Consistency Is Key When Using Fluoride

Effect of Rinsing With Mouthwashes After Brushing With a Fluoridated Toothpaste on Salivary Fluoride Concentration.

Duckworth RM, Maguire A, et al.;
Caries Res 2009; 43 (epub September 16): 391-396

Because most people brush their teeth just twice a day, evidence suggests that mouth rinsing in between with a fluoridated rinse can prevent cavities by keeping oral fluoride levels at an elevated state.

Background: The anti-caries benefits of regularly using topical fluoride agents are confirmed in study after study. Even low concentrations of fluoride are effective in reducing the rate of demineralization of the enamel. Because the use of mouthwash following tooth brushing is on the rise -- either as a decay fighting agent or for mouth freshening -- it is important for dental health professionals to understand the impact of this increased trend.

Objective: To determine whether rinsing with a mouthwash after brushing with fluoridated toothpaste affected oral fluoride retention levels compared with an oral hygiene regimen without mouthwash.

Design: Clinical dental study.

Participants: 29 healthy adult volunteers, aged 19 to 50 years, of both genders, living in a non-fluoridated area continuously for 1 year.

Methods: 3 oral hygiene regimens were tested: (A) Brushing for 1 minute with 1 g of fluoridated toothpaste (Crest Decay Prevention; Proctor & Gamble), followed by rinsing for 5 seconds with 10 ml of bottled water. (B) Same technique as A, but followed by rinsing for 30 seconds with 20 ml of a 100-mg fluoridated mouthwash (Listerine Teeth & Gum Defense; Johnson & Johnson). (C) Same technique as A, but followed by rinsing for 30 seconds with 20 ml of a non-fluoridated mouthwash (Listerine Freshburst; Johnson & Johnson). Subjects used non-fluoridated toothpaste at home for 1 week prior to the study and during the length of the study; they were not permitted to use any other oral care products during the study. Each test morning, whole mixed unstimulated saliva samples (2 ml) were collected by the subjects drooling into plastic vials before each treatment started and following treatment at 10, 20, 30, 60, 90, and 120 minute intervals.

Results: There were no differences between corresponding salivary fluoride concentrations after regimen A and regimen B. But the salivary fluoride concentration attributed to regimen C was consistently lower throughout the experiment with notable differences at the 10, 20, 30 and 60 minute intervals.

Conclusions: Non-fluoridated mouthwash rinse may reduce the anti-caries protection of fluoridated toothpaste.

Reviewer’s Comments: The authors of this study provide important data to consider in recommending or discussing various rinse products and regimens with patients. Although the work was performed on adult population, indications are that the same methodology applied to children would yield the same results. As children are using more mouthrinses, with the introduction of several alcohol-free forms, we must encourage the use of rinses containing fluoride after brushing with fluoridated toothpaste to gain the maximal effect of the fluoride in the toothpaste.

Additional Keywords: None

Print Tag: Refer to original journal article
Current guidelines for removal of dental pulp within 10 to 14 days after replantation of an avulsed tooth are supported by evidence.

**Objective:** To use principles of evidence-based dentistry to assess the validity of guidelines that recommend pulp be extirpated from replanted avulsed teeth within 14 days of replantation.

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

**Methods:** Using 4 internet databases, a literature search was performed. After removing duplicate titles, abstracts were assessed, and then selected papers were examined. Applying inclusion criteria yielded 6 papers (total 236 teeth) for meta-analysis.

**Results:** A statistically significant association between pulp extirpation later than 14 days and increased risk of inflammatory root resorption was found. Earlier pulp extirpation was not associated with reduced risk of inflammatory root resorption.

**Conclusions:** The authors concluded that this guideline recommending pulp be extirpated from replanted avulsed teeth within 14 days of replantation was supported by evidence.

**Reviewer’s Comments:** Dentists look to published clinical guidelines to inform their treatment recommendations for patients. For procedures that are rarely performed, guidelines can provide clinicians with a framework that may help patients achieve optimum outcomes. Many organizations have produced clinical guidelines but a perusal of these guidelines reveals that they are not all equal in quality. Some are solidly based in evidence, others on historical practice, and still others on political turf protection. Reliance on guidelines without a clear appreciation for their grounding in evidence can pose problems for those dentists looking for direction from clinical guidelines. Management of replanted avulsed incisors is an example of a relatively uncommon clinical situation for which guidelines are published. At least 3 organizations have published guidelines on management of replanted avulsed incisors. Can these guidelines be relied upon? Is there evidence to support their recommendations? In a perfect world, guidelines would be produced and revised based on the best quality evidence. In the real world, however; adequate evidence may not be available, the resources required to assess the evidence may not be at hand, or competing interests among groups within dentistry may be at play. This is certainly a possibility in an area such as dental trauma where general dentists, endodontists, and pediatric dentists all claim special interest in the area. Some guidelines explicitly state the level of evidence that support treatment recommendations; others do not. This paper focused on one small but significant component of management of replanted avulsed teeth: timing of pulp extirpation after replantation. Using established and appropriate review methods it achieved 2 ends. This paper confirmed that extirpation of the dental pulp within 14 days of replantation was associated with a lower risk of inflammatory root resorption. It also assessed the validity of a clinical guideline and demonstrated its foundation in evidence. More of this type of work needs to be done.
The duration of the pubertal growth spurt of Class III subjects are about 5 months longer than the 11 months experienced by Class I subjects.

**Background:** One fundamental key in orthodontic treatment for adolescents is understanding human growth and development. In regards to Class III subjects, they have unpredictable growth, seem to grow for a longer period of time, and there is minimal information about the duration of pubertal growth.

