R. Hoopingarner, DDS).

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Keywords: Impacted Canines, Surgical Techniques, Orthodontic Techniques

Print Tag: Refer to original journal article
Occlusal Contacts May Be the Root of Periodontal Damage

The Association of Occlusal Contacts With the Presence of Increased Periodontal Probing Depth.
Harrel SK, Nunn ME

Balancing interferences cause more periodontal damage than smoking, male gender, and poor oral hygiene combined.

**Background:** There is conflicting evidence that some occlusal contacts are associated with accelerated bone loss and tooth mobility.

**Objective:** To determine the relationship between occlusal contacts and probing depths, width of attached gingiva, and periodontal prognosis.

**Methods:** All patients treated in 1 private periodontal practice and who had 2 complete periodontal evaluations at least a year apart without periodontal treatment in between were included. Subjects all had moderate to severe periodontal disease with at least 1 pocket depth (PD) >6 mm and radiographic evidence of bone loss. Occlusal analysis included initial contact, discrepancies between initial contact in centric relation (CR) and centric occlusion (CO), amount and direction of movement between CR and CO, and contacts in lateral and protrusive movements. Patient characteristics studied included age, gender, smoking, medical conditions, medications used, oral hygiene, and history of parafunctional habits. For each tooth, prognosis (good, fair, poor, or hopeless), PD (in mm) at 6 sites, bifurcation (Glickman class I to III), mucogingival defects, width of keratinized tissue, mobility (Miller 1-3), and initial prognosis were recorded. Relationships between all occlusal contacts to initial PD, prognosis, and width of keratinized tissue were compared on a tooth-by-tooth basis using generalized estimating equations to adjust for the lack of independence of the tooth data among patients.

**Results:** 85 patients with 2219 teeth participated; 12% of teeth had centric prematurity, 57% had only contact in CO, 32% had working contacts only, and 11% had balancing contacts with or without working contacts. Teeth with centric prematurity had 0.9 mm greater PD than those without ($P<0.0001$); this contributed more to increased PD than smoking or poor oral hygiene. Anterior teeth with protrusive contact had 0.18 mm less PD compared to those without contact ($P=0.0076$). Posterior teeth with protrusive contact had 0.51 mm greater PD than those without protrusive contact ($P<0.0001$). Balancing contacts with or without working contacts contributed to at least 1 mm greater PD ($P<0.0001$). Balancing contacts contributed more to increased PD than did smoking, poor oral hygiene, or male gender combined and was associated with a 5.1 to 5.9 times increased risk of a less than "good" initial prognosis. Vertical slides were also associated with much higher risk of having a less than "good" initial prognosis. The width of keratinized gingiva was not associated with any of the occlusal contacts studied.

**Conclusions:** Occlusal discrepancies between CR and CO, balancing contacts, and posterior contacts in protrusion are all associated with increased pocket depths and a less than "good" prognosis. Treatment of occlusal discrepancies should be included in periodontal therapy.

**Reviewer's Comments:** The same examiner performed the periodontal assessment and the occlusal analysis, so the possibility of bias cannot be excluded. However, these data support the inclusion of occlusal analysis in comprehensive periodontal diagnosis and treatment. (Reviewer-Carol Anne Murdoch-Kinch, DDS, PhD).

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**Keywords:** Risk Indicators, Periodontal Attachment Loss, Occlusal Discrepancies

**Print Tag:** Refer to original journal article
Background: The prognosis of dental replantation after traumatic avulsion depends on tooth storage conditions that preserve periodontal ligament cell viability and prevent bacterial contamination. Euro-Collins solution, a transport medium for organ transplants, may provide better results than currently available storage media such as cow’s milk.

Objective: To evaluate the healing of dog teeth replanted after storage in Euro-Collins solution or cow’s milk.

Methods: Under general and local anesthesia, the maxillary central and lateral incisors and maxillary and mandibular first and second premolars were endodontically treated on 4 young adult mongrel dogs, each weighing 8 to 16 kg. Two weeks later, the teeth were separated from the gingival tissue using a scalpel and then were gently luxated and removed. A total of 80 roots (20 per dog) were used. The premolar roots were sectioned using a diamond bur with copious water cooling. Teeth were randomly assigned to 1 of 4 groups: GI (negative control), immediate replantation; GII, bench dried for 2 hours before replantation; GIII, immersed in 10 mL whole bovine milk at 4°C for 8 hours; or GIV, immersed in 10 mL Euro-Collins solution at 4°C for 8 hours. Teeth in GIII and GIV were then replanted after clot removal with sterile saline irrigation. Animals were given an intramuscular dose of benzathine G penicillin 300,000 IU and fed a pasty diet for the first 72 hours. Maxillary anterior teeth were splinted to adjacent teeth with wire. Premolars were splinted with light-cured composite. Splints were removed at 14 days. Teeth were extracted 90 days after replantation and processed for histopathologic examination under polarizing microscope. Inflammatory root resorption, replacement resorption, and total area of root-resorbed root dentin and cementum were analyzed.

Results: 2 roots were lost in the GI group (immediate replantation) due to fracture during extraction. This group had the highest area of non-resorbed dentin and the lowest incidence of root resorption and ankylosis. GII (dry storage) had the most severe root resorption (with more than half of the teeth affected) and had the highest incidence of replacement and inflammatory resorption; this was significant ($P < 0.05$). GIII (bovine milk) showed moderate repair, similar to GI and GIV, but replacement resorption was seen. GIV (Euro-Collins solution) showed intact dentin in almost all specimens. Repair was similar to GI and GIII. One root had inflammatory root resorption.

Conclusions: Teeth replanted immediately after extraction showed the best repair and the least resorption. Teeth stored in Euro-Collins solution responded significantly better than those in cow’s milk or dry storage, similar to those replanted immediately.

