Fluoride From GICs Prevents Mutans From Making Acid

*Fluoride Released From Glass-Ionomer Cement Is Responsible to Inhibit the Acid Production of Caries-Related Oral Streptococci.*

Nakajo K, Imazato S, et al:

_Dent Mater;_ (January 14): epub ahead of print

GIC eluate can prevent cariogenic bacteria from making as much acid.

**Background:** Fluoride-releasing restorative materials are often selected because of the anti-caries effect that has been reported as a result of their fluoride release. Much of this effect has been reported as it relates to remineralization. Less work has been performed looking at the potential of fluoride released from glass-ionomer cements (GICs) to have an effect on cariogenic bacteria directly.

**Objective:** To examine eluates from GICs and their ability to inhibit the drop in pH as well as acid production rates of the cariogenic bacteria _Streptococcus mutans_ and _Streptococcus sanguinis_.

**Methods:** A powder and liquid version of GIC (Fuji IX) was mixed according to the manufacturer's directions for 30 seconds and then placed into a cylindrical mold and allowed to set at 25°C for 30 minutes. The set cement specimen was then placed into a solution of phosphate-buffered saline enriched with substances normally found in a culture medium in which bacteria are commonly grown. After storage at 37°C for 24 hours, a sample of the eluate, the liquid solution now containing substances that had leached from the glass-ionomer specimen, was analyzed for the amount of fluoride and other minerals eluted from the glass-ionomer. To measure the pH fall upon sucrose challenge to bacteria, the eluate was buffered and kept at pH 7.0 to start. pH fall was monitored for 30 minutes with and without the fluoride containing glass-ionomer eluate. Separately, acid production from the 2 types of bacteria was measured with and without the glass-ionomer eluate.

**Results:** With _S. mutans_, the pH started to drop in all specimens immediately after the addition of glucose. After 10 minutes, the rate of pH drop was very different depending upon the amount of fluoride in the GIC eluate.

**Conclusions:** In specimens containing a high level of fluoride eluates from the glass-ionomer specimens, the pH drop essentially stopped after 10 minutes at pH 5.0, whereas in the controls with no fluoride eluate from the glass-ionomer, the pH continued to drop to 4.0 after 30 minutes.

**Reviewer's Comments:** For both _S. mutans_ and _S. sanguinis_, when the bacterial medium was maintained at a lower pH of 5.5, as would occur with an acid challenge in vivo, the bacterial acid production was significantly lower when there was an eluate containing a higher level of fluoride, as was produced by the specimens from the glass-ionomer group. There was minimal difference at a neutral pH. This study shows that GICs can indeed have both a slowing of the pH drop as well as a reduction in acid production effect on cariogenic bacteria.

**Additional Keywords:** Fluoride/Acid Production

**print tag:** Refer to original journal article.
No Special Tricks for Successful Retreatment of Failed Root Canal Treated Tooth

Outcome of Secondary Root Canal Treatment: A Systematic Review of the Literature.

Ng Y-L, Mann V, Gulabivala K:  
Int Endod J; 41 (December): 1026-1046

Good preparation that allows apical access and decontamination, a root canal filling that fills but does not overfill the canal, and a good coronal restoration contribute to successful endodontic retreatment.

**Objective:** To determine the success rates of secondary root canal treatment (retreatment) and to assess the effect of clinical factors on outcomes of retreatment.

**Design:** Systematic review and meta-analysis.

**Methods:** The authors identified 40 papers of which 17 studies met the inclusion criteria of their review; 12 of the investigations were retrospective and only 5 were prospective.

**Results:** The success rate for secondary root canal treatment varied over a range of 28% to 93%, with a pooled estimated success rate of 77%. A large number of study characteristics were assessed for the 17 studies that met the inclusion criteria for this review. The assessed characteristics included duration of follow-up after treatment, year of publication, geographic location of study, qualification of operators, and a variety of patient characteristics and operative factors. The presence of a preoperative periapical lesion, the apical extent of the root canal filling (short or ideal length was better than overly long root canal fillings), and the quality of the coronal restoration were the only factors that were prognostic for the outcomes of secondary root canal treatment.

**Conclusions:** Operators should focus on canal preparation, a well condensed root canal filling, and a well-sealed coronal restoration to obtain predictable secondary root canal outcomes.

**Reviewer's Comments:** We know that root canal therapy is not 100% successful. Despite the best efforts of dentists, some teeth will require endodontic retreatment. What may not be clear is what can be expected when retreatment is indicated and which factors are relevant in optimizing the chances of the success of that retreatment. The outcomes of endodontic retreatment or secondary root canal therapy and the factors that may determine success of secondary treatment are of interest to both dentists and their patients. Based on the evidence from this review, the authors suggested that the focus in root canal retreatment should be on canal preparation to obtain good access to the apical area, sufficient canal shaping to allow decontamination of infective material, and a well condensed root canal filling that does not extrude beyond the apex that is followed up with a well-sealed coronal restoration. This review demonstrated that there are no special tricks for successful retreatment of a failed root canal treated tooth. The goals are the same as those for successful initial treatment, access to the apex and decontamination followed by root and coronal fillings that seal the tooth from bacterial recontamination.

**Additional Keywords:** Outcomes

**print tag:** () Refer to original journal article.
Gingivally Offset Mandibular Premolar Brackets Have Lower Bond Failure Rates

Bond Failure of Gingivally Offset Mandibular Premolar Brackets: A Randomized Controlled Clinical Trial.

Thind BS, Stirrups DR, Hewage S:
Am J Orthod Dentofacial Orthop; 135 (January): 49-53

Gingivally offset mandibular premolar brackets have a lower bond failure rate than standard mandibular premolar brackets.

Background: Mandibular posterior teeth have significantly higher bracket bond failure rates than anterior and maxillary teeth. To reduce the problem, manufacturers have redesigned mandibular premolar brackets, which consists of a larger bracket base area that is occlusal to the tie wings. Therefore, the wings are offset relatively gingivally to the base as compared to conventional premolar brackets.

Objective: To compare the clinical bond failure rates of gingivally offset mandibular premolar brackets with those of standard mandibular premolar brackets in a clinical setting.

Design: Randomized, split-mouth, controlled clinical trial.

Participants: 83 patients of which 82 completed the study.

Methods: Randomization was performed as to which side received gingivally offset brackets and which side received the standard brackets. A total of 240 mandibular premolar brackets were bonded (120 gingivally offset and 120 standard) according to the manufacturers' instructions. Each patient was given a form to record dates of bond failures. If the patient did not realize there was a bond failure, the date of the orthodontic review visit was recorded as the date of failure.