**Objective:** To evaluate the duration of the pubertal growth spurt in subjects with Class III malocclusion versus subjects with Class I normal occlusion by using the cervical vertebral maturation (CVM) indicator of skeletal maturity.

**Design:** Cross-sectional clinical study.

**Participants:** 218 Class I or Class III orthodontically untreated Caucasian subjects.

**Methods:** Patients were aged 8 to 18 years. Lateral cephalometric radiographs were analyzed on a conventional viewing screen and traced on acetate by 2 investigators. Measurements were made with mutual agreement between investigators and the CVM stage on each radiograph was assessed by one investigator and checked for accuracy by the second investigator. The pubertal growth spurt was defined to commence at CVM Stage CS3 and terminated at CVM Stage CS4.

**Results:** In regards to gender, there were no statistically significant differences in the duration of the pubertal growth spurt. However the pubertal grow spurt duration was significantly longer (P

**Conclusions:** Average time of onset of the pubertal growth spurt in both Class I and Class III subjects is similar at age 11 years and age 5 months. Class I subjects experienced a pubertal growth spurt of 11 months duration. Class III subjects experienced a pubertal growth spurt of 16 months duration. The longer duration of the pubertal growth spurt in Class III subjects may be related to the greater increase in mandibular length in Class III subjects.

**Reviewer's Comments:** It is important to note that this is a cross-sectional study rather than a longitudinal study. The findings of this study would have been more powerful if it was longitudinal study following the growth of subjects. It would have been appreciated if the authors noted that this was a cross-sectional study at the beginning of the article. Although the authors did eventually note that the results reported in the present study were derived from cross-sectional data, they justify the statistical significance and importance of the results of this study because of the large sample size and the highly significant effect size of the difference in the "duration" of the growth spurt between groups.

Additional Keywords: None

Print Tag: Refer to original journal article
Perceptions of Severe Dental Injuries Differ By Parents, Children

Effects of Severe Dentoalveolar Trauma on the Quality-of-Life of Children and Parents.


Injured children and their parents differ in their perceptions of dental trauma's long-term impact on quality of life.

**Background:** Facial malformations including malocclusion, cleft lip/palate and dental caries can negatively affect a child's self-image and social well-being.

**Objectives:** To assess the impact of severe dentoalveolar trauma on the child patient's and parent's perceived quality-of-life and to assess the perceived pain of the injury and follow-up treatment as reported by the patient and parent.

**Participants:** 23 patient-parent pairs participated in the quality-of-life component and 27 pairs in the perception of pain component.

**Methods:** Patients were children aged 8 to 14 years who suffered dentoalveolar injuries requiring intraoral splinting. Patients and their parents completed Child Oral Health Quality of Life (COHQoL) questionnaires. This validated instrument measures oral health-related quality of life in 4 domains: oral symptoms, functional limitations, emotional well-being and social well-being. Patients and their parents reported their perception of pain at time of injury, placement of splint, and removal of splint using a visual analog scale (VAS).

**Results:** COHQoL questionnaires were completed by 11 patients aged 8 to 10 years and 12 patients aged 11 to 14 years and their parents. Initial scores reported by the younger children indicated concern about what others would think of their mouths. Older children initially reported quality of life scores similar to those of children with cleft lip/palate. Both groups indicated detrimental effects of the injury persisting >12 months with the majority of their concerns in the emotional and social well-being categories. Initial parental scores indicated a significant effect on quality of life involving such issues as time off of work and adequacy of financial resources. At 12 months post-injury, parents perceived that their children continued to be affected by pain and functional issues related to the injury and apparently were not aware of the emotional concerns reported by their children. Patients and parents reported most pain at the initial injury with significantly less pain at splint placement and removal.

**Conclusions:** Quality of life for both children and their parents is negatively impacted by dentoalveolar trauma. Children continue to be affected by the emotional impact of the injury while their parents report long-term concerns related to symptoms and functional limitations.

**Reviewer's Comments:** As with any study that has such small numbers, these conclusions must be interpreted with caution. This interesting paper, however, addresses important issues not previously reported and points to a fertile area for continuing investigation.

Additional Keywords: None

Print Tag: Refer to original journal article
With a school-based intervention of promoting drinking water throughout the day, children’s weight can be reduced.

**Objective:** To determine if promoting water consumption in school could prevent overweight among children in elementary schools. **Design:** Randomized, controlled cluster trial.

**Participants:** Second and third grade students from 32 socially deprived schools in two German communities.

**Methods:** Children from Dortmund were in the intervention group and children from Essen in the control. Water fountains with meters were installed in the intervention school. Bottles (500ml) were filled each morning for each child; 4 lessons of 45-minutes each were developed promoting the healthy effects of clean and cool water. At baseline and follow-up, body weight and height were measured; body mass index was determined and converted to gender and age specific scores. A 24-hour recall questionnaire kept track of all beverages consumed. Water meters recorded the amount of water consumed in the schools. Data were collected and analyzed. **Results:** At baseline, there were 3190 children enrolled with a mean age of 8.26 years. Of children, 50% were males at both schools; 23.4% and 25.9% were overweight in the intervention school versus the control, respectively; mean consumption of water was the same in both schools, but juice consumption was higher in the intervention schools. At follow-up there were 2950 children; 23.5% and 27.8% were overweight in the intervention school versus the control, respectively; in the intervention school, they averaged >1.1 more glasses of water per day than in the control schools; slight differences in juice consumption, but were not significant; water meters showed fluctuations in the amounts of water during the entire study; teacher sessions were graded as very good 65% of the time; and finally, the risk of overweight was reduced by 31% in the intervention group.

**Conclusions:** The authors conclude that with a school-based intervention of promoting drinking water throughout the day, the weight of the children was reduced within one school year.