Reviewer’s Comments: Euro-Collins solution was shown to be an adequate medium for storage of avulsed teeth for up to 8 hours before replantation, performing better than cow’s milk. Clinical human trials may be indicated to provide the definitive evidence to support its routine use. (Reviewer-Carol Anne Murdoch-Kinch, DDS, PhD).

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Keywords: Dental Trauma, Tooth Replantation

Print Tag: Refer to original journal article
Background: The popularity of tooth whitening has led to a variety of bleaching methods from which our patients can choose. These range from professionally dispensed at-home whitening using custom trays or in-office whitening to a myriad of products prevalent over the counter (OTC).

Objective: To compare the clinical efficacy of 3 different methods of bleaching.

Participants/Design: 75 subjects with teeth A2 or darker were included in this clinical study.

Methods: The subjects were evenly divided into 1 of 3 bleaching groups: (1) at-home/10% carbamide peroxide; (2) in-office/15% hydrogen peroxide (H₂O₂); or (3) OTC/6% H₂O₂ strips (Whitestrips). Color measurements were taken at baseline, immediately after treatment, and 3 months after treatment. The subjects in the at-home group wore custom trays overnight for 2 weeks. The in-office group wore a tray 3 times for 45 minutes over 3 weeks. The OTC group used Whitestrips for 30 minutes twice a day for 2 weeks.

Results: Significant differences in efficacy were found between methods immediately after treatment and 3 months later. At-home and in-office bleaching methods were shown to be more efficacious than OTC in terms of reducing Δb (less yellow) immediately and after 3 months of treatment. At-home bleaching was most effective in terms of "whitening" (ΔL-increased lightness) both immediately and after 3 months. Color changes were also better for at-home bleaching for ΔE (total color difference) and ΔVita (shade guide changes).

Conclusions: At-home bleaching with 10% carbamide peroxide applied overnight in a custom tray for 2 weeks and in-office bleaching with 15% hydrogen peroxide 3 times for 45 minutes were each superior to OTC Whitestrips when evaluated immediately after treatment or 3 months later.

Reviewer's Comments: Tooth whitening is one procedure that generates a great deal of interest and query from our patients. The dental practitioner needs to be aware of the various treatment options for whitening and be able to advise patients on treatment based on the evidence. This study provides evidence that supports the efficacy of dentist-supervised/dispensed bleaching in favor of OTC Whitestrips. (Reviewer-Joe C. Ontiveros, DDS, MS).

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Keywords: Bleaching, In-Office, Custom Tray, OTC

Print Tag: Refer to original journal article
Green tea may help prevent acid erosion for patients with exposed dentin.

**Background:** The role of endogenous enzymes in contributing to erosive tooth wear is not well understood. The host-derived enzymes found in dentin known as matrix metalloproteinases (MMPs) are believed to be responsible for degradation of the collagen matrix when activated at a low pH. A mouth rinse or dietary drink that could inhibit MMPs may help prevent dental erosion. Chlorhexidine and green tea extract have been shown to inhibit MMPs in the laboratory.

**Objective:** To clinically investigate the ability of chlorhexidine and green tea to reduce erosive dentin wear compared to fluoride.

**Participants/Methods:** 12 subjects were enrolled in the study. Removable appliances containing 4 dentin samples (4 mm x 4 mm x 2 mm) embedded in the appliance were fabricated. The appliances were worn by the subjects for 5 days, periodically immersing them in Coca-Cola (pH, 2.6) for 5 minutes, immediately followed by a 60-second rinse with 1 of 4 solutions: (1) green tea extract solution; (2) 0.12% chlorhexidine; (3) 250 ppm fluoride; or (4) water (control). This was repeated 4 times a day. The subjects performed routine tooth brushing twice a day on half of the teeth with the appliance using an electric toothbrush. Profilometric tooth wear was then measured on the abraded and erosion-only teeth for all groups.

**Results:** Teeth brushed with the electric tooth brush in combination with erosion showed greater dentin loss compared to the erosion-only group. All solutions tested were effective in reducing dentin loss compared to the water control group. While there was no significant difference among the test solutions, green tea showed the least dentin wear, followed by chlorhexidine and fluoride.

**Conclusions:** Green tea or chlorhexidine solutions were shown to be as effective as fluoride in preventing tooth wear caused by acid erosion.

**Reviewer's Comments:** This study looks at the theory that acid erosion of dentin could be reduced by inhibiting the mechanism of endogenous enzymes, such as MMPs, through the use of green tea or chlorhexidine solution. Since direct measurement of enzymatic activity was not taken, no definitive conclusion could be made about the mechanism of action. Nonetheless, it was demonstrated that green tea, as well as chlorhexidine, can prevent dentin wear after an acidic challenge. Simply adding some green tea to your diet could make a big difference in your dental health. (Reviewer-Joe C. Ontiveros, DDS, MS).

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Keywords: Dentin Erosion, Green Tea

Print Tag: Refer to original journal article
Can Postop Sensitivity Be Reduced After Composite Restorations?

Effect of Glass-Ionomer Cement Lining on Postoperative Sensitivity in Occlusal Cavities Restored With Resin Composite—A Randomized Clinical Trial.
Burrow MF, Banomyong D, et al:

Oper Dent 2009; 34 (November-December): 648-655

No significant differences in the amount of postoperative sensitivity were seen in teeth restored with posterior occlusal composites whether or not a glass-ionomer liner, a self-etch adhesive, or a total-etch adhesive was used.

Background: Composite resin restorations are now used frequently in restoring posterior teeth. Resin composite has some limitations, as there are frequent reports of higher rates of postoperative sensitivity in teeth restored with composites than with those restored with amalgam.

