

Link Between Caries Risk Assessment, Treatment Regimens Important

Restorative Treatment Thresholds for Occlusal Primary Caries Among Dentists in the Dental Practice-Based Research Network.

Gordan VV, Bader JD, et al:

J Am Dent Assoc 2010; 141 (February): 171-184

Dentists in a practice-based research network are very likely to "cut" into teeth, even when patients are at low risk for caries and lesions are shallow.

Background: Have you ever wondered how your decision to "cut" or "not to cut" teeth given differing size lesion presentations compares to other dentists? Clearly, we all use differing criteria to determine the need to restore versus managing the lesion short of restorative dentistry.

Objective: To quantify carious lesion depths at which dentists intervene surgically for cases of varying caries penetration and caries risk; also, to identify characteristics that are most commonly associated with surgical intervention tension in the way of restorative dentistry.

Design: Questionnaire survey.

Participants: 517 dentists in a dental practice-based network.

Methods: A dental practice-based research network is a group of dentists in private practice under the umbrella infrastructure of a National Institute of Health funded and university-based management of their activities. The authors reported performing at least some restorative dentistry. In the survey, dentists were asked to indicate whether they would intervene surgically in a series of cases involving occlusal caries. Each case presentation included a photograph of an occlusal surface displaying typical characteristics of caries penetration and a written description of a patient at a specific level of risk of developing caries. Photos were 2-dimensional and did not provide any means to actually see the real tooth in question. The authors analyzed associations between surgical treatment with dentists' and practices' characteristics and patients' caries risk levels.

Results: 326 (63%) respondents indicated that in patients at low risk of developing caries, they would surgically restore teeth with lesions located in inner enamel surfaces; 90% said they would surgically restore teeth with lesions located in outer dentin surfaces. Of respondents, 398 (77%) reported they would surgically restore inner enamel lesions, and 486 (94%) reported they would restore lesions located on the outer dentin surface if the patient was determined to be at high risk for developing caries lesions.

Conclusions: Dentists who did not assess caries risk were more likely than dentists who did assess risk to intervene with dentinal lesions ($P = 0.004$). Practitioner-investigators who were in a private practice with <4 dentists were significantly more likely to intervene surgically with enamel lesions than were dentists in large group practices ($P < 0.001$).

Reviewer's Comments: This study shines light on the value to the practitioner of conducting risk-assessment. With ever more present caries detection tools, higher specificity risk assessment tools, and other non-surgical interventions, practitioners will be called upon more and more to manage caries as a disease and not purely in the form of surgical intervention. (Reviewer-Joel Berg, DDS).

Keywords: Caries, Risk Assessment, Restorative Dentistry, Treatment Threshold

Print Tag: Refer to original journal article

Long-Term Follow-Up Shows Significant Number of Indirect Pulp Caps Fail

Qualitative and Quantitative Radiographic Assessment of Sealed Carious Dentin: A 10-Year Prospective Study.

Alves LS, Fontanella V, et al:

Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2010; 109 (January): 135-141

Although indirect pulp therapy is a useful technique for managing large carious lesion in immature permanent teeth, long-term consistent follow-up should be considered an integral component of the procedure.

Objective: To assess radiographic outcomes of indirect pulp capping (IPC).

Design: Long-term prospective case series.

Participants: 32 treated teeth.

Methods: Teeth were reviewed at 6 to 7 months, 3 years, and 10 years after treatment. At the 6 to 7 month assessment, teeth were reopened to assess characteristics of the dentin and to place a permanent restoration. At 3- and 10-year assessments only radiographic assessment was performed. Digital subtraction radiographic assessment was utilized to determine if the size of the demineralized area changed over time and to assess that the mineralization of the dentin adjacent to the pulp cap became more, less, or unchanged in mineral content. Digital subtraction radiographic assessment requires that 2 images taken some time apart and be superimposed exactly. The authors used readily available software to manipulate digital radiographic images to utilize a novel method of image superimposition.

Results: Approximately 40% of IPCs failed at 10 years. The 60% that were successful were likely to demonstrate no change or a reduction in the size of the carious lesion over 10 years and increase of the local mineralization density adjacent to the carious lesion over time.

Conclusions: Through this method, the authors demonstrated arrest of the carious process, deposition of tertiary dentin, and increased mineral density in the area adjacent to the carious lesion.