**Reviewer's Comments:** By allowing children the freedom to drink water during the school day, it reduced the need for snacks and sweetened beverages. The intervention was not disturbing to the classroom and the teacher. Water continues to be the healthiest beverage available and schools should be encouraged to provide optimal amounts during the school day. Once the fountains were installed, the authors report the cost per child for the school year was 13 euros.

Additional Keywords: None

Print Tag: Refer to original journal article
Concordance for autism spectrum disorder is greater in monozygotic twins than in dizygotic twins.

**Objectives:** To use monozygotic and dizygotic twin pairs to evaluate patterns of inheritance of autism spectrum disorder (ASD) and to determine if these patterns varied by zygosity, specific ASD diagnosis, and sex.

**Design:** Cross-sectional study.

**Participants:** 210 dizygotic twin pairs and 67 monozygotic twin pairs that are part of an internet-based autism registry.

**Methods:** Twins were included in the study if they had a diagnosis of autistic disorder, pervasive developmental disorder, not otherwise specified, or Asperger syndrome. Questionnaires collected demographic information as well as presence of an intellectual disability. The Social Responsiveness Scale was used to differentiate between other psychiatric conditions and ASDs. An autism screening tool, the Social Communication Questionnaire, was also administered. Statistical analysis was used to compare data between and within monozygotic and dizygotic twin pairs. Time between diagnosis for twin A and twin B was compared for each twin type to determine risk of diagnosis for the second twin.

**Results/Conclusions:** There was a difference in reported diagnoses by twin type with monozygotic twins being more likely to report having Asperger syndrome and dizygotic twins being more likely to have a diagnosis of other ASD. There was significantly greater concordance among monozygotic twins than among dizygotic twins. None of the female monozygotic twins had Asperger syndrome while of the male-male twins, 14% of the monozygotic twins and 2% of the dizygotic pairs were concordant for Asperger syndrome. Dizygotic pairs with at least one female had significantly decreased risk of concordance.

**Reviewer's Comments:** This study demonstrates that both genetic and non-genetic factors are important contributors to ASD. The authors also provide evidence that gender and zygosity may also play an important role in the heritability of these disorders. The findings in this study relative to monozygotic twins are similar to those of previous studies where the concordance for autism spectrum disorders was 80% to 100%. The concordance rate among dizygotic twins of 30% is consistent with some previous studies but higher than other studies. The authors suggest that the inheritance of Asperger syndrome is different than that of autistic disorder and pervasive developmental disorder based on the finding that monozygotic twins are more frequently concordant for Asperger syndrome. The authors recognize the limitations of a cross-sectional study with parent-reported data but also note that this study is based on the largest sample of twins in a registry with ≥1 sibling affected with ASD.

Additional Keywords: None

Print Tag: Refer to original journal article
Although uncommon today, Ludwig's angina remains a potentially life-threatening condition for young children, but with early recognition, prompt referral, and appropriate treatment, patients usually recover without complications.

**Background:** Ludwig's angina is a rapidly spreading bilateral cellulitis which involves the tissues of the floor of the mouth and is most often associated with odontogenic infections.

**Objective:** To review anatomical considerations and discuss clinical presentation and current management of Ludwig's angina. **Discussion:** The submandibular space is divided by the mylohyoid muscle into the sublingual and submaxillary spaces. Infections may initiate an inflammatory process extending below the mylohyoid line into the submaxillary space. This cellulitis rapidly invades the sublingual space through the fascial planes and expands the floor of the mouth resulting in displacement of the tongue superiorly and posteriorly which produces a potentially life-threatening airway obstruction. Of Ludwig's angina cases, 27% to 30% occur in children with only 50% having an odontogenic origin compared to 90% in adults. Other etiologies in children include lacerations, sialadenitis, mandibular fractures, herpetic gingivostomatitis, tongue piercing, immune deficiency diseases, and diabetes, but it may also occur without any precipitating cause. Causative agents include both aerobic and anaerobic bacteria with streptococcus the most common as well as staphylococcus and bacteroides. Signs and symptoms may include tongue and throat pain, trismus, dysphonia, and drooling accompanied by bilateral submandibular and submental neck swellings as well as firm induration of the floor of the mouth and displacement of the tongue. Systemic findings can include fever, chills, malaise, dehydration, and a generalized ill-appearance. The presence of firm edema involving the floor of the mouth and/or tongue combined with bilateral neck swelling below the mandible are cardinal signs of Ludwig's angina that may progress to airway obstruction. Early recognition of Ludwig's angina is critical and prompt medical attention along with timely consultation with emergency and surgical services is paramount for achieving a successful outcome. Patients should be immediately taken to a tertiary care center and primarily assessed for airway stability. Labored breathing, stridor, oxygen desaturation, and altered consciousness usually require immediate establishment of an airway via endotracheal intubation or tracheostomy. The mainstay of treatment is intravenous antibiotic therapy with penicillin being the most frequent with or without clindamycin or metronidazole. Steroid administration to reduce the inflammation and augment antibiotic penetration has also been suggested. Surgical decompression, once the mainstay of treatment, is now reserved only for those cases that do not respond to medical therapy or have localized abscess formation.

**Conclusions:** Since current reported pediatric mortality rates for Ludwig's angina remain high, 10% to 17%, increased clinical suspicion may necessitate immediate medical and surgical services intervention in order to facilitate early diagnosis, initiate appropriate therapy, and secure the child's airway.

**Reviewer's Comments:** This is a very good review of Ludwig's Angina to include the historical aspects, anatomical and pathophysiological considerations, etiology, signs and symptoms, proper referral, and treatment as well as an evidence-based algorithm for airway management.