Objective: To compare the effect of glass-ionomer lining, total-etch, and self-etch adhesives on this phenomenon. The goal would be to either reduce or eliminate this sensitivity with placement of these materials prior to incremental insertion of the composite resin.

Design: Controlled clinical trial.

Participants/Methods: 70 patients who had moderate to deep occlusal caries on at least 1 molar were treated. The caries was removed, and participants were stratified into 4 groups. Teeth were restored either with a 2-step total-etch adhesive, a glass-ionomer liner then bonded with a total-etch adhesive, a 2-step self-etch adhesive without a lining, or using a liner bonded with a self-etch adhesive. Teeth were then incrementally filled with a nanofilled hybrid resin composite, light-cured, finished, and polished. Each patient was recalled at 1-week and 1-month intervals to assess for postoperative sensitivity.

Results/Conclusions: Regardless of whether a glass-ionomer liner was used, there was not a significant difference in the amount of tooth sensitivity that patients experienced. No differences were reported in postoperative sensitivity between the 2 types of adhesive systems. There also was no significant difference in postoperative sensitivity whether or not a self-etch or total-etch adhesive was used at all. None of the participants experienced any sensitivity during normal function at the 1-month recall.

Reviewer's Comments: This study shows dissimilar results to several other previously reported studies. Other studies have shown reduced postoperative sensitivity in teeth where cavities were lined with glass ionomers or total-etch adhesives. This study was carried out under controlled circumstances by experienced clinicians in an academic environment by dentists who were familiar with these materials. A clinical trial using this protocol in a general practice should be carried out before concluding that use of glass-ionomer cavity liners and self- and total-etching techniques have no influence on presence or absence of postoperative sensitivity in teeth restored with composite resin. (Reviewer-Edward N. Friedman, DDS).

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Keywords: Glass-Ionomer Cement, Postoperative Sensitivity, Occlusal Caries, Resin Composite

Print Tag: Refer to original journal article
Minimizing Bacterial Contamination Increases Success Rate of Pulp Capped Teeth  

Keys to Clinical Success With Pulp Capping: A Review of the Literature.  
Hilton TJ:  
Oper Dent 2009; 34 (September-October): 615-625

A well-sealed restoration in a pulp capped tooth provides the best chance of achieving pulpal survival.

Objective: To review abstracts on pulp capping in order to obtain evidence-based data on the success of pulp capping in a clinical setting. Discussion: These reviews compare direct and indirect pulp capping and several types of pulp capping materials. A direct pulp cap involves removal of decay followed by placement of a medicament over the exposed pulp. In an indirect pulp cap, a sealer or cavity liner is placed over residual caries to avoid direct pulp exposure. The authors presented studies where, after 4 to 12 months, these teeth were re-entered and reassessed. Changes in the lesion color, consistency, and decrease in bacteria was seen. They concluded that complete caries removal was not needed for success, providing the restoration was sealed. The goal with direct pulp capping was to encourage healing and growth of reparative dentin. Mechanical exposures are more likely to be successful than those due to caries, which allow for higher levels of bacterial pulpal invasion. Pulpal bleeding must be controlled to obtain an adequate seal. Four materials used for pulp capping were compared. Zinc-oxide eugenol (ZOE) is highly cytotoxic, and its efficacy in excluding bacteria decreased over time. Glass ionomer is slightly less cytotoxic and chemically bonds to tooth, providing an excellent bacterial seal. Neither ZOE nor glass ionomers promote the formation of a dentinal bridge over the exposure. Adhesive systems create toxic effects on the pulp. Both etch and primers are vasodilators, causing contamination of the dentin and decreasing adhesion. The resin components reduced pulpal immune response, causing chronic inflammation. The authors state that calcium hydroxide is the "gold standard" of direct pulp capping materials. It has excellent antibacterial properties and a long track record of success. Although it does not provide a good seal, it does promote dentin bridging. Mineral Trioxide Aggregate (MTA) has been used for direct pulp capping. In the short term, it produces results comparable to calcium hydroxide, but has a longer setting time. Conclusions: Indirect pulp cappings may be performed on an asymptomatic tooth. Its survival can be maintained if a well sealed restoration is placed over the residual caries. Calcium hydroxide is the best material for direct pulp capping at the present time, providing the best measure of success if used in coordination with a well sealed restoration. Zinc-oxide eugenol, glass ionomers, and adhesives should not be used for direct pulp capping.

Reviewer's Comments: This article discusses the results of numerous evidence-based studies of direct and indirect pulp capping. Appropriate case selection, as well as materials used, affects the clinical success of the procedure. Additional studies are needed using MTA as a direct pulp capping agent. As of now, too few specimens were studied and its long-term record needs to be established. (Reviewer-Edward N. Friedman, DDS).

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Keywords: Pulp Capping, Sealed Dental Caries

Print Tag: Refer to original journal article
Avoid Using 30-Gauge Needles in Children for Inferior Alveolar Blocks

Pogrel MA:

J Am Dent Assoc 2009; 140 (December): 1517-1522

Background: Needle breakage is a rare occurrence, but if a local anesthetic needle breaks during an injection, it is important to know the potential outcomes and recommended protocols for management of this serious complication. 

Objective: To review the etiology factors, management protocols, and outcomes in a review of cases of breakage of dental local anesthetic needles. 

Design: Retrospective case series review.

Methods: The author of this report reviewed 16 cases of dental local anesthetic needle breakage that were reported to a U.S. dental school oral surgery clinic from 1983 through 2008.