Results: 11 brackets debonded, of which only 1 failure occurred with the offset bracket at 345 days. The remaining 10 brackets were with the standard bracket and represent a failure rate consistent with the reported 4% to 10% failure rate with standard brackets. The difference in failure rate between the bracket types was statistically significant.

Conclusions: Gingivally offset mandibular premolar brackets have a statistically and clinically lower bond failure rate than standard mandibular premolar brackets.

Reviewer’s Comments: This well executed and written study verifies the manufacturers' claim of lower bond failure rates with gingivally offset brackets. It is important to note that "gingivally offset bracket" is a misnomer because the absolute position of the bracket wings to the tooth is not gingivally offset. In reality, the bonding base pad of the bracket has been made larger at the occlusal giving the appearance as if the wings are gingivally offset. Thus, there appears to be a relative gingival offset of the tie wings as compared to standard brackets; however, the wings are in the same absolute position on the tooth as a standard bracket. The authors note that a gingivally offset bracket with its larger base seems to provide better bond strength and minimize failure. They theorize that this difference could be due to the greater bracket base area. To their credit, the authors note that further studies with larger sample sizes should be performed to verify their claims because only 2 more failures of the gingivally offset brackets would have made the results statistically not significant at the 5% level.

Additional Keywords: Bond Failure

print tag: () Refer to original journal article.
Teeth Injured During Orthodontic Tx Increases Risk of Pulp Necrosis

Pulp Vitality in Teeth Suffering Trauma During Orthodontic Therapy.

Bauss O, Rhling J, et al:
Angle Orthod; 79 (January): 166-71

Frequent arch wire changes correlate with a higher incidence of pulp necrosis.

Background: Increased overjet is a predisposing factor for injuries to maxillary permanent incisors and is also an indication for orthodontic therapy.

Objective: To determine the effect of dental injuries to maxillary permanent incisors during active orthodontic treatment on pulp vitality.

Design: Retrospective chart review.

Methods: Patients who sustained injuries to their maxillary incisors during orthodontic treatment (TO-group) were compared with orthodontic patients with no history of dental trauma (O-group) and with patients with dental trauma but no orthodontic therapy (T-group). All patients had been treated with similar protocols in 3 private orthodontic practices over a 17-year period. The TO-group was comprised of 59 traumatized incisors from 46 patients (43 central incisors, 16 lateral incisors). Mean age when orthodontic treatment began was 11.2 years (range, 9.5 to 16.7 years). Injuries were: enamel fracture (n=13); enamel-dentin fracture (n=15); subluxation (n=8); extrusion (n=2); lateral luxation (n=9); and intrusion (n=12). In the crown fracture cases, orthodontic treatment was interrupted for 2 to 3 months. In severe luxation injuries, the teeth were splinted with orthodontic wire for 3 to 4 weeks and orthodontic movement was interrupted for 5 to 6 months. The O-group was comprised of 200 randomly selected patients in a similar age range, but with no history of dental trauma before, during, or after orthodontic treatment. The T-group consisted of 173 patients with a total of 193 traumatized permanent incisors.

Results: Pulp necrosis occurred in 18.6% of teeth in the TO-group, 0.3% in the O-group, and 1.6% in the T-group. Pulp necrosis was correlated with a higher number of arch wire changes per month. Teeth with pulp obliteration had a higher frequency of pulp necrosis than those without obliteration. Teeth with severe luxation injuries were more likely to undergo pulp necrosis during subsequent orthodontic treatment than minor luxations or crown fractures.

Conclusions: Teeth with severe periodontal injuries during orthodontic treatment and subsequent pulp canal obliteration have an increased risk for pulp necrosis, and their orthodontic treatment should be minimized or terminated.

Reviewer's Comments: The finding that teeth undergoing pulp canal obliteration during orthodontic treatment are at an increased risk for pulp necrosis contrasts with their normally excellent prognosis. This along with the finding that more frequent arch wire changes increase the chance of pulp necrosis indicates the wisdom in minimizing orthodontic manipulation of recently injured teeth. The study could have been strengthened with more participants in the TO Group as the numbers of teeth in some injury categories were small.

Additional Keywords: Pulp Vitality

print tag: () Refer to original journal article.
Saliva Has Many Functions in Protecting the Oral Cavity

Saliva Composition and Functions: A Comprehensive Review.
De Almeida PDV, Gregio AMT, et al:
J Contemp Dent Pract; 9 (March 1): 2-10

Saliva does more than keep our oral mucosa and tongue moist.

Background: We see it every time a patient opens their mouth and we may record some subjective description of it, but then we move on to the teeth and the occlusion. When saliva is being produced, we think little else about it. When the salivary glands stop or slow down in their production, we become concerned.

Objective: To perform a review of the contemporary literature and investigate the composition and functions of saliva.

Design: Literature review.

Methods: 57 reports from the international medical and dental literature were selected between the years 1978 and 2006.

Results: Salivary flow (SF) is measurable, but generally not measured in practice. For adults, the mean daily saliva production is 1 to 1.5 L/day and the stimulated SF is 1 to 3 mL/minute, but the biological variation is great. Amounts in children are reported to be around 75% to 79% of adult volumes. A major role of saliva is to assist in perceiving different flavors by dissolving substances. Other functions of saliva are lubrication by forming a seromucosal coating over the oral tissues, mechanical cleansing of residues followed by dilution, the capacity to buffer by neutralizing the acids produced by acidogenic bacteria, and modulating remineralization and demineralization therefore stabilizing the enamel hydroxyapatite. Another role of saliva is secreting proteins with antimicrobial properties found in immunoglobulin A that can neutralize bacteria, viruses, and enzyme toxins. Other proteins inhibit the precipitation of calcium salts and growth of hydroxyapatite crystals, preventing the formation of calculus. The histatins have antimicrobial activity against Streptococcus mutans and potent inhibitors of Candida albicans growth. Finally the factors that influence flow and composition of saliva are body posture and light. We are all aware of the reduced flow at night (Circadian cycle) that has been implicated with early childhood caries initiation. Salivary flow can be influenced by medications, tobacco, visual stimuli, size and weight of salivary glands, and mechanical and chemical stimulation. Physical exercise, alcohol, systemic disease, nutritional deficiencies, fasting, nausea, age, and gender are all factors that can influence flow.