Reviewer's Comments: Indirect pulp therapy is a particularly useful tool for pediatric dentists. We are often confronted with large carious lesions that approximate dental pulp in young or immature permanent teeth. These situations can prove difficult to manage should pulp exposure occur particularly when root development is incomplete, thus limiting the ability to perform traditional root canal therapy. Indirect pulp therapy often allows completion of root maturation and may obviate the need for root canal therapy altogether. Should the need arise to perform root canal therapy, an improved prognosis will likely result if indirect pulp treatment has allowed the progression of normal root development. Although the focus of this paper was on arresting caries and measurement of that change with imaging techniques, the most important finding was given little attention by the authors. Of teeth that were followed, 40% had unacceptable clinical outcomes after 10 years. Clinicians who perform indirect pulp therapy should consider that persistent long-term follow up would be required. This paper has other findings of importance, however. These investigators have developed a new method for digital subtraction radiography that requires only readily available hardware and off-the-shelf image manipulation software. This new technique is an advance that will allow more cost-effective ways of undertaking digital subtraction radiography to increase the cost-effectiveness of some research protocols and potentially make it a clinical tool. (Reviewer-Michael J. Casas, DDS).

Keywords: Indirect Pulp Therapy, Digital Subtraction Radiography, Clinical Outcomes

Print Tag: Refer to original journal article



Dr Robert Little's Insight on Orthodontic Stability, Relapse.

Dr. Robert M. Little on the University of Washington Post-Retention Studies.

Little RM:

J Clin Orthod 2009; 43 (November): 723-727

In most cases, orthodontic stability is unpredictable and long-term orthodontic instability is predictable.

Objective: To provide insight to maximize the quality of orthodontics case outcomes and minimize relapse.

Design: Follow-up interview to an October 2009, *Journal of Clinical Orthodontics* (JCO) article by Dr. Peter Sinclair and Dr. Robert Little.

Participants: Drs. Sinclair and Little. **Discussion:** 10 questions were posed by Dr. Sinclair and answered by Dr. Little: Q1-What is the source of the University of Washington's post-retention sample? A1-The sample of about 900 was based on Dr. Dick Riedel's American Board of Orthodontics cases and cases treated by grad students, alumni, faculty, and other colleagues. Q2-What procedures improve stability? A2-Supracrestal fiberotomies, maintaining leeway space, mandibular arch-shape and original incisor angulations, or adjusting angulations to standardized norms. Q3-What retention rules should clinicians follow? A3-a) Take and maintain pre- and post-treatment records for proper diagnosis and guidance during retention; b) Following treatment, continue to see your patients initially every 3 to 6 months and then on a yearly basis; c) Maintain fixed lower retention indefinitely and full-time removable upper retention for ≥ 1 year. Q4-How do you advise retaining deep-bite and open-bite cases? A4-For deep-bites, overtreat to 10% overbite and follow with a flat-biteplate wrap-around retainer. For open-bites, overtreat to $\geq 30\%$ overbite and use appliances that prevent tongue interferences. For growing patients, consider high-pull headgear during treatment and retention. Q5-Should retention be different for adults and children? A5-Retention strategy should be the same. Q6-Is there a relapse risk profile that identifies patients with the highest and lowest risk of relapse? A6-Low Risk: Patients with adequate or excess arch-length. High Risk: Those with inadequate arch-length and treated with permanent dentition arch development. Q7-When is extraction treatment more stable than nonextraction? A7-Nonextraction arch development in crowded cases almost guarantees instability. Premolar extraction in crowded cases gives variable results with only 30% stability success. Incisor extraction in crowded cases results in stability results similar to spaced and adequate-arch-length cases. Q8-What about Damon treatment approach? A8-The amount of arch width/length and incisor flaring is impressive and all cases have fixed-permanent upper/lower retention. Long-term prediction would be severe relapse once the lower retainer is removed. Anecdotally noted in Damon Philosophy cases over the years, is facial gingival dehiscence which is not seen as much in cases treated without arch enlargement. Q9-Some are quoted as saying, "Little shows that all orthodontic treatment fails." So why bother achieving high-quality results? A9-Although cases post-retention are susceptible to the ravages of relapse, we should strive for the highest-quality result for health, function, and esthetics, and maintain the result with lifetime fixed retention. Patients deserve our best efforts not just for a few years, but for their lifetime. Q10-Now that you are "retired," are you still busy in professional orthodontics? A10-Yes, teaching has been and continues to be a great hobby. Continued learning is important.