Results: 16 cases of dental local anesthetic needle breakage were included in this study, and the dentist in each case was contacted by the author to determine etiologic factors and outcomes. Nearly all (15 of 16) cases involved the inferior alveolar nerve block, and the vast majority (13) involved 30-gauge needles. Approximately one third (5 of 16) cases involved children aged <10 years, with patient ages ranging up to 28 years. The dentists who performed the injections in which needles broke frequently indicated that the patient suddenly moved while the needle was being repositioned, and in 9 cases, the needle was intentionally bent prior to the injection. In no case did the dentist attempt to retrieve the needle. In all cases, the broken needles were anatomically located using plain-film panoramic radiographs and computed tomography. All broken needles were retrieved surgically with the patient under general anesthesia, and the outcomes were generally characterized as "good," although limitation of mouth opening was cited as a common complication postoperatively.

Conclusions: The author estimates that needle breakage may be as rare in 1 in 14 million inferior alveolar nerve blocks, but because of the need for surgical retrieval, this complication should be prevented by avoiding 30-gauge, short needles for block injections, and avoiding bending needles prior to injections, inserting needles to their hubs, and by taking extra precautions when performing block injections in anxious children. If a needle breaks, the author recommends that the patient be informed and be directed to avoid mouth opening, and referred immediately to the appropriate specialist. In virtually all cases, retrieval is preferable to allowing the needle to remain in situ.

Reviewer's Comments: Breakage of a dental local anesthetic needle that cannot be simply retrieved is a complication similar to local anesthetic-associated permanent nerve injury—a very rare occurrence, but one that carries many negative consequences when it involves you and your patients. We are indebted to the author for summarizing this relatively large case series of such a rare treatment complication. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Local Anesthetics, Nerve Block, Dental Needles

Print Tag: Refer to original journal article
When undertaking complete denture therapy, lower ridge anatomy, good fabrication technique, and psychological evaluation are important considerations.

**Background:** Complete dentures remain an important treatment modality. This is particularly true for edentulous patients who may not be financially capable of obtaining implant-supported overdentures and/or who may have medical conditions that preclude implant placement. In such patients, it is important to understand favorable and unfavorable prognostic indicators for complete denture therapy.

**Objective:** To review the available published English-language literature on prognostic indicators that can be used to predict success or failure of complete dentures.

**Design:** Expert literature review and summary of evidence.

**Methods:** Keyword search of an electronic database (Ovid) from 1988 to the present and hand search of related articles.

**Results:** 3 randomized controlled trials (RCTs) related to complete dentures were identified, and 19 clinical, non-experimental (no randomization of subjects, small cohort sizes, etc.) studies were included, along with 4 review articles and consensus papers.

**Conclusions:** 9 independent prognostic factors were summarized. The evidence indicates that age alone is neither a positive nor a negative predictor of success. For patient demographics, weak evidence indicates a minor influence of this factor on patient satisfaction with complete dentures. For psychological factors and personality, neurosis may predict dissatisfaction with complete dentures. For previous denture-wearing experience, the evidence is contradictory and precludes any firm conclusions regarding this predictive factor. The same is true for patients’ expectations and attitudes regarding complete dentures. For residual ridge form and anatomy, there is limited evidence from 2 well-designed studies that lower ridge anatomy and accuracy of jaw relations are important. With regard to fabrication technique, the available evidence suggests that complex techniques offer no advantages over simpler ones (eg, those that did not utilize face bow and remounting). For quality of dentures and changes with time and aesthetics, the paucity of consistent literature precludes firm conclusions regarding these complex, multifactorial indicators. **Conclusions:** Successful prosthodontic therapy depends on multiple variables, and there is a subset of patients who will not successfully adapt to any prosthesis, particularly in the mandible.

**Reviewer’s Comments:** This is a well-executed literature review but one that, unfortunately, confirms there is little scientific evidence on which to base the prognosis for a given patient for complete denture therapy. However, this review confirms the importance of the lower residual ridge, psychological factors, and good fabrication technique. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Complete Dentures, Prognosis, Review

Print Tag: Refer to original journal article
Can Prophylactic Antibiotics Prevent BRONJ After Extraction?


Lodi G, Sardella A, et al:


Bacteria and other organisms may play an important role in the development of BRONJ.

**Background:** Bisphosphonate-related osteonecrosis of the jaw (BRONJ), a complication of intravenous bisphosphonate (BP) therapy, is often triggered by dental extractions or dental infection. Prevention is essential because treatments are often ineffective.

**Objective:** To determine if a preventive protocol of prophylactic antibiotic therapy, topical chlorhexidine, and primary wound closure is effective in preventing the development of BRONJ after dental extractions in patients taking intravenous BP.

**Participants:** Consecutive patients on intravenous BP for >3 months who had 1 or more teeth extracted at the University of Milan between May 2006 and January 2009 were studied.

**Methods:** For 2 to 3 weeks before surgery, patients rinsed with 0.2% chlorhexidine mouth rinse daily, and hygiene treatment was performed 2 to 3 weeks before surgery. From 3 days before to 17 days after surgery, all patients took 1 g amoxicillin every 8 hours. Teeth were extracted atraumatically after reflection of full-thickness periosteal flap, sockets were debrided, and the flap was advanced coronally and sutured in place. Patients applied 1% chlorhexidine gel 3 times a day for 17 days. Sutures were removed at 1 week. Patients were reassessed at 1, 2, and 4 weeks and at 2, 3, 6, and 12 months. Complications were recorded. BRONJ was defined as exposed necrotic bone that persisted for >8 weeks.

**Results:** 23 patients (15 women, 8 men) with a mean age of 68.2 years (range, 44 to 83 years) participated. Of these 23 patients, 20 took zoledronate, 2 took pamidronate, and 1 used clodronate for a mean of 17.5 months (range, 3 to 36 months). Five patients already had evidence of BRONJ caused by extractions before the study. Thirty-one interventions were performed: 23 involved a single tooth; 4 involved a single root; 3 involved 2 teeth; and 1 involved 3 teeth and 2 roots (total of 38 extractions). The majority of teeth were molars (n=25); 8 were premolars, and 4 were canines. No intraoperative complications occurred. Mean follow-up was 229.5 days (range, 14 to 965 days). One small area of exposed bone was seen after 1 month but resolved at 2 months. All extraction sockets healed normally, including in the 5 patients who already had BRONJ. BPs were not stopped in any patient.