Conclusions: Saliva has many functions in protecting the oral cavity, initiating digestion, and modulating chemical activities in the mouth.

Reviewer's Comments: The authors provide us with a concise contemporary review of saliva and its composition and functions. Only recently have there been reported developments in understanding the importance and usefulness of saliva (J Am Dent Assoc 2006). Some suggest that saliva may replace blood and provide a noninvasive diagnostic matrix. Portable devices being developed utilizing nanotechnology may soon be able to diagnose a wide variety of disease conditions at the point of care by using an oral sample.

Additional Keywords: Salivary Chemicals

print tag: () Refer to original journal article.
Gene Associated With CL/P May Also Increase Cancer Susceptibility

AXIS Inhibition Protein 2, Orofacial Clefts and a Family History of Cancer.
Menezes R, Marazita ML, et al:
J Am Dent Assoc; 140 (January): 80-84

Background: The prevalence of orofacial clefts varies from 1 in 500 to 1 in 550 births, and can be part of a genetic syndrome or an isolated finding. Recent investigations have identified a few specific genes associated with or causative of orofacial clefting.

Objective: To determine if families with cleft lip and/or palate (CL/P) are at increased risk for developing cancer.

Participants: The study sample consisted of 75 Caucasian families with CL/P and 93 Caucasian control families from the Pittsburgh area. For the genetic analysis, an additional 36 families with CL/P were recruited.

Methods: A structured questionnaire was used to obtain information regarding a family history of cancer. DNA was collected from each member of the CL/P families. Genotyping was performed using candidate genes that had previously been shown to be associated with CL/P. Chi square and Fisher exact tests were used to assess differences between families with CL/P and control families for a family history of cancer. The family-based association test was used to detect transmission distortions in families with CL/P.

Results: There was a statistically significant difference between groups for a family history of cancer, with this history being more frequent in families with CL/P. There were increased rates of colon cancer, brain cancer, and leukemia in CL/P families as well as increased rates of female breast cancer, prostate, lung, skin, and liver cancer. Candidate gene analysis demonstrated a significant association between the gene Axis inhibition protein 2 and CL/P.

Reviewer's Comments: Tooth agenesis is a frequent finding in patients with CL/P and it is noteworthy that a gene previously associated with tooth agenesis and colorectal cancer is also associated with orofacial clefting. Although families with orofacial clefts more frequently reported a family history of cancer, the number of subjects in this study who were born with clefts and subsequently developed cancer was very low (3 subjects). From this study, it cannot be concluded that children born with clefts are more susceptible to cancer. However, a previous population-based study suggests that this is true. Mutations in the Axis inhibition protein 2 gene have been shown to increase susceptibility to colon cancer, so the association of this gene with CL/P suggests an increased susceptibility to cancer for these patients. It is important to repeat this study with a larger sample size to confirm this finding and to further investigate the risk for cancer in this population.

Additional Keywords: Genetics/Cancer

print tag: () Refer to original journal article.
MNTI Is Rare but Aggressive Oral Neoplasm

Melanotic Neuroectodermal Tumor of Infancy: 2 Decades of Clinical Experience With 18 Patients.
Chaudhary A, Wakhlu A, et al:
J Oral Maxillofac Surg; 67 (January): 47-51

MNTI is an aggressive, rapidly growing, benign tumor of the anterior maxilla in infants that can exhibit a high local recurrence rate and requires timely long-term follow-up.

Background: Melanotic neuroectodermal tumor of infancy (MNTI) is an uncommon osteolytic-pigmented benign neoplasm of neural crest origin that is most commonly found in the maxilla of children <1 year of age. Surgical excision is the treatment of choice and curative in most cases.

Objective: To report the management experience of 18 patients diagnosed with MNTI occurring in the maxillary alveolus.

Participants/Methods: This retrospective study was based on medical record analysis of patients diagnosed with MNTI and admitted to the Department of Pediatric Surgery, King George Medical University from 1984 through 2004. The study sample included 18 subjects (12 males, 6 females; mean age, 4.3 months), who presented with a painless slow growing mass in the maxillary anterior alveolus that was smooth, hard, bluish-black in color, and fixed to the bone. Recorded examination consisted of clinical presentation, hematological studies, urinary vanillyl mandelic acid (VMA) expression, and imaging to include dental x-rays, CT scans, and MRIs. All subjects were treated with surgical enucleation and curettage at the average age of 9 months, with the specimens evaluated by histopathology and immunohistochemistry. Statistical analysis was performed using the Kaplan-Meier method.

Results: All 18 subjects had involvement of the maxillary anterior alveolus with 70% of the lesions lateral to the midline, 20% in the midline, and 30% involving the hard and soft palate. A 2:1 male predilection was noted; all subjects expressing VMA were male. The degree of pigmentation of the lesions was related to the amount of melanin present. The expansion of the alveolus due to MNTI improved in 4 to 6 months postoperative, and the dentition was affected due to loss of tooth buds associated with the lesions. Radiological features were characteristic for MNTI with a well-defined expansive radiolucency displacing surrounding bone and tooth buds. Histopathology and immunohistochemistry were characteristic and diagnostic for MNTI. The 16 subjects remaining in regular long-term follow-up (maximum, 206 months) were free of any local recurrence or metastasis. Mean follow-up time was 130 months, the overall survival at 17 years was 87%, and the mean survival time was 190 months.

Conclusions: Without metastatic disease, early diagnosis and conservative surgical removal provides excellent results with a good long-term prognosis for MNTI patients.

Reviewer’s Comments: Although small due to the rarity of this neoplasm, this investigation had the largest number of test subjects with MNTI from a single institution and maintained excellent, consistent, long-term follow-up. The results were well documented and their significance stated with many of the findings contradicting those of previous studies. This article provides new insight involving the timing and overall management of this rare and aggressive oral neoplasm.

print tag: () Refer to original journal article.
Do Virginity Pledges Work?


Rosenbaum JE: *Pediatrics;* 123 (January): e110-e120

Virginity pledgers and nonpledgers do not differ in sexual behaviors, but pledgers are less likely to use protection from pregnancy and disease.

**Background:** Teen pregnancy is a personal, family, and community dilemma, and the reduction of early adolescent sexual initiation is a major public health issue. Early sexual initiation results in risk-taking behaviors, unplanned pregnancies, and sexually transmitted diseases (STDs). Sex education programs that include both contraception and abstinence can help delay sexual initiation and prevent pregnancy, risky behavior, and STDs. Abstinence only sex education (AOSE) has not resulted in a change in the sexual behavior of adolescents, but federal funding increased from $73 M in 2001 to $204 M in 2008, a nearly 3-fold increase.