Reviewer's Comments: Great interview follow-up article. JCO Editor, Dr. Robert Keim, writes a nice editorial about the 2 Sinclair/Little articles in the same November 2009 issue of the JCO. (Reviewer-Jonathon Everette Lee, DDS).

Keywords: Incisor Irregularity, Relapse, Retention, Orthodontics

Print Tag: Refer to original journal article

Injured Teeth Prompt Social Judgments by Children

Social Judgments Made by Children in Relation to Visible Incisor Trauma.

Rodd HD, Barker C, et al:

Dent Traumatol 2010; 26 (February): 2-8

Children notice and make social judgments about other children based on their dental appearance.

Background: Previous studies have indicated that people with attractive dentitions are perceived to be more socially, intellectually, and psychologically competent than those with obvious dental problems. Most of these studies involved adults and few have measured children's perceptions relative to dental disease.

Objective: To measure children's social judgments of other children with obvious dental trauma.

Participants/Methods: 291 children in 2 groups (grade 7, aged 11 to 12 years and grade 10, aged 14 to 15 years) viewed full-face color photos of children and made social judgments about the subjects based on their appearance. Photos depicted a boy and a girl with visibly injured incisors and the same children with the incisors digitally altered to normal appearance. A questionnaire was developed using children's own words to describe 9 positive and negative social attributes. Positive attributes were kind, honest, confident, careful, and helpful while the negative attributes were rude, stupid, and naughty. Children in half of each age group viewed the trauma photos and the other half viewed the non-trauma photos. They then rated the social attributes of photographed children using a 4-point Likert scale.

Results: 120 children were in the younger age group and 171 were in the older group. Participants were 54% male and 46% female. The younger age group assigned more negative social ratings to subjects with traumatized incisors than those with intact teeth. In contrast, older children gave subjects with injured teeth higher social ratings than those with healthy dentitions.

Conclusions: Children aged 11 to 12 years assign negative social characteristics to children with obvious dental trauma while children aged 14 to 15 years view injured children more favorably than those with normal dentitions.

Reviewer's Comments: The older group's more positive view of children with obviously injured teeth contradicts not only the younger group's view but also the preponderance of literature on social perceptions of dentofacial appearance. The authors suggest the older children may have masked more negative views out of some sense of "political correctness." They admit that they didn't attempt to determine why the children assigned the social ratings and called for an additional qualitative component in future studies. What is clear is that children notice when teeth are injured and the clinician should strive to restore the child's dental appearance as soon and as well as possible. (Reviewer-Dennis J. McTigue, DDS, MS).

Keywords: Dental Esthetics, Social Judgments, Dental Injuries

Print Tag: Refer to original journal article

Pediatricians Identify Barriers to Implementing Dental Care for Children

Oral Health and Pediatricians: Results of a National Survey.

Lewis CW, Boulter S, et al:

Acad Pediatr 2009; 9 (November-December): 457-461

Most pediatricians feel that although they should counsel parents on oral health and perform dental screening, very few do, citing lack of ability and confidence, along with poor reimbursements.

Background: What is the pediatrician's role in oral health supervision? During residency training, are pediatricians being prepared to perform dental screening? Pediatricians are preventive oriented; can they integrate caries prevention in their daily routines?

Objective: To assess pediatricians' attitudes and practices related to oral health guidance in children aged 0 to 3 years.

Design: Survey of American Academy of Pediatrics (AAP) Fellows that focused on oral health practices in private practices.

Participants: 1618 post residency AAP Fellows.

Methods: AAP periodic survey in 2008 (#70) focused on oral health within pediatric practices. The survey addressed practices, barriers, counseling, and referring among patients aged 0 to 3 years. The survey is a self-administered questionnaire sent to a random sample of non-retired AAP members. Questions on frequency of oral health screening, counseling of parents, what role physicians had in oral health care, and providing anticipatory guidance as well as barriers was asked. Practice characteristics as well as payment types - Medicaid and State Children's Health Insurance Program (SCHIP) - were requested.