Additional Keywords: None

Print Tag: Refer to original journal article
Blood Loss Estimates: Don't Believe Everything You Hear


Visual estimation of blood loss is highly inaccurate by both laypersons and health care professionals.

**Background:** Not uncommonly, children present to the emergency department with concerns of hematemesis (vomited blood) and/or hematochezia (blood passed via the rectum); the magnitude of blood loss reported can influence the management of the situation. The accuracy of health care personnel in the reporting of the amounts of blood loss is both variable and conflicting. No reports of the accuracy of caregivers could be found.

**Objective:** To assess the accuracy of parents in estimating blood loss volume, in comparison to pediatric health care providers.

**Design:** Prospective single-blinded study.

**Participants:** 227 participants (131 parents/caregivers, 58 nurses, and 38 physicians).

**Methods:** Participants visually estimated the volume of a random sample in 2 categories: (A) 1, 5, or 10 ml of artificial blood applied to a diaper (simulated hematochezia) and (B) 5, 10, or 50 ml of artificial blood in a kidney-dish (simulated hematemesis). An "error factor" (estimated volume/actual volume shown) was calculated and compared.

**Results:** Parents provided the most inaccurate estimates overall; the largest over estimate (518 ml) and the highest error factor (23.4) were recorded from a parent. The highest proportion of accuracy was found in nurses. Physicians tended to underestimate volumes; however there was no significant difference between the performance of nurses and physicians. Health care professionals tended to overestimate small volumes and underestimate large volumes.

**Conclusions:** Visual estimation of blood loss is highly inaccurate by both laypersons and health care professionals.

**Reviewer's Comments:** Following treatment both in the operating room and in an office setting, a pediatric dentist may receive a report of blood loss from a parent. This information must be viewed with a great deal of caution. As this study has reported, visual assessments of blood loss are highly inaccurate.

Additional Keywords: None

Print Tag: Refer to original journal article
**Biofilms May Hold Answer to Dental Disease**

*Bacterial Interactions in Dental Biofilm Development.*

Hojo K, Nagaoka S, et al:.


Information from the bacterial populations within dental biofilms can provide us with important discoveries in oral health and disease prevention.

**Background:** We know about the 700 detected bacterial species in the microflora of the oral cavity. We know they play an important role in our oral health and the etiology of oral diseases in humans. And while much is known and publicized about the harmful behavior of certain oral bacteria, we never hear about the beneficial roles of oral bacteria. Why is this? It may be that bacterial populations within dental biofilms found in health (versus disease) share a relationally advantageous connection that may serve to exclude pathogens and bacteria not typically formed there. While more advanced technology must be developed to gain a full picture into this, recent molecular methods have revealed helpful insight into the bacterial species present in dental biofilm communities.

**Objective:** To illuminate and elaborate on the important interactions among oral bacteria within dental biofilm communities.

**Methods:** Ribosomal RNA-based technologies were used (molecular methods) to analyze the diversity of bacterial populations within dental biofilms. Analyses reviewed the way bacteria adheres to and colonizes on the surface of teeth and tissue, the cell-to-cell reactions between distinct bacteria called co-aggregation, and the metabolic communication among oral bacteria. Finally, molecular methods examined bacteriocins and other inhibitory metabolites and the chemical communication among bacteria; this is called quorum-sensing.

**Results:** Molecular methods reveal that almost all dental diseases are caused by dental biofilms made up of a multispecies bacteria community whose colonization behaviors act competitively, not cooperatively.

**Conclusions:** Many bacterial species detected in dental biofilms are, at present, uncultured. Increasing our scientific understanding of dental biofilms will take a multi-faceted approach, from investigating pure cultures and in vitro biofilm model systems to animal model and human investigation systems. Only with more knowledge will we be successful at developing novel methods for controlling dental biofilms.

**Reviewer's Comments:** The authors have made a broad-based appeal for continued development of technologies to shed increased light on this subject; for example, the ability to analyze the commonly accepted functions and metabolisms of a complete dental biofilm. Like cracking a code, we possess tools to understand the diversity of oral bacteria present in the human oral cavity, but lack the key to unlock a full picture of bacterial functions and interactions and how this knowledge can influence positive dental health. In trying to perform better interventions to treat early childhood caries, we might be taking a closer look at the biofilm, and in particular bacteria that can't be cultured. Just like other work I have studied or been linked to, the current paper's reporting indicates some of these bacteria may be deeply involved in caries' initiation and progression.

Additional Keywords: None

Print Tag: Refer to original journal article
Do Face Masks Frighten Children?

The “Fear Factor” for Surgical Masks and Face Shields, as Perceived by Children and Their Parents.

Forgie SE, Reitsma J, et al.:

Pediatrics 2009; 124 (September): 771-781

Children were not frightened by either face shields or surgical masks, but preferred face shields because they could see the doctor's face.

**Background:** Developing a rapport with children and their parents is crucial to pediatrics and pediatric dentists establishing and maintaining behaviors conducive to providing care in an efficient and effective manner. Many health care providers have altered their clothing choice from the dreaded white coats to more "kid-friendly" attire. And some have chosen to not wear face masks or shields. Infection control guidelines recommend that health care workers protect themselves by wearing surgical masks and eye protections or face shields. However, some do not wear masks because of a belief that children will be less fearful. There is little evidence to support this belief.

**Objective:** To determine whether children and their parents prefer physicians wearing face shields or surgical masks.

**Design:** Cross-sectional survey.

**Participants:** 80 children aged 4 to 10 years and their guardians.

**Methods:** In July and August 2005, children and their guardians were given a survey form and color photographs of male and female physicians wearing either face shields or surgical masks. Parents were asked to choose which physicians they would prefer to care for their children and which ones they felt their children would be most comfortable. The children were also asked whether any of the physicians were frightening.