**Objective:** To compare the sexual activity of adolescent virginity pledgers with matched nonpledgers by using matched sampling analyses.

**Participants:** 289 virginity pledgers and 645 nonpledgers identified from the National Longitudinal Study of Adolescent Health survey in 1995 were included in the study.

**Results:** 6 years following the pledge, 82% of pledgers denied pledging. There was no difference between virginity pledgers and nonpledgers in regard to premarital sex, STDs, and anal and oral sex. Pledgers had slightly fewer partners during the past year, but did not differ in long-term partners or age of the initial sex experience. Virginity pledgers were less likely to use birth control measures or condoms during the past year and during the most recent sexual activity.

**Conclusions:** Virginity pledgers and nonpledgers did not differ in sexual behaviors, but pledgers were less likely to use protection from pregnancy and disease.

**Reviewer's Comments:** Occasionally a pediatric dentist or a dentist involved with the treatment of adolescents may have occasion, during antibiotic therapy, to warn a patient of the possibility of pregnancy. A teen patient may identify herself as a "virginity pledger," but the dentist should be aware of the evidence on the effectiveness of abstinence only sexual education programs such as virginity pledging.

**Additional Keywords:** Sexual Behavior

**print tag:** Refer to original journal article.
Nurse Practitioners in Excellent Position to Assess Caries Risk in Children

Assessment, Management, and Prevention of Early Childhood Caries.

Kagihara LE, Niederhauser VP:
J Am Acad Nurse Pract; 21 (January): 1-10

An excellent case is made for creating training programs that interface providers in the way that the most vulnerable children can obtain the most immediate intervention in the context of a dental home, while providing important risk assessment and health maintenance in all venues.

**Background:** We continue to hear of the growing crisis in access to care and the related increase in caries rates in early childhood. Also of note is the increased awareness all of this effort has created in the minds of non-dental health care professionals.

**Objective:** This paper published in the *Journal of the American Academy of Nurse Practitioners* gives us insight into the messages presented to the nurse practitioner community regarding early childhood caries.

**Results:** The paper begins with an introduction into the definition and clinical description and presentation of early childhood caries. Much of this description comes directly from our own American Academy of Pediatric Dentistry (AAPD) documents. The paper then unfolds with a more detailed description of early childhood caries and provides a succinct review of the literature from all perspectives of the disease. Only after an excellent review of the subject of early childhood caries from the multi-factorial and behavioral disease perspectives does the paper actually provide an equally impressive description of the caries process, as well as the concurrent description of reversal of the process via mechanisms such as remineralization. The authors make the case for involvement of nurse practitioners by stating that the very age group with the greatest need for caries risk assessment and disease management is the one with the lowest access, and cite a figure of >75% not receiving the recommended dental visits by age 3 to 4 years. It is on this basis that the authors conclude that caries risk assessment must be performed by other child health care professionals, with the intent of managing disease at the earliest possible stage.

**Conclusions:** Using the AAPD caries assessment tool, the authors weave the elements of assessing caries risk into an anticipatory guidance plan as would be routine and familiar to nurse practitioners in dealing with other childhood diseases. The authors then explain that child health care providers are actually an ideal group to provide oral health care and hygiene counselling during the multiple well-child checkups that are referred to as health supervision visits. Actual implementation of anticipatory guidance performed by the nurse practitioner should be primarily reserved for children with the highest determined risk, according to the authors.

**Reviewer's Comments:** Clearly stated is the recommendation to refer children of the highest risk to a pediatric or general dentist as soon as can be done. It is the role of the nurse practitioner to assist in the identification and establishment of a dental home. The authors make an excellent case for creating training programs that interface providers in the way that the most vulnerable children can obtain the most immediate intervention in the context of a dental home, while providing important risk assessment and health maintenance in all venues.

**print tag:** () Refer to original journal article.
Local Anesthesia Reversal Agent Appears to Be Effective

Reversal of Soft-Tissue Local Anesthesia With Phentolamine Mesylate in Pediatric Patients.

Phentolamine mesylate appears to be safe and effective for use in children as a reversal agent for local anesthetics.

**Background:** The inclusion of vasoconstrictors in local anesthetics prolongs the duration of anesthesia and can result in inadvertent trauma to the soft tissues of the oral cavity.

**Objective:** To assess the safety and efficacy of phentolamine mesylate (OraVerse) as a reversal agent for local anesthetics in pediatric patients.

**Design:** Randomized, double-blind, controlled, clinical trial.

**Participants:** 152 patients aged 4 to 11 years at 11 sites in the United States were included for study.

**Methods:** All subjects received an injection of 2% lidocaine with 1:100,000 epinephrine. Following the dental procedure, subjects were randomized into 2 groups. One group received a dose of phentolamine mesylate and the other group received a sham injection.

**Results:** The median recovery time for the sham injection group was 135 minutes and 60 minutes for the phentolamine mesylate group. No differences were noted in adverse events, reported pain, use of analgesics, or vital signs.

**Conclusions:** Phentolamine mesylate accelerated the reversal of soft-tissue anesthesia following dental treatment in children 6 to 11 years of age.

**Reviewer's Comments:** Using the least amount of the safest anesthetic solution for the dental procedure involved is the most prudent local anesthetic technique. Nonetheless, dentists can often use more local anesthetic than is needed for the treatment resulting in post-treatment anesthesia and possible soft-tissue trauma from biting. The use of phentolamine mesylate (OraVerse) appears to reduce the recovery time for soft tissue anesthesia. This study was a companion to a similar study on adults in the same issue of the *Journal of the American Dental Association*.

**print tag:** () Refer to original journal article.
Antioxidants May Also Prevent Dental Caries

Influence of the Antioxidant Content of Saliva on Dental Caries in an At-Risk Community.

Uberos J, Alarcn JA, et al:

Br Dent J; 205 (July 26): epub ahead of print

Caries in the primary teeth are in direct proportion to the total antioxidant capacity of saliva.

Background: Dental caries is a multifactorial disease associated with inadequate hygiene, history of caries, cariogenic diet, insufficient fluoride exposure, reduced saliva flow, and high concentrations of cariogenic bacteria. Antioxidants are an important part of our diet and can, in association with other systems, prevent inflammatory and infectious processes.

Objective: To evaluate the relationship between total antioxidant capacity (TAC) of saliva and caries in primary and permanent dentitions.