Results: 1103 pediatricians completed the survey after 7 mailings for a response rate of 68%. The characteristic responder was in the 40's, worked full-time, in suburban communities and in group practices. 56% were female; 38% of patients were Medicaid/SCHIP insured. Only 36 % reported receiving any formal education in oral health and most of that was after residency training; 25 % reported they were interested, 41 % moderately interested and 29% slightly interested in continuing education on oral health. About 50% of pediatricians reported they examined children aged 0 to 3 years for cavities and 25% assessed for plaque. Although many said they should assess for plaque on teeth, 41% rated their ability as very good, and 23% as excellent. Only 4% reported applying fluoride varnish. Of pediatricians, 17% said the first examination should occur by age 1 year and 29% by 2 years and, for healthy children, almost 50% reported at 3 years of age. The greatest barrier to dental care for children aged 0 to 3 years reported by pediatricians: 74% dentists don't accept Medicaid/SCHIP patients; 72% of patients don't have dental insurance; 52% parents don't think dental visits as necessary; 40% lack of dentists to care for children aged 0 to 3 years and 32 % the long wait period for a dental appointment. Although most felt they needed to identify teeth with caries, they rated their ability as good or excellent 42% of the time.

Conclusions: Most pediatricians feel that although they should counsel parents on oral health and perform dental screening, very few do. Lack of ability and confidence limits performance. Other barriers reported are generally related to the very poor reimbursement from Medicaid and SCHIP insurance.

Reviewer's Comments: With all the age-related anticipatory guidance procedures suggested to perform and a well baby/child visit, it's difficult to expect our colleagues to also perform oral screening, fluoride applications, and toothbrush instructions. (Reviewer-Arthur J. Nowak, DMD).

Keywords: Oral Health, Pediatricians, Barriers

Print Tag: Refer to original journal article

Subjects With Cleft Lip, Palate Viewed Negatively by Others

Persons With Cleft Lip and Palate Are Looked at Differently.

Meyer-Marcotty P, Gerdes ABM, et al:

J Dent Res 2010; 89 (April): 400-404

In photos of patients with repaired cleft lip and palate, their facial expressions were perceived as being more negative than in photos of control subjects.

Background: Many previous studies have focused on self-perception of persons with repaired cleft lip and/or palate but few have evaluated how these individuals are perceived by others.

Objective: To evaluate how persons with a cleft lip and palate are viewed by others.

Participants: 30 volunteers.

Methods: There were 15 male and 15 female volunteers with an average age of 26.9 years. To qualify for the study, participants had to have normal vision, no facial anomalies, and not currently being treated for a medical or dental condition. There were 2 parts to the study. In the first part, participants viewed 18 photographs of young adults with a repaired unilateral cleft lip and palate and 18 control photographs that were age matched to the cleft group. Cleft patients had their clefts repaired using standard protocols at the same institution. All photographs were taken with eyes focusing straight ahead and with a neutral, non-smiling expression. As participants viewed the photos, eye movements were recorded relative to the part of the face they looked at and for how long. Time spent looking at the nose, mouth and eyes were tracked for each image. In the second part of the study, participants were asked to rate each face for appearance, symmetry and facial expression.

Results: Both duration and frequency of time spent looking at the mouth of cleft photos was greater than for control photos. Participants also spent significantly less time looking at the eyes of cleft photos compared to the control photos. When asked to rate appearance, symmetry, and facial expression, the cleft lip and palate photos were rated significantly more negative in all categories compared to controls. Average scores for the cleft photos were from 3.0 to 3.7 while for the control photos were 5.7 to 6.3 with 9 being very positive.

Reviewer's Comments: In this study, the authors demonstrated that persons with cleft lip and palate are viewed differently and often in a negative way relative to their appearance. In all photos, subjects had a neutral, unsmiling expression, yet subjects with a repaired cleft lip and palate were evaluated as having a more negative facial expression when compared to the control subject photos. (Reviewer-Rebecca L. Slayton, DDS, MS, PhD).

Keywords: Cleft Lip, Cleft Palate, Facial Asymmetry, Perception

Print Tag: Refer to original journal article

Digital Phosphor Plates Frequently Exhibit Microbiologic Contamination

An Evaluation of Microbiologic Contamination on a Phosphor Plate System: Is Weekly Gas Sterilization Enough?