**Results:** Parents were poor predictors of whether their children would prefer face shields or surgical masks. Children were not frightened by either face shields or surgical masks, but preferred face shields because they could see the doctor's face.

**Conclusions:** Some health care providers and parents have a belief that surgical masks are frightening to children. Based upon these findings, this perception is not completely supported. Face shields may be a better choice because children and their parents have a preference for this method.

**Reviewer's Comments:** Pediatric dentists, like their medical colleagues, often express a concern about the possibility that surgical masks may be frightening to children and hamper their ability to interact with their patients in a manner conducive to providing efficient and effective care. This study offers support to the notion that children generally don't care about surgical masks, but do prefer face shields because they can see the doctor's face.

Additional Keywords: None

Print Tag: Refer to original journal article
Can Counting Snacks Reduce Dental Decay?


Freeman R, Oliver M:
Br Dent J 2009; 206 (June): 619-625

Even with innovative school-based programs, it is difficult to change a child’s dietary habits.

Objective: To evaluate an innovative school-based program, Boosting Better Breaks (BBB), in reducing dental decay.

Design: Matched, controlled prospective trial.

Participants: Children aged 9 years recruited from a school district in Northern Ireland.

Methods: Participants were enrolled in the school’s free meal program. BBB schools were the intervention group with 189 students participating; there were 175 participants in the control (non-BBB) schools. Participants were followed for 2 years. A questionnaire was developed to study children's knowledge of healthy and unhealthy snacks. A global clinical examination was performed by one dentist using no probes and artificial light. Children in the intervention group were provided a trash bag to place any snack wrappings, bottles from beverages, and unfinished snacks; children in the control schools were also provided bags. The trash was counted. Data were evaluated and analyzed statistically.

Results: At the 24-month follow-up there were 304 subjects and there were no significant differences between groups. At baseline, 60% of children had ≥1 snack (range 0 to 5) in the trash bag; at 24 months all children had ≥4 snacks (range 4 to 11 snacks). At baseline, 47% of the children visited a shop on the way home from school; at 24 months, 63% visited a shop. Snacks in the intervention school were fruits and milk and the control group chocolates and crisps. At 24 months, all children ate a variety of snacks. Of children, 36% had obvious decay at baseline, and at 24 months 56% had decay with a range of 1 to 7 teeth.

Conclusions: The authors conclude that although there was some initial success in reducing snacks, 2 years later all children were eating snacks. By age 9 years, the children had reached adolescence and were allowed freedom and had pocket money to stop for sweets and beverages before school and on the way home from school. Finally, the authors were disappointed in the results. The BBB program was unable to show the prevention goals of encouraging children to reduce the number and change the type of snacks.

Reviewer's Comments: The authors give us no data on the status of the water fluoride content in the communities involved. They also provide no information on the quality of the free school meal program. In the United States, the disappearance of the neighborhood candy stores replaced by 24-hour convenience stores must affect children’s ability to buy sweets before or after school. In addition, with the majority of kids being bused or driven to school, it may make no difference in buying ability and power.

Additional Keywords: None

Print Tag: Refer to original journal article
There was a significantly higher incidence of surgical glove perforations (and resultant surgical site infections) in surgeries that lasted 2 hours or more.

**Background:** There is a continual risk of transmission of pathogens when working in a surgical field. Prime among transferrable pathogens are skin-borne pathogens such as staphylococcus. In an effort to minimize pathogen transmission, surgical staff has traditionally worn sterile gloves as personal protective equipment. Previous studies have demonstrated that the risk of glove perforation increases significantly after 2 hours, and is also related to improper fit.

**Objective:** To examine any association between surgical glove perforation and resultant surgical site infection.

**Methods:** All surgeries were performed in divisions of Vascular, Visceral, or Trauma surgery. All wounds required incisions and could not be classified as Centers for Disease Control and Prevention (CDC) wound class 4 (dirty, infected). The use of single gloves was standard practice, and double gloving was at the surgeon's discretion based on risk assessment. All patients with CDC wound classes 3 (contaminated), 2 (clean contaminated), and 1 (clean) were included and antibiotic prophylaxis was administered as required by CDC guidelines.

**Results:** Data were collected from 4147 surgical cases. Asepsis was compromised by glove perforation in 16% (677) of cases. In cases where gloves were perforated, incidence of surgical site infection was 7.5%, compared to 3.9% when there was no perforation. This difference was statistically significant ($P < 2$ hours compared to 9.4% of cases that lasted 2 hours.

**Conclusions:** In the absence of surgical antibiotic prophylaxis, surgical glove perforation is a risk factor for surgical site infection.

**Reviewer's Comments:** This was a very interesting article, with a sobering point, particularly as nosocomial infections continue to rise as a cause of death in hospitals. The authors address some of the weaknesses such as times of surgery, types of procedures, and having incomplete information on some surgeries. When pediatric dentists take children or patients with special health care needs to the operating room, the surgeries often last close to 2 hours, particularly with our medically fragile/compromised children; therefore, the issue of glove integrity is vital in reducing post-surgical morbidity.

Additional Keywords: None

Print Tag: Refer to original journal article
While parents reported nearly 80% of children to be in 'significant' pain postoperatively, nearly one fourth received 0 to 1 dose of pain medications.

**Background:** Current estimates suggest that as many as 75% of children who undergo surgery in the United States experience 'significant' postoperative pain. Surgical procedures common in children, such as tonsillectomy and adenoidectomy are very often accompanied by postsurgical pain. There is also a well established body of literature to suggest that pain in children is often undertreated by both parents and healthcare providers.