**Conclusions:** BRONJ after dental extractions can be prevented by following a protocol that includes prophylactic antibiotics before and after surgery, primary closure of wounds, and application of topical antimicrobial therapy.

**Reviewer’s Comments:** The exact incidence of BRONJ after dental extractions in patients on intravenous BPs is not known. Because there was no control group, the actual effect of the preventive protocol cannot be determined. These data will help design the definitive clinical trials needed to determine efficacy. (Reviewer-Carol Anne Murdoch-Kinch, DDS, PhD).

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Keywords: Bisphosphonate-Related Osteonecrosis, Jaws, Dental Extractions

Print Tag: Refer to original journal article
Periodontal surgery can be safely performed in patients on warfarin with an INR <3.0, provided local hemostatic measures are used.

**Background:** Dental extractions can be safely performed in patients on oral antithrombotic therapy if local hemostatic measures are used and the international normalized ratio (INR) is 3.0 to 4.0 or less. This has not been determined for periodontal treatments.

**Objective:** To determine the effectiveness of hemostasis methods during periodontal treatment in patients on oral antithrombotic agents.

**Design/Methods:** Retrospective study of the records of patients on oral antithrombotic therapy who had periodontal treatment under local anesthesia at one medical center between April 2003 and March 2009. Those with liver disease and hematologic disorders were excluded. Gender, age, drug and dose, periodontal therapy, hemostasis methods, and incidence of postoperative hemorrhage were recorded. Periodontal condition was determined as follows: pocket depth (PD) ≤3 mm, mild; PD >3 mm but ≤6 mm, moderate; and PD >6 mm, severe. Red blood cell count, platelets, hemoglobin, and prothrombin time-INR (warfarin patients) were measured on the day of treatment. All patients were tested for hepatitis B and C and liver function. Infective endocarditis prophylaxis was provided as needed. Loxoprofen or acetaminophen was provided for pain. After scaling or curettage, oxidized cellulose (OC) threads were inserted into pockets and compressed for 10 minutes with gauze. After flap surgery or alveoloplasty, OC was inserted, flaps were sutured, and the site was compressed for 10 minutes. After gingivectomy, OC was placed on the wound and compressed for 10 minutes. If oozing persisted, it was compressed for 10 minutes and/or cauterized, or a periodontal pack splint was placed for 1 week. Hemostasis was assessed by telephone the night of and morning after treatment, and examination was performed after 1 week.

**Results:** 139 patients (74 men and 65 women) were studied. Mean age was 54.7 years (range, 14 to 84 years). A total of 155 procedures were performed; 40% of cases were mild, 46% were moderate, and 13.5% involved severe periodontal disease. All patients except one had platelets >10 x 10^4/mm^3. Sixteen patients were infected with hepatitis B or C with no liver dysfunction. Thirty-three patients on warfarin had 72 periodontal treatments. Forty-nine scalings (INR, <4.82) and 52 periodontal surgeries (INR, <2.97) were performed. Twenty-seven patients on warfarin and antiplatelet therapy had 29 treatment procedures. Forty-nine patients on antiplatelet therapy had 54 procedures. Electrocautery controlled bleeding in 30% and splints were effective in 70% of surgeries. Posttreatment hemorrhage occurred in 2 of 155 procedures (2%): 1 after scaling for severe gingivitis (INR, 1.66; platelets, 185,000/mm^3) and another 3 days after flap surgery on 3 teeth (INR, 2.97; platelets, 56,000/mm^3).

**Conclusions:** Scaling can be safely performed in patients on warfarin (INR, <4.0) and/or antiplatelet therapy. Periodontal surgery can be safely performed on patients with an INR <3.0. Local hemostatic measures are effective.

**Reviewer's Comments:** This study provides the necessary evidence to support the safety of providing periodontal therapy, including surgery, without modifying the dosage of oral antithrombotic therapy if the INR is <3.0. This represents the majority of patients on therapeutic levels of these drugs. (Reviewer-Carol Anne Murdoch-Kinch, DDS, PhD).

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Keywords: Oral Antithrombotic Drugs, Periodontal Therapy, Postoperative Hemorrhage

Print Tag: Refer to original journal article
Best survival rates were seen when veneers included supragingival enamel margins, proximal chamfer design, and incisal overlapping.

**Background:** The success of the bonded porcelain veneer restoration can be influenced by several variables related to preparation design, tooth location, and bonding substrate.

**Objective:** To investigate the clinical survival rate of porcelain veneers as influenced by preparation design features and location.

**Methods:** 40 subjects were treated with a total of 200 porcelain veneers. All teeth were prepared by one operator. Pressed feldspathic (Empress) was sandblasted, etched, and bonded with an etch-and-rinse adhesive (Excite) and dual-cure resin cement (Variolink II). Patient follow-up times ranged from 12 to 72 weeks. Clinical survival rates were measured based on several variables related to preparation design and location.

**Results:** The mean survival time for all restorations was 68.6 weeks. There was no significant difference in survival rates for overall preparation depths between enamel (93.2%) and dentin exposed (95.7%) preparations. However, there was a significant improvement in survival when the cervical margin remained in enamel as opposed to dentin. A significant difference in survival rate was also found for arch location maxillary (97.5%) over mandibular (95%), incisal finish design (incisal overlapping [97.8%] over incisal bevel [84.7%]), proximal finish (proximal chamfer [96.3%] over proximal slice [87.4%]), and gingival finish (supragingival [99.4%] over subgingival [approximately 50%]).