Participants: 126 children from Western Sahara who were in Granada, Spain, in the summer of 2005 participating in a 'vacation in peace' program were included. Ages ranged from 4.4 to 14.5 years; 54% were female, with optimum conditions given the homogenicity of their social, economic, dietary, and hygiene customs.

Methods: A dental examination was completed by 1 dentist; decayed, missing, and filled teeth (DMFT) rates were calculated. The Dean index for alteration in enamel was performed. Two-mL saliva samples were obtained by aspiration, centrifuged, and frozen for future analysis. The TAC of the saliva was determined by colorimetry. The antioxidant power of a saliva sample was the amount necessary to inhibit 50% of crocin bleaching. Statistical analyses were performed.

Results: 79% of subjects had decay in primary teeth and 78% in permanent teeth. Mean DMFT in deciduous teeth was 0.93 and 2.84 in DMFT. The TAC for the entire group was 8.6; in subjects without decay in the primary dentition, it was 7.8, and if there were cavities, it was 10.6. (statistically significant [SS]). In the permanent dentition, when there was no decay, the TAC was 7.8 and 9.0 if there was decay (not SS). Fluorosis levels were not associated with TAC. The TAC of children with caries in the primary dentition was 2.8 times greater than in children with no decay. An increase in power of the TAC decreases calcium levels of the saliva and increases cariogenic activity. Increase in TAC modifies adherence of Streptococcus mutans in plaque, which could lead to greater cariogenic activity. Polyphenols in foodstuffs can inhibit adherence of S. mutans.

Conclusions: Caries activity was higher in the children with higher TAC power, and the affect was higher in the primary dentition.

Reviewer's Comments: There were some methodological problems (ie, only 1 dental examiner, not noted if the dentists had been calibrated, no mention if an explorer and mirror was used or artificial light was used, no knowledge of whether saliva samples were collected before or after meals, and whether the children were stimulated to produce saliva). Even so, I was unaware of the possible antioxidant powers of saliva. There is no doubt that further study is indicated and if TAC is found to be a valid diagnostic tool, a commercial chair side test must be developed.

Additional Keywords: Antioxidant Content

print tag: () Refer to original journal article.
Anesthesia Needs of Patients With Special Health Care Needs

Providing Deep Sedation and General Anesthesia for Patients With Special Needs in the Dental Office-Based Setting.

Caputo AC:
Spec Care Dentist; 29 (January): 26-30

Less than 1% of patients with special needs sought follow-up care in an urgent care setting after in-office general anesthesia for dentistry.

**Background:** General anesthesia (GA) is often used to manage the oral health of patients with special health care needs. There has been some debate as to the appropriateness of GA in the behavior management spectrum for these patients. Some of the debate has been driven from a reimbursement perspective. There is a relatively small amount of literature on the postoperative risks and complications for these patients undergoing this treatment modality. There has been a steady rise over the past 30 years, as initially detailed by Dr. Joel Weaver, in the delivery of in-office general anesthesia for this population.

**Objective:** To assess postoperative complications in a pool of patients with special health care needs who underwent in-office general anesthesia for dental procedures.

**Methods:** Aside from a review of the literature, the author performed a retrospective analysis of his clinical practice. Data from 5,650 patients were included in this analysis, and therapies included prosthodontics, periodontal, simple and complex exodontia, as well as pediatric procedures. The standardized anesthetic regimen included ketamine, midazolam, and propofol. All patients seen were followed-up by a standardized protocol.

**Results:** The included patients ranged in age from 11 months to 97 years. Fourteen percent of the patients seen were classified as patients with special needs (PSN). The total follow-up rate was 79%, and of these patients, 28% experienced postoperative nausea and vomiting and 16% experienced some form of emesis. However, only 3 patients sought treatment at urgent care, with 1 exhibiting a postoperative seizure.

**Conclusions:** According to presented findings, it is possible to treat patients with special health care needs using in-office anesthesia.

**Reviewer's Comments:** Unfortunately, there was no mention of the specific special health care conditions that characterized the patient pool. The paper does bring up an interesting notion, which is that the use of in-office general anesthesia could potentially remove treatment 'trepidation' and barriers in the dental care of patients with special health care needs. Furthermore, there is some ongoing debate as to whether the increase of in-office anesthesia will contribute to the demise of historical behavior therapies, such as oral conscious sedation; however, until insurance company management and reimbursement rates include general anesthesia for maintenance of dental health as an essential part of overall health, this debate seems premature.

**Additional Keywords:** Postoperative Complications

print tag: () Refer to original journal article.
Parental Psychopathology Affects Child's Psychopathology

*Psychopathology in the Children of Parents With Bipolar Mood Disorder.*
Akdemir D, Gkler B: *Turk Psikiyatri Derg*; 19 (Summer): 133-140

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**Children who have a parent with bipolar disorder are significantly more likely to suffer from some type of depressive disorder.**

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**Background:** There is controversy in the existing literature as to the relationship between psychopathology in parents and resulting disorders in children. Bipolar disorder has a high prevalence rate and significant associated morbidity and mortality for patients as well as their families. Existing studies suggest there is a possible connection between bipolar disorder in parents and development of similar grouped disorders in children.

**Objective:** To assess the frequency of psychiatric disorders in children of parents with bipolar I disorder. A secondary objective was to assess the characteristics of bipolar disorders in parents and the associated comorbidity with disorders in children.

**Methods:** This prospective matched cohort designed study looked at 1 cohort of children with a parental diagnosis of bipolar I disorder and a control group where parents had no diagnosed psychiatric disorder. Other predictive variables included sociodemographic characteristics, a history of developmental disorders, and a history of bipolar disorder in primary and secondary relatives of parents. Psychiatric disorders in children were assessed by the Schedule for Affective Disorders and Schizophrenia for School Aged Children. The Parenting Style Scale assessed differences in the children's perceptions of their parent's attitudes towards them.

**Results:** Data from 69 children were analyzed (33 in the control group and 36 in the study group). The mean ages were similar (12.7 years in the study group and 12 years in the control group), with no significant difference in gender distribution. Children with parents who had bipolar disorder were more likely to suffer from major depression (*P* < 0.01) and exhibit disruptive behaviors (*P* < 0.05). Sub-threshold symptoms of depressive disorders were more prevalent in the bipolar cohort (*P* < 0.05).