**Objective:** To systematically assess postoperative pain and pain management in children after tonsillectomy and adenoidectomy surgery (TAS).

**Participants/Methods:** Children aged 2 to 12 years who presented for TAS were included. All children were American Society of Anesthesiology (ASA) physical status I or II (ASA III/IV were excluded). Children were also standardized through other exclusion criteria such as: premature birth, developmental delays, chronic illness, or BMI >25 kg/m². A visual analog scale (VAS) was completed by nurses at 5 postsurgical points, as well as use of a Parents Postoperative Pain Measurement (PPPM) scale. A preoperative anxiety scale (Yale) was used on children preoperatively, and temperament was also assessed. Post-surgically, children were given analgesia based on findings from a Bieri Faces Scale; when ratings were ≥3, 10mg/kg acetaminophen plus 1mg/kg codeine at 4-hour intervals was given. Parents were given standardized home care analgesia instructions.

**Results:** Data were collected from 261 children. Parents reported children in significant pain 77% of the time at day 2 postoperatively and 67% on day 3. Even 1 week post-surgery, 49% of parents felt their children were in significant pain. Despite the high number of parents who reported their child in significant pain, 24% of children received 0 or 1 analgesic dose at home.

**Reviewer's Comments:** While the results here are disturbing, they are thoroughly consistent with the existing literature on pediatric pain management. The truth is that kids are often undertreated and incorrectly dosed for therapeutic analgesia. While I appreciate the findings of this study, I do feel that the use of 6 standardized scales, all with varying levels of interpretation, 'muddied the waters' and made clinical relevance difficult to get through. I appreciate the intent of the authors, but felt the same clinical relevance could have been achieved with fewer scales/measurements, as there was good standardization of the immediate postoperative analgesia by nurses.

**Additional Keywords:** None

**Print Tag:** Refer to original journal article
Of responding parents, more felt comfortable looking up medical information about their child online, than hearing it from their physician.

**Background:** Since the inception of their use, growth charts have increasingly experienced a much wider audience. Aside from the traditional reviewers (physicians), parents and other healthcare professionals have referred to the charts in an attempt to track a child's growth. Part of this awareness is the focus in recent years on body mass index (BMI) as an indicator of childhood malnourishment and obesity. However, true analysis and interpretation of growth chart findings are often filled with nuances of which certain groups, such as parents, may not be aware.

**Objective:** To assess knowledge and understanding of growth charts by U.S. parents.

**Methods:** Data were collected utilizing an online survey given in January 2007. Parents were invited through email invitations by a third-party vendor, who sent emails to over 60,000 parents. Of invitees, 1163 parents actually completed the survey, and 1000 were selected for analysis based on being matched to U.S. Census findings. Survey questions included demographic data, basic knowledge of children's health care and growth monitoring, ability to interpret a series of points on a growth chart, and awareness/comprehension of BMI.

**Results:** Interestingly, 83% of parents reported they would seek information online if their child had a medical problem, compared to 62% who were comfortable relying on verbal information from child's physician or nurse. Of parents, 56% said the explanation behind interpreting growth charts was clear, and 65% felt they understood how to read a growth chart. When asked about direct interpretation, 64% correctly identified the weight on the y-axis, and while nearly 100% had heard of “percentile” as a term, only 68% could identify a percentile of a plotted point. Only 8% of parents could correctly identify all 4 paired height/weight points on the charts.

**Conclusions:** Few parents understand growth charts and the comprehensive analysis of data presented therein.

**Reviewer's Comments:** While a few issues (ie, only 1,100 of 60,000 parents responded, and those might be more apt to “fill out surveys” and rely on the internet) casts some shadow on the representative nature of population, the findings in this study are remarkable. Parents who responded had fairly poor levels of comprehension of the implications of points, and tended to rely more on internet than physicians. In recent years, the utility of BMI charts has been questioned with regard to different ethnic body morphisms and full clinical relevance. This paper suggests that parents need to be instructed to approach growth charts with caution -- if at all.

Additional Keywords: None

Print Tag: Refer to original journal article
Bilateral submandibular gland excision with parotid duct reroutting appears to be the most effective means of surgically correcting excessive drooling.

**Background:** Excessive drooling (also known as sialorrhea) is not only a challenge for caregivers of patients with special healthcare needs, but can also lead to a social stigma and reclusion among peers. It is most commonly seen in patients with cerebral palsy and/or Parkinson disease. There is no “primary medical specialist” for management of sialorrhea; practitioners including pediatricians, internists, otolaryngologists, neurologists, and dentists may be among those involved in treatment. There are various modalities of treatment including pharmacotherapy, botulinum toxin injections, biofeedback, and surgery.

**Objective:** To evaluate published studies in order to assess the efficacy of surgical procedures for sialorrhea management.

**Design/Methods:** A meta-analysis was conducted using a MEDLINE search for sialorrhea, drooling, hypersalivation, and surgery. Inclusion criteria included data on surgical management of sialorrhea, English language, sample size >5 subjects, and presence of outcome data.

**Results/Conclusions:** 325 articles were initially identified. Of these, 50 satisfied all criteria. Sufficient data for analysis of specific surgical techniques were present for only 5 types of procedures. Surgical success indicated an overall high level of success as defined by “reduced drooling.” Overall success rate was 81.6%. The most successful surgery was bilateral submandibular gland excision with bilateral parotid duct rerouting with a success rate of 88%. The success of surgical techniques was consistent as follow-up extended to 1 year postoperatively.