**Conclusions:** Preparation design features for porcelain veneers can significantly influence clinical survival rates. Best survival rates were seen when veneers included supragingival enamel margins, proximal chamfer design, and incisal overlapping.

**Reviewer's Comments:** It is important to note that the primary variable leading to clinical failures with porcelain veneers was when the margins were placed subgingival. Most frequently, the incisal butt-joint margin is recommended for the incisal margin design—it would have been good to see this design compared in this study. (Reviewer-Joe C. Ontiveros, DDS, MS).

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Keywords: Porcelain Veneers, Clinical Survival Rate, Preparation Design

Print Tag: Refer to original journal article
Light-cure resin infiltrates may prevent the progression of smooth surface caries and eliminate unsightly white spot lesions.

**Background:** A frequent problem seen after debonding orthodontic appliances is the formation of white spot lesions. If a prevention program is not successful in inhibiting the unsightly formation of these lesions, microabrasion or direct restorative treatment are among the standard methods typically considered for treatment today. These white spot lesions are a form of smooth surface caries. Laboratory research has been ongoing to investigate the use of low-viscosity resin infiltrants as a non-invasive approach to treating incipient carious lesions. A beneficial side effect of the infiltrant resin treatment is that the white opaque appearance purportedly blends better with the tooth after the resin infiltrates the porous body of the lesion.

**Objective:** To present a case study of treating white spot lesions with a premarket resin infiltrant material.

**Case Discussion:** Rubber dam was placed to isolate and clean the anterior teeth and 15% hydrochloric acid gel was applied to the white spot lesions for 2 minutes and rinsed for 30 seconds followed by application of ethanol for 30 seconds to remove the water from the lesions. Next, a low-viscosity light-cure infiltrant resin (premarket/DMG) was applied and allowed to penetrate for 5 minutes. The excess was removed with a cotton roll followed by light polymerization and polishing. Clinical photographs were taken to document the esthetic results immediately and after 10 months of service. The appearance of all the white spot lesions improved immediately after treatment. After 10 months, 1 tooth (of 6 noted in photos) presented with recurrent staining, while the remaining teeth appeared to remain stable.

**Reviewer's Comments:** The improved esthetics of the white spot lesions are impressive from the photographs presented in the case study. However, we must always proceed with caution when considering the results of a case study. The big question that still remains to be answered is: how long will the color be stable? I would like to see further clinical research in this area before making any promises to my patients—preferably from investigators who do not receive royalties from the manufacturer of the product as do the current authors. (Reviewer-Joe C. Ontiveros, DDS, MS).

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**Keywords:** White Spot Lesion/Infiltrant Resin, Incipient Caries, Smooth Surface Caries

**Print Tag:** Refer to original journal article
Can Dental Professionals Detect Cardiovascular Disease Risk?


Jontell M, Glick M:


Routine assessment of blood pressure and heart rate and a medical history are important prior to performing invasive dental treatments, but cannot be used alone to determine risk of CVD or the likelihood of medical intervention

**Background:** Dental offices routinely obtain medical histories from patients, but their patients would benefit from a reliable tool that converts the information into meaningful predictors of the risk of systemic diseases.

**Objective:** To determine whether general dentists can identify patient risk of fatal outcomes of cardiovascular disease (CVD) within a defined time period and to what extent the predictor might result in the patient obtaining medical intervention.

**Design:** Observational multi-center study of a single cohort of general dentistry patients.

**Participants:** Patients aged >45 years with no history of high blood pressure, hyperlipidemia, or diabetes, and no visit to a health care professional within 12 months preceding enrollment in the study.

**Methods:** Dental personnel in 10 Swedish dental offices were trained in assessing patient blood pressure point-of-care testing for blood glucose and total cholesterol. To minimize the influence of procedural stress on blood pressure measurements, this parameter was measured at the completion of the dental visit. A questionnaire included height, weight, physical activity, medications, smoking habits, exercise habits, and family history of CVD, and data were analyzed using a computerized CVD risk-assessment program (HeartScore). After a period of at least 6 months up to 1 year, patients were contacted by phone who had been determined to have a ≥10% risk of a fatal CVD event (HeartScore ≥10%) within 10 years and who had therefore been advised to seek medical care.

**Results:** 200 patients with an average age of 58 years (101 men, 99 women) completed the study. Twelve (6%) subjects, all of whom were men, had HeartScores >10%, indicating that 12% of men in the study were at elevated risk of dying from CVD within 10 years. No women had a score >5%. Exercise did not correlate with HeartScore. Of the 12 men at elevated risk of CVD, virtually all had elevated systolic and diastolic blood pressures, but no subject had abnormally elevated blood glucose levels. Half of these men received subsequent medical care, primarily consisting of administration of an antihypertensive drug.

**Conclusions:** Dental offices can, in fact, identify patient risk factors for CVD, but large-scale studies are needed to confirm the effectiveness of this approach.

**Reviewer’s Comments:** When you assess a patient’s blood pressure, heart rate, and medical history, you help to determine the ability of the patient to undergo dental care, but a comprehensive approach using blood chemistries and body mass and a standardized computer program is required to make predictions about patients’ future CVD risk. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Coronary Heart Disease, Risk Assessment, Cardiovascular Diseases, Health Promotion

Print Tag: Refer to original journal article
Background: Endodontic pathogens reside in biofilms, an environment that makes them more resistant to antimicrobial agents than they would be in a planktonic, or dispersed, state.

Objective: To characterize the responses of biofilms in an in situ model to common alkaline pH and common disinfectants used in endodontic treatment, including chlorhexidine.

Design: Microbiologic culture and sensitivity study.