**Conclusions:** Children of parents with bipolar disorder were significantly more likely to develop psychopathology.

**Reviewer's Comments:** Dental disease has been related to family-level variables, such as marital status and presence of both parents in the household. This study reinforces what has been suggested in other studies dealing with children with autism spectrum disorder, that there is a potential link in familial psychopathology. Dentists need to understand that children do not 'grow up in a vacuum' and a child's environment may have a strong relationship to phenotypic expression of latent genetically-based disorders.

**Additional Keywords:** Parents & Children

**print tag:** Refer to original journal article.
Sugar-Sweetened Beverage Consumption and Childhood Obesity

Obesity and Sugar-Sweetened Beverages in African-American Preschool Children: A Longitudinal Study.
Lim S, Zoellner JM, et al:
Obesity; (February 5): epub ahead of print

While there was a reduction in soda consumption, there was an increase in fruit drink consumption over the 2 years these children were followed.

**Background:** In the past 16 years, there has been a 10% increase in the number of American children classified as overweight. Diet development in early childhood can set the stage for development of diseases in adulthood, such as hypertension, heart disease, and diabetes. A major component of early diet development is beverage selection. However, the existing body of literature is largely inconclusive as to the relationship between sugar-sweetened beverage (SSB) consumption and obesity. Part of the reason for these inconsistencies may lie in differing definitions of SSBs, largely 'snapshot' studies that neglect longitudinal diet development and cohorts (2- to 5-year-olds) in which diet habits are already established.

**Objective:** To examine the longitudinal relationship between SSB consumption and obesity in low-income African-American preschool children.

**Methods:** Data were obtained from the Detroit Dental Health Project, which followed a cohort of 0- to 5-year-old children over 2 years. Dietary information was collected using the Block Kids Food Frequency Questionnaire, which has been validated in older cohorts. This study measured soda and fruit drinks separately. Children were also weighed and a body mass index (BMI) was calculated.

**Results:** Data from 365 children were analyzed. Between the baseline and follow-up examination, there was a 5.8% increase in prevalence of being overweight and a 13% increase in children deemed obese. Mean consumption of SSBs increased between the baseline and the follow-up, although there was a 0.9% reduction in the consumption of soda. There was however, a 3.5% increase in consumption of fruit drinks.

**Conclusions:** There was not a significant association between change in SSB consumption and BMI scores, but there was a significant relationship between baseline SSB consumption and incidence of becoming overweight within the 2 years of follow-up.

**Reviewer’s Comments:** This study does a good job at the outset of identifying the weak areas in the pathophysiology of childhood obesity. It has been reported that a child's dietary habits are established as early as 1 year of age, and so while studies on 3- to 5-year-olds are clinically useful, they tell us very little about the initiation of this process. This study also attempts to address another weakness in the literature by separating fruit drinks and sodas. Similarly, the associations between childhood obesity and childhood caries have been pointed out, but not reinforced in thoroughly assessed longitudinal cohorts.

**Additional Keywords:** Sugar-Sweetened Beverages

**print tag:** () Refer to original journal article.
What Do We Know About Bruxism in DD Patients?

Treatment of Bruxism in Individuals With Developmental Disabilities: A Systematic Review.
Lang R, White PJ, et al:
Res Dev Disabil; (January 30): epub ahead of print

There is a distinct difference in therapy success between audible and inaudible bruxism.

Background: Bruxism, defined as "clenching, gnashing, or grinding of teeth" presents a diagnostic and treatment challenge in patients with developmental disabilities (DD), particularly those who are nonverbal. Bruxism can be classified according to time of occurrence (diurnal or nocturnal) or audible/inaudible. The morbidities associated with bruxism in DD populations include attrition to teeth, myofascial pain, headaches, tooth loss, and periodontal complications.

Objective: To review characteristics of existing studies, evaluate interventions, and assess levels of evidence for therapies.

Design: Systematic review.

Methods: This review was based on 5 components: types of subjects, methodology to assess bruxism, therapeutic interventions, outcomes of interventions, and strength of resulting evidence. Studies were selected from 4 databases: Education Resources Information Center, MEDLINE, PsycINFO, and the Psychology/Behavioral Sciences Collection. Inclusion criteria were that the study contained an intervention for at least 1 person with a DD.

Results: Of 61 studies eligible, only 11 studies met the inclusion criteria and were evaluated by looking at the aforementioned components. There was a 100% inter-rater agreement on qualifying studies. The most common diagnosis noted was mental retardation. The 11 included studies presented data on 19 patients. Three studies resulted in "conclusive evidence," all of which dealt with audible bruxism and positive reinforcements aimed at reducing frequency.

Reviewer's Comments: This study illustrates 2 points: (1) a systematic review is only as good as the evidence it is based on (only 18% of studies qualified), and (2) there is a relative chasm in the knowledge we have of bruxism in the DD population, which can be the source of significant morbidity. Unfortunately, any strength in evidence is based on a very small sample size, so the statistical power is severely in question; however, this begs the question between statistical and clinical significance in this situation. Finally, the extremely wide age ranges considered (4 to 43 years) make clinical recommendations difficult, as the etiology and contributing factors to bruxism may be related not only to severity of disease, but also to age.

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Replacing Alveolus After Dental Trauma—Which Material Is Best?

Bone Replacement Following Dental Trauma Prior to Implant Surgery—Present Status.

Hallman M, Mordenfeld A, Strandkvist T:

Dent Traumatol; 25 (February): 2-11

The risks of using autogenous grafts include donor site morbidity and resorption.

Background: Following dental trauma, one of the most challenging aspects of treatment is the management of the post-traumatized alveolus, particularly with avulsive injuries or injuries in which the alveolus is damaged or destroyed.

Objective: This review article goes through the process of describing grafting materials and alternative therapies.

Review: The “gold standard” for alveolus replacement is autogenous bone (AB), often taken from extraoral sites (such as the iliac crest) or intraoral sites (such as the block section of the mandible). The preference of AB sites is due to the fact that the graft contains living cells, cytokines, growth factors, and bone morphogenic proteins, as well as presenting no risk of allergy-based rejection. However the use of AB grafts present potential morbidity of donor sites and risk of resorption; therefore, alternatives for AB have been sought. Potential alternatives include demineralized freeze-dried bone (DFDB), freeze-dried bone (FDB), hydroxyapatite (HA), deproteinized bovine bone (DBB), tri-calcium phosphate (TCP), and bioglass. Allografts include freeze-dried bone allograft and demineralized freeze-dried bone allograft and are harvested from the same species as recipient. There is a potential (albeit small) for immunologic rejection, which is minimized through donor screening and the freezing process. Xenografts are bone-based materials from another species such as bovine bone, coral, or algae. An example is Bio-Oss. There have been conflicting studies on the resorbable nature of Bio-Oss, with some trials demonstrating resorption and others suggesting no resorption. Alloplastic material is synthetically fabricated from calcium-based ceramics, polymers, and other bioactive glasses. A downside for some of the materials in this class is limited applications in aesthetic cases (as is often true in trauma cases) due to a high resorption rate. A large diagnostic challenge in these trauma cases is the loss of vertical height, which often requires a significant volume of graft material to compensate for resorptive changes. This is of particular difficulty in managing traumatic injuries in the growing child. Bone substitutes present difficulties in that graft healing time is often insufficient for prosthetic loading.