**Reviewer's Comments:** This article did a good job of using the meta-analysis method to demonstrate that surgical management of sialorrhea was fairly successful. I am glad they used clinically relevant outcomes (ie, perception of drooling improvement by caregivers). One caveat is that there were scant mentions as to the etiology of the excessive drooling, which can impact whether surgical management would be successful.

Additional Keywords: None

Print Tag: Refer to original journal article
Physiologic outcomes in patients can be improved through better communication with health-care providers.

**Objective:** To examine evidence-based approaches and therapies in cancer communication. **Discussion:** Improvement in cancer care was the outcome measure. In recent years, it has become well understood that patients with a cancer diagnosis not only have to deal with the psycho-emotional trauma of the diagnosis, but also must keep a steady head in discussing and comprehending potential therapies, prognosis influences, and quality of life issues. Previous studies have demonstrated an improvement in patient health outcomes (such as vital signs, emotional status, blood glucose levels) in association with good patient-physician communications, such as inquiries into emotional health. There is a distinct difference between “cure-oriented” and “care-oriented” communication, and physicians sometimes need to vacillate between both.

**Results/Conclusions:** One example of a communication method is PACE (presenting, asking, checking, expressing) in which the physician presents details of how patients feel, ask questions that have not been answered, check their understanding of information, and express their concerns to patients about treatment options. Future identified areas for research include patient-to-patient communication in which social networking groups such as “PatientsLikeMe.com” may serve to facilitate a common understanding of therapy morbidities and emotional support. Physicians can serve to direct patients and families to these sites as demonstrating concern for their emotional health.

**Reviewer's Comments:** This is a fascinating read and one I highly recommend. There is an art to dealing with issues of a sensitive emotional nature, and this paper focuses on the role of the physician in facilitating emotional well-being and patient participation in therapy. As more children are diagnosed with early childhood caries, it is imperative for pediatric dentists to remain engaged in the life-course implications of the disease, something we don't fully understand at this point.

**Additional Keywords:** None

**Print Tag:** Refer to original journal article
Gap Exists in Literature for Children’s Sedative Agents

Sedation or General Anesthesia for Treating Anxious Children.
Boyle CA:
Evid Based Dent 2009; 10 (3): 69

Discussion: This review of a Cochrane Database System Review examined the literature aimed at answering the questions of the effectiveness and cost-effectiveness of sedation versus general anesthesia for the provision of dental treatment for patients aged

Results/Conclusions: Interestingly, none of the studies qualified as addressing the question. The conclusion was that morbidity studies and cost-effectiveness studies are required for comparing general anesthesia to sedation dentistry for children. Furthermore, clinical guidelines are ultimately determined by the efficacy of therapeutic interventions, and so this paucity of evidence hampers treatment guideline formation. There is also the understanding that randomized controlled trials for this topic may be difficult (although not impossible) to design.

Reviewer's Comments: This brief abstract of a Cochrane review succinctly brings to light a huge, gaping hole in the literature of dental interventions for children. There are no well designed (as defined by being a randomized clinical trial) studies to examine the morbidities of these 2 interventions for early childhood caries. Ashley et al do a good job of getting to the point and underscoring that aside from just taking care of the teeth, we need to take care of the child. This includes understanding the socioeconomic system within which the child functions. This review does not take into account the fact that there are varying behavior, treatment, and medical situations that may cause a provider to prefer one therapy over another. I do wonder how useful randomized controlled trials would be in light of this last statement. I almost feel that operator experience would preclude true 'randomization'.

Additional Keywords: None

Print Tag: Refer to original journal article
Non-nutritive sucking in premature infants may be suggestive the child is ready for successful oral feeding.

**Background:** Feeding has been identified as an early means of establishing a parent-infant bond. Feeding also utilizes infant sensory information (tactile and olfaction) to aid in child development. Sucking, aside from being a source of infant nutrition through breast or bottle feeding, also provides stability for the infant during stressful periods. Premature infants often do not obtain a maximal suck rate until 20 postnatal days. Some premature infants will use non-nutritive sucking (NNS) to develop skills required for successful feeding. Previous studies in the literature have demonstrated that delayed introduction to oral stimulation and feeding may lead to long-term oral aversions. Many neonatology and neonatal intensive care unit nurses attempt to provide early oral motor stimulation to maintain and develop the sucking reflex. The major limitation of existing studies is the ability to separate the NNS from the nature of the prematurity and associated morbidities making careful analysis difficult.

**Objective:** To examine the use of NNS as a support for premature infants in the development of oral feeding habits.

**Methods:** The Neonatal Oral Motor Assessment Scale (NOMAS) was used in a pilot study. Nursing and medical staff were instructed to provide 10 minutes of oral stimulation during the first 10 minutes of a tube feed. The stimulation included stroking the bottom lip and stimulating the tongue until the child began a NNS.

**Results:** Data for the pilot were collected from 14 premature infants. The intervention group achieved oral feeding sooner (although not statistically significant) and spent fewer days in the hospital. Parents received a follow-up phone call who noted that the program not only helped their child but helped them understand how they could affect their child’s feeding.

**Reviewer's Comments:** The major weakness (one I feel comfortable overlooking) of this study was the small sample size; however, trends suggested that the intervention was successful in helping premature infants achieve better feeding skills. It is significant in that premature birth is so often associated with significant post-discharge difficulty for both child and parents. While the results were not statistically significant, I would put forth that this (1) may be a function of sample size and (2) may be less important in this situation than clinical significance.

Additional Keywords: None

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Background: Core build-up materials are a common finding in many dentists' armamentarium. They range from historical materials such as amalgam, cements to composite resins, and glass ionomers. In fact, most recommendations now list chemical, light-cured, or dual-cured composites in combination with bonding systems. In recent years there has been more interest in the possibility of toxic materials released from resins during polymerization (such as monomers).