Methods: 4 strains of bacteria (Enterococcus faecalis, Lactobacillus paracasei, Streptococcus anginosus, and Streptococcus gordonii) were isolated from patients undergoing endodontic treatment for persistent periapical infections, grown on biofilms, and subjected to exposure for 5 minutes to alkaline conditions (pH 12), 2.5% chlorhexidine gluconate, EDTA (50 mmol/L), or 1% sodium hypochlorite. Following exposure to these antimicrobial agents, cultured biofilms were characterized with fluorescence marking for live/dead cells and metabolic activity (dehydrogenase and esterase activity). Additionally, the biofilms were studied with confocal scanning laser microscopy to estimate biofilm volume (overall mass), substratum coverage (how efficiently the organisms colonize the biofilm substructure), and biofilm height. Each experiment was repeated 3 times to ensure reproducibility and statistical analysis of images was accomplished with image-analysis software.

Results: 1% sodium hypochlorite affected the membrane integrity of all organisms and removed most of the biofilm cells and appeared to have the greatest overall antimicrobial effect. However, EDTA and chlorhexidine were only partially effective, and strong alkaline pH had the least antimicrobial effect on the biofilms and organisms.

Conclusions: The biofilm system described in this study was capable of differentiating the effects of common antimicrobials on bacterial cell membrane integrity and in the detection of removal of bacterial cells from the biofilm.

Reviewer's Comments: Development of a reliable and reproducible culture technique for assessing the effectiveness of antimicrobial irrigants used in endodontics is an important tool, and while the results of the present study are preliminary, they seem to support the continued use of sodium hypochlorite solutions for irrigation of root canal systems during endodontic treatment. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Alkaline Resistance, Antimicrobial Resistance, Biofilm Model, Biofilm System, Biofilms, Environmental Changes, Image Analysis, Microbial Adaptation, Persistent Infections, Substrate Conditioning

Print Tag: Refer to original journal article
In an undergraduate clinic using conventional root canal treatment techniques, the number of visits (single vs multiple) does not appear to affect overall postoperative pain reports.

**Background:** Single-visit endodontic treatment is preferable over multiple-visit treatment from a practical perspective, but some differences in outcomes, especially with regard to postoperative pain, are not well characterized.

**Objective:** To determine differences in postoperative pain experienced by patients who underwent single-visit endodontic treatment versus multiple-visit care.

**Design:** Prospective case series.

**Participants:** Patients in an undergraduate dental educational clinic in Khartoum, Sudan.

**Methods:** Patients requiring routine, conventional endodontic therapy were identified in a single-visit or multiple-visit treatment group, irrespective of symptoms, periapical pathology or vitality testing, or type of tooth. Canals were prepared with hand instruments with hypochlorite irrigation, and calcium hydroxide was used as an intracanal medicament when the treatment was done in ≥2 visits. Canals were cold-obturated with gutta percha, with a ZOE sealer. Postoperative pain was assessed using a 1 to 4 visual analog scale (VAS) and was subsequently analyzed by $\chi^2$ statistical testing.

**Results:** 244 patients were included (146 females and 88 males), and 234 completed the study. In total, 41.0% of the teeth treated were maxillary, 59.0% mandibular, 36.8% anterior, and 63.2% posterior. Overall, 202 teeth (86.3%) were treated on multiple visits, while 32 teeth (13.7%) were single-visit cases; 208 patients had no postoperative pain, 3 had mild pain, 2 had moderate pain, and 21 severe. When compared on the basis of single- versus multiple-visit care, there were no statistically significant differences for level of postoperative pain reported.

**Conclusions:** There was a low incidence of postoperative pain in an undergraduate dental clinic, and the occurrence of pain was not related to the number of visits required for completion of single-tooth, conventional root canal therapy.

**Reviewer's Comments:** This study had some shortcomings, including numbers of teeth in the single-visit category versus those in the multiple-visit one, as well as lack of control of preoperative factors. Nevertheless, based on a simple VAS scale, this study indicates that postoperative pain may not differ significantly between the 2 groups. More studies are needed to clarify the statistical reliability of this finding. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Postoperative Pain, Root Canal Treatment, Single & Multiple Visit

Print Tag: Refer to original journal article
Early prevention and intervention is indicated in patients with newly diagnosed or suspected Alzheimer disease/dementia, which increases risk of both coronal and root caries.

**Background:** Older patients have been shown to be at increased risk of oral disease, particularly root caries, and the presence of dementia appears to increase this risk.

**Objective:** To continue a previous cross-sectional study of caries prevalence in patients referred to memory clinics using a longitudinal design, with a defined period of follow-up evaluation.

**Design:** Longitudinal study of 3 cohorts based on a specific diagnosis of dementia.

**Participants:** Male and female patients who had been referred to 2 Danish memory clinics from 2002 to 2004.

**Methods:** 106 dentate patients underwent medical evaluation by a medical team and were also examined by 1 dentist, using a mobile dental unit with a fiber optic light, suction, and an air-water syringe. Coronal and root decayed surfaces and filled surfaces were recorded, as were root caries and gingival recession. A questionnaire was used to assess patient demographics, social traits, and functional abilities. Following a 1-year interval, a follow-up examination was performed, including a clinical oral exam, an interview, and administration of the Mini-Mental State Examination (MMSE). Appropriate parametric and non-parametric statistical tests were used in the data analyses.