Reviewer’s Comments: This article presents an extremely comprehensive review of the available materials for grafting anterior sites. Furthermore, it presents treatment planning challenges such as age of patient, restorative options and their relationship to graft loading, resorption characteristics of the material, and relationship to prosthetic loading. There is an all-too brief mention of the specific challenges for the growing child. However understanding the characteristics of materials such as resorption rates is critical in the comprehensive management of children with traumatic dental injuries.

Additional Keywords: Bone Graft
When You're Taking Out That Tooth, What Are You Breathing In?

Evidence of Aerosolised Floating Blood Mist During Oral Surgery.
Ishihama K, Koizumi H, et al:
J Hosp Infect; 71 (April): 359-364

Particles contaminated with blood can demonstrate a change in direction independent of high-speed evacuation.

**Background:** Previous studies have noted the presence of bacteria close to patients during the use of high-speed rotary instrumentation. This, coupled with the finding that dental students were more often infected with tuberculosis than medical students, led the investigators to question the presence of blood-contaminated aerosols during third-molar surgery. Saliva is considered an otherwise potentially infectious material due to the potential for blood contamination.

**Objective:** To evaluate the quality and quantity of blood-contaminated aerosol following third-molar surgery.

**Design/Methods:** This prospective single-center trial used a standardized oral surgeon operator with aerosol measured by a non-woven absorbable filter towel over a high-volume evacuator system. Patients were all positioned at 45 away from the filter, with the operator standing to the side of the patient (at 3 or 9 o'clock position). The evacuator system was positioned behind the patient.

**Results:** Data from 100 patients were presented for analysis. The majority of teeth removed were horizontally impacted (61%); 16% were categorized as between 30% and 60% of impaction. High-speed rotary instrumentation was used in 79% of cases for a mean of 6.4 minutes. Blood-contaminated material was not found beyond 3 feet from the surgical site. Of interest was the fact that all blood stains captured demonstrated a change in vector from the initial generated pathway during surgery; this was noted at a distance of 20 cm from the surgical site in 76% of patients. The particles that made it "past" this initial 20 cm acted independently of the evacuation system. There was no relationship between the duration of use of high-speed instrumentation and captured blood aerosols. Of the captured particles, 95% measured <5 m in diameter; this is clinically significant as particles 1 to 5 m in diameter can reach terminal bronchioli and non-ciliated alveoli.

**Conclusions:** When high-speed rotary instrumentation is used for oral surgery procedures, the operator needs to be fully aware of the risks of infection through contaminated aerosols.

**Reviewer's Comments:** This is a well-done paper that standardized the operator and collection methods, and accounted for variations in surgical procedures. The findings indicate the possibility of contamination through aerosols, although the sample size was small. This is of particular significance when dealing with potentially infectious patients and support for universal precautions. The fact that the blood droplets were caught on the filter behind the patient suggests the complexities of vector science surrounding the surgical site.

**Additional Keywords:** Blood

**print tag:** Refer to original journal article.
When a Chronic Dental Infection Turns Ugly


Subhashraj K, Jayakumar N, Ravindran C:
Med Oral Patol Oral Cir Bucal; 13 (December 1): E788-E791

Prevotella is a common anaerobic organism isolated from cervical necrotizing fasciitis patients.

Background: Cervical necrotizing fasciitis (CNF) is defined by a rapidly progressing infection that fulminates with an associated resultant high morbidity and mortality. In many cases, there is also gas accumulation in the tissues, an orange-peel appearance to the skin involved, and, in many cases, mediastinal involvement. Bacterial enzymes and toxins amplify bacterial spread through fascial planes. The deeper the infection progress, the more the severe the potential side effects, including tissue necrosis, nerve damage, and localized ischemia. The progression of the infection eventually leads to septicemia, which can cause systemic toxicity and potentially death. Sites of origin for CNF are classically seen as the extremities, trunk, and perineal areas.

Discussion: This case series presents 5 adults with a mean age of 53 years who suffered from necrotizing fasciitis in association with odontogenic infections. In all of the presented cases, the offending teeth were mandibular molars. A common feature to all patients was a chronic, longstanding infection with pain. The range of dental pain was from 19 to 34 days. The most commonly isolated organisms were Streptococcus pyogenes and Staphylococcus aureus, as well as Prevotella and Peptostreptococcus. Patients were hospitalized for a range of 9 to 21 days. All patients in this case-series had chronic health conditions, including diabetes, hypertension, and chronic renal failure—all of which are noted as predisposing factors for CNF.

Reviewer’s Comments: A growing body of literature examines the long-term morbidities associated with dental disease. As with the majority of the existing articles, this study looks at adults but provides information relevant to children as well. European studies have cited the beginning of an "epidemic" of pediatric hospital admissions related to chronic dental disease. As noted in this paper, there are certain health conditions that may predispose someone with odontogenic infections to the development of CNF—diabetes and chronic renal failure, among others sometimes seen in children.

Additional Keywords: Fasciitis

Print tag: Refer to original journal article.
Another Piece of the Bisphosphonate-ONJ Puzzle

Effect of Zoledronic Acid on Oral Fibroblasts and Epithelial Cells: A Potential Mechanism of Bisphosphonate-Associated Osteonecrosis.

Scheper MA, Badros A, et al:
Br J Haematol; 144 (March): 667-676

There is a decrease in cell proliferation in all cell lines exposed to clinically relevant doses of zoledronic acid for 24 hours.

Background: Bisphosphonates (BP) inhibit osteoclast-mediated bone resorption through the binding of hydroxyapatite and are commonly used in the treatment of multiple myeloma, osteoporosis, and osteogenesis imperfecta. Zoledronic acid (ZA) is a BP commonly used in modern medicine that, in recent literature, has been associated with osteonecrosis of the jaw (ONJ). While the exact pathophysiology of ONJ has not been identified, a theory suggests that localized elevated concentrations of BP impair bone repair and healing. It has also been noted that localized injection sites may ulcerate, which leads to a theory that the pathogenesis of ONJ may also be related to epithelial and fibroblast changes induced by BP influences.