Objective: To examine the elution of monomers in 3 different core materials: light-cured, dual-cured, and chemical-cured resins.

Methods: The chemical cure (Clearfil®), light cure (Clearfil Photocore) and dual cure (ClearfilTM DC Core Automix) materials were used. This in vitro study was completed using standardized cylindrical specimens (diameter 4.5 mm and thickness 2 mm) with the samples built up in 2 mm increments.

Results: The light-cured material demonstrated the least amount of monomer elution with no detectable Bisphenol A, compared to the dual-cure which released all monomers. The dual-cure actually had an increase of Bisphenol A noted between 24 hours and 28 days.

Conclusions: The light-cure core material was responsible for less monomer elution than the dual-cure and the chemical-cured materials.

Reviewer's Comments: I thought this in vitro was interesting, particularly with the rising interest of Bisphenol A levels after restorative work. Pediatric dentists may find themselves considering core materials for young immature molars and this study suggests that light-cure core materials may be less harmful, although more in depth analysis with larger samples is required.

Additional Keywords: None

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Symptomatic Treatment Works Best With Postop Nausea, Vomiting

Prophylactic Antiemetics in Oral and Maxillofacial Surgery – A Requiem?
Alexander M, Krishnan B, Yuvraj V::
J Oral Maxillofac Surg 2009; 67 (September): 1873-1877

Patients were significantly more likely to demonstrate postoperative nausea and vomiting if their surgery was >2 hours.

**Background:** Postoperative nausea and vomiting are often associated with surgery and anesthesia; it can play a significant role in the quality and duration of recovery. Previous literature has described postoperative nausea and vomiting (PONV) as among the most undesirable outcomes from surgery. PONV is not without further damage, as outcomes such as aspiration, dehydration, gastric bleeding, and surgical site infection are possible. There is some controversy whether patients undergoing surgery should have prophylactic antiemetics or whether treatment should be symptom based.

**Objective:** To determine the incidence of PONV following oral and maxillofacial surgery (OMFS) and to evaluate the need for prophylactic PONV medications.

**Methods:** Data were collected from patients undergoing OMFS procedures. Predictor outcomes included: time of induction and episodes of PONV (including volume, frequency, and color of vomitus). Gastric lavage was standard protocol if patients had ≥2 episodes of PONV in a 6-hour period. Rescue antiemetics were given if the patient did not respond to gastric lavage therapy.

**Results:** Data were collected from the surgeries of 167 patients. Of these, 19 (11%) had episodes of PONV used for analysis. The highest incidence of PONV was for oncology related procedures (33%), followed by TMJ (31%), and miscellaneous (18%). No need for rescue antiemetics was noted, as the 3 patients who had >1 episode of PONV responded to gastric lavage. Females were significantly more likely to experience PONV, and patients were also more likely to experience PONV if they had ketamine anesthesia. Patients subject to surgical procedures >2 hours were also significantly more likely to experience PONV (P

**Conclusions:** Based on findings from this study, symptomatic treatment of PONV seems indicated rather than prophylactic therapy after OMFS procedures.

**Reviewer’s Comments:** Findings in this paper echo those from other studies in which patients subject to surgeries >2 hours had more postoperative morbidity. I would have liked more detail on oncology patients included here as the nature of tumor and previous therapy may influence the emesis threshold. Likewise, previous medications can influence emesis tolerance in patients.

Additional Keywords: None

Print Tag: Refer to original journal article
Even when using the NOMADTM in atypical positions (patient supine) radiation exposure to the operator's thyroid was

**Background:** Developed in 2004 and approved by the Food and Drug Administration since 2005, the AribexTM NOMADTM is a hand-held dental radiation device. Hand-held radiation devices have been standard armamentarium in mass casualty situations such as following Hurricane Katrina and the Indian Ocean tsunami. There are distinctly separate governing regulations and inspections required by states for use of hand-held devices in dental patient settings. This study was actually authorized by the state of Nevada.

**Objective:** To evaluate leakage and backscatter radiation to the operator in varying scenarios.

**Methods:** This in vitro study was conducted on radiation training manikins, dry skulls, endodontic models, and forensic specimens. A source-skin distance of 20 cm was used. Typical (manikin mounted on dental chair in upright position) and atypical (manikin supine or mounted teeth/models) scenarios were used. All operators wore lead aprons with thyroid collars and dosimeter badges were affixed to aprons, as well as operator extremities (hands, fingers, eyes).

**Results:** 915 exposures were made (715 scenario-based and 200 controls). The only recorded measurable deep doses for the study exposures occur in the thyroid, abdomen, and gonads. The gonad region dose was 0.19% of the maximal permissive dose (MPD), the abdomen at 0.072%, and the thyroid at 0.0066%. The whole body dose was 0.09% of the MPD. The study further goes to extrapolate that after 7200 annual exposures, the highest dose would be in the gonad area -- still at 1.9% of the MPD.

**Conclusions:** Used in a typical or atypical fashion, an unprotected operator will accrue TMTM NOMADTM.

**Reviewer's Comments:** Hand-held radiation devices such as the NOMADTM are finding a place in outpatient surgery centers, where traditional xray units prove to be a large storage issue. It is interesting that this study calculated the number of exposures to be 150 per week (by a single operator) based on the samples used. This exceeds what we would normally expect in a dental operating room or practice. One strength of this study is the fact that they used “atypical” operator positioning, which could reasonably be expected if taking radiographs on a child under general anesthesia. This study seems to be in line with a slowly growing body of literature on portable radiography.

Additional Keywords: None

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