**Results:** 77 subjects completed the follow-up evaluation, including 28 males and 49 females, with an average age of 82.5 years. There were 49 subjects in the Alzheimer disease group, 15 in the “other dementia” group, and 13 with a diagnosis of no dementia. In all 3 groups, the MMSE score and number of teeth decreased, and the changes in the Alzheimer and no dementia groups were statistically significant. The number of decayed surfaces was higher at follow-up in all 3 groups, but statistically significant only in the other dementia cohort. The mean number of decayed/filled surfaces had both increased statistically significantly in both the Alzheimer and other dementia group after 1 year. The development of root caries during the follow-up period was positively correlated with the number of decayed surfaces at baseline. Other risk factors for root caries were age >80 years and having ≥20 teeth.

**Conclusions:** Patients suspected of having cognitive impairment (dementia) should have their oral care needs assessed and treated, as they are at an elevated risk for developing high levels of coronal and root caries during the first year after referral (with or without a confirmed diagnosis of dementia).

**Reviewer’s Comments:** The authors are to be commended for undertaking this challenging study, although limitations included exclusion of examination of some teeth at follow-up that were not examined at baseline, and an underestimation of caries and new fillings as a result of restorative care between initiation and completion of the study. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Alzheimer Disease, Caries, Dental Care for Elderly Patients, Nursing Homes, Oral Health Research

Print Tag: Refer to original journal article
In managing trauma, prophylactic antibiotics are not appropriate for simple facial lacerations, tongue lacerations, and intraoral lacerations not associated with fractures.

**Background:** Intraoral and orofacial traumatic injuries require management of both tissue trauma and wound contamination, with the potential for serious infections as a local complication that impedes wound healing and possible systemic, life-threatening infections. Antibiotics may be employed to prevent such infections.

**Objective:** To review relevant published literature on the efficacy of antibiotics in preventing infections associated with traumatic injuries of the mouth, head, and neck.

**Design:** Expert review of a selected body of literature from the mid-1960s to the present (not a systematic review).

**Methods:** The author is an expert in the management of traumatic orofacial wounds and conducted an independent review of various articles and resources, including case reports, case series, clinical trials, and guidelines of professional organizations. Relevant areas covered included systemic prophylactic antibiotics in patients with skin wounds, use of systemic antibiotic prophylaxis for prevention of infection of intraoral wounds, topical antibiotics for treatment of traumatic wounds, and systemic antibiotic prophylaxis in patients with open fractures and joint wounds.

**Results:** A total of 63 articles were referenced in the review.

**Conclusions:** Prophylactic antibiotics are appropriate in a limited list of situations and for a limited period of time, including immunocompromised patients, grossly contaminated wounds, delayed wound closure, patients at high risk for infective endocarditis, patients with open fractures and joint wounds, and high-velocity gunshot wounds. Furthermore, there is insufficient scientific and clinical literature to support a benefit of prophylactic antibiotics in cases of simple facial skin lacerations, tongue lacerations, and intraoral lacerations not associated with facial fractures.

**Reviewer’s Comments:** Antibiotic prophylaxis remains a controversial topic in a number of clinical applications, and, based on this article, also in the prevention of infections in cases of traumatic orofacial injuries. The author has provided a good review of this particular topic and it emerges as reasonable guidance for practitioners who deal with serious infections as well as those who manage minor intraoral injuries, such as tongue lacerations. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Prophylactic, Soft Tissue, Infection, Trauma, Antibiotics

Print Tag: Refer to original journal article
Dentists Play Key Role in Smoking Cessation

Patients' Knowledge and Views About the Effects of Smoking on Their Mouths and the Involvement of Their Dentists in Smoking Cessation Activities.

Terrades M, Coulter WA, et al:

Br Dent J 2009; 207 (December 12): E22

Dentists should capitalize on positive patient attitudes toward their offering smoking cessation therapy, and on the lack of knowledge of smokers about the relationship between smoking and serious oral conditions.

Background: Smoking contributes to tooth staining, periodontal disease, and oral cancer, and the dentist is frequently the first health care provider to be able to offer smoking cessation intervention.

Objective: To assess the knowledge of smoking and non-smoking dental patients regarding the adverse effects of smoking and to assess their attitudes toward the dentist's role in a smoking cessation program.


Participants: Dental patients aged >16 years in 27 general dentistry practices in Northern Ireland were eligible for the study. Both males and females who smoked and did not smoke received questionnaires.

Methods: 20 questionnaires were sent to each of the practices. The questionnaire used had been previously validated in 5 clinical studies, and was administered to patients by the dentist, after which they were mailed back to the research investigators. The survey covered patient demographics, knowledge of general and oral health, and patient attitudes to their dentist's participation in smoking cessation programs. Questions regarding patients' knowledge of the relation between oral and systemic conditions and smoking included lung cancer, heart disease, tooth staining, halitosis, dysgeusia, caries, wound healing, periodontal disease, and oral cancer.

To assess attitudes toward the role of the dentist, patients were asked about their expectations, whether they would continue to see the dentist who recommends smoking cessation, and the appropriateness of dentists' participation in smoking cessation.

Results: Overall, patients had a very positive attitude toward their dentist's participation in smoking cessation programs, but had significantly less knowledge of the relationship of smoking to oral diseases and conditions than medical diseases. For all conditions affected by smoking, a higher percentage of patients who did not smoke responded "yes" to these questions. A large number (60%) of patients incorrectly answered yes to the relationship between smoking and caries, which has not been proven.

Conclusions: The patients who participated in this survey had a good general knowledge of the adverse effects of smoking, and demonstrated that esthetic and social factors are important motivators for smoking cessation. Smokers are less aware than non-smokers of the adverse oral effects of smoking and should be counseled accordingly.

Reviewer's Comments: This study utilized a well-designed survey instrument to confirm the outcomes from other studies, ie, patients who smoke do not associate smoking with adverse oral effects and are positively inclined to receive smoking cessation support from dentists. (Reviewer-Arthur H. Jeske, DMD, PhD).

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Keywords: Smoking Cessation, Smoking Status, Periodontal Disease, Wound Healing

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