Objective: To assess the apoptic effects of ZA on mucosal cells in human gingival cells and oral mucosal cells.

Design/Methods: This in vitro study used human keratinocyte (HaCat) and human gingival fibroblast (HGF) cell lines. Cells were cultured and exposed to ZA at 0.25, 0.5, 1.0, and 3.0 mol/L concentrations over a 24-hour time frame. The selected concentrations were selected due to their clinical relevance in patients using ZA. Cell proliferation and apoptosis were measured.

Results: In HaCat and HGF cell lines, initial damage was noted at the 3 mol concentration at 6 hours. Damage at lower concentrations (1.0, 0.5 mol/L) was noted at 10 and 14 hours. A dose-dependent increase in apoptosis was noted in ZA-treated cells. There was also a decrease in cell proliferation in both cell lines after 24 hours of exposure to ZA at doses of 1.0 and 3.0 mol/L, whereas there was no significant difference in proliferation in the exposed cell lines at 0.25 and 0.5 mol/L.

Conclusions: These findings suggest a potential pathway for ONJ through induced epithelial cell death as well as modulation of the apoptosis pathways (both intrinsic and extrinsic).

Reviewer's Comments: The authors suggest that the mechanism of apoptosis from this paper may not be only a potential pathophysiology mechanism, but also an explanation of why up to 15% of patients with ONJ have no history of previous surgery or trauma. The authors also determined that ZA has an effect on components of both the intrinsic and extrinsic pathways. The reality is that our understanding of the mechanism and propagation of ONJ in patients with BP therapy is in its infancy, but papers such as this put forth inventive in vitro study designs and conclusions to build on.

Additional Keywords: Osteonecrosis

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Long-Term Effects of Cancer and Therapy on Dental Development

Dental Maturity Assessment in Children With Acute Lymphoblastic Leukemia After Cancer Therapy.
Vasconcelos NPS, Caran EMM, et al:
Forensic Sci Int; 184 (January 30): 10-14

Children with acute lymphoblastic leukemia may be more dentally advanced than healthy children.

Background: Dental maturity and dental age are concepts often used to discuss development in children. The literature on the exact relationship is unclear and has been debated in the literature. Previous studies have shown that trauma, systemic illness, and chemotherapy/radiation therapy can affect development of teeth. Children undergoing cancer therapies have been the subject of many studies examining the effects of therapies (radiation and chemotherapy) on dental development in children. Children aged <5 years at the time of initial therapy, when dental development is in a critical phase, have been of particular interest.

Objective: To determine the dental age of children diagnosed with acute lymphoblastic leukemia (ALL) using a standardized method of assessment.

Design/Methods: This retrospective analysis examined panoramic radiographs of children aged 4 to 12 years, healthy controls, and those diagnosed with ALL. Children in the study group were treated using both chemotherapy and/or radiation therapy. The analysis was based on the development of 7 mandibular teeth. The standardized assessment method was the one introduced by Demirjian, in which stages are determined by standard images. Patients who had a history of bone marrow transplant, had congenitally missing teeth, or had expired were excluded.

Results: Data from 92 children were included. No significant difference was found in mean age between the study and control groups. There was a significant difference in dental age, with the ALL group children being advanced in dental age. Eighty percent of children in the study group were aged <5 years at the time of diagnosis and treatment. Differences among chemotherapy groups were not significant, although this could be explained by variations in chemotherapy regimens/cocktails.

Conclusions: There is a significant difference in dental development in children with ALL. Whether this is related to the disease process or the treatments is unclear and requires further study.

Reviewer's Comments: Anecdotally, there is a strong belief (and some evidence) relating cancer therapies to delayed dental development in children. This paper makes an excellent point in that it is extremely challenging (and potentially impossible) to determine whether the disturbances in dental development are related to the disease entity of childhood malignancies or the therapies used to treat them (such as radiation and chemotherapy). Well-designed studies are hard to perform on a large scale because, as this article points out, each child is different, and each "chemo cocktail" may be different as well, so standardization is a Herculean task for any investigator.

Additional Keywords: Development

print tag: () Refer to original journal article.
Maybe Toothpaste Color Does Matter

A Holistic Food Labelling Strategy for Preventing Obesity and Dental Caries.

Cinar AB, Murtomaa H:
Obes Rev; (January 15): epub ahead of print

Children have a high affinity for green lettering with respect to advertising.

**Background:** Chronic diseases such as obesity and caries have been shown to be the root causes of other long-term health issues. They also have an overall negative impact on quality of life. Furthermore, both obesity and caries have numerous overlapping contributing etiologies that have been reported in the literature, such as low socioeconomic status, eating/snacking habits, and television viewing patterns. Previous studies have shown that worldwide unhealthy food marketing aimed at children has ranged as high as 100% in some European countries (meaning all child-targeted advertising is directed toward unhealthy food). Television marketing is directed at affecting families' health-making decisions. Marketing literature has demonstrated that children can recognize "name brands" and associated labeling as young as 2 years of age. Brand name is also known as "target information" and, because this target information is associated with compelling visuals directed at children, food selections are affected. One suggestion, as supported by the World Health Organization's (WHO) Global Strategy on Diet, Physical Activity, and Health, is to link healthy food advertising to a child-friendly visual that is compelling. This could be done by linking a visual heart and tooth diagram. In front of the 2 images is a green text with the words "Health-Friendly." Research has shown that green is often associated with a "positive" response—as in a green traffic light—particularly by children. These findings also account for the fact that many parents have limited proficiency in and knowledge of nutrition and often rely on their children who are susceptible to famous cartoon characters, celebrities, etc.

**Reviewer's Comments:** There is an entire body of literature on advertising and its impact on children's preferences and parents' purchasing habits. The strategy outlined in this paper addresses the current literature and its use in conjunction with WHO recommendations to formulate health-conscious and dental-friendly diet guidelines. It is fascinating to learn what types of strategies are used by companies to influence children. While it may sound factious, it seems that, for true indoctrination on the benefits of preventive health practices, anticipatory guidance toward parents will probably need to be coupled with a vicious little cartoon character named "Streppy" and the green toothpaste that wipes him out.

**Additional Keywords:** Caries

(print tag: () Refer to original journal article.)