Kalathingal S, Youngpeter A, et al:

Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2010; 109 (March): 457-462

Improper handling, inadequate sealing of plastic barrier bags, or lack of daily gas sterilization of digital phosphor plates may result in bacterial contamination.

Background: Digital radiography in dentistry has gained increased popularity and widespread use in both the academic and private practice. Important advantages over traditional films include reduced radiation exposure for the patient and health care workers and elimination of hazardous processing chemicals. The foremost problem is infection control and cross-contamination.

Objective: To determine if weekly gas sterilization and rigid barrier protocols can prevent microbiologic contamination of photostimulable phosphor plates (PSP) in a predoctoral clinic, and to determine sources of contamination.

Methods: 50 PSP plates in clinical use and 25 gas-sterilized control plates were randomly and equally sampled during 2 consecutive clinic weeks beginning on the first day of use following weekly sterilization to evaluate for contamination. Phosphor plates were removed from their infection control barriers and transferred onto a blood agar plate with both sides being impressed in the medium. Each plate was sealed, incubated at 37°C and examined daily for 72 hours. Number, color, shape, type of margin, size, distribution, and variety of colonies were recorded. Representatives of each type of colony were selected for Gram staining and microscopic examination. To determine the possibility of an oral source of bacterial contamination, 17 colonies were cultured using Mitis-Salivarius (M-S) agar to detect oral streptococci. Exact and cluster-based statistical analyses were used to compare test and control plates in terms of rate of contamination.

Results: 28 (56%) test plates exhibited growth of bacterial colonies on blood agar, with 45% of colonies located on the edge of the PSP plates. There was no statistically significant difference in contamination rates of the test plates between work days or work weeks. Of bacterial colonies selected for growth on the M-S agar, 11 (65%) were gram-positive and 6 (35%) were gram-negative. Also, 13 (77%) exhibited growth on the Salivarius media. Of these, 9 were gram-positive with 6 being cocciform, which is consistent with oral streptococci.

Conclusions: The sealed barrier bag may not be sufficient to prevent plate contamination and problems of cross-contamination continue to be a major issue regarding digital radiography. Reinforcement of infection-control techniques and daily gas sterilization may be a solution.

Reviewer's Comments: A previous investigation determined that 58% of phosphor plates used in the predoctoral clinics was microbiologically contaminated and due to the number of handlers, the source of contamination was difficult to determine. This follow-up investigation added a weekly ethylene oxide sterilization of the phosphor plates to the pre-established infection-control protocol, but results indicated a 56% growth of bacterial colonies, with 35% of these colonies consistent with oral streptococci contamination prompting investigators to recommend gas sterilization between patients. (Reviewer-Erwin G. Turner, DMD).

Keywords: Bacterial contamination, digital radiography,

Print Tag: Refer to original journal article

Lancet Retracts Article Linking Autism, MMR Vaccination

Retraction -- Ileal-Lymphoid-Nodular Hyperplasia, Non-Specific Colitis, and Pervasive Developmental Disorder in Children.

The Editors of The Lancet:

Lancet 2010; 375 (February 6): 445

A recent retraction in *The Lancet* has removed a cornerstone used by those wishing to promote an association of autism with the measles, mumps, and rubella vaccination.

Discussion: In February 2010, a release in newspapers and on radio and television, indicated that Lancet, a highly respected medical journal, had retracted an article. The original article was published in Lancet, Volume 351, on February 28, 1998. The retraction states, "Following the judgment of the UK General Medical Council's Fitness to Practise Panel on January 28, 2010, it has become clear that several elements of the 1998 paper by Wakefield et al are incorrect. In particular, the claims in the original paper that children were 'consecutively referred' and that investigations were 'approved' by the local ethics committee have been proven to be false. Therefore we fully retract this paper from the published record." For many, this retraction has removed from the scientific literature one of the cornerstones used by those wishing to promote an association of autism with the measles, mumps, and rubella (MMR) vaccination.

Reviewer's Comments: The publication of this article and its' subsequent retraction is an example of a responsible editorial policy. It is sad that the retraction took 12 years. It is also a reminder to all of us to have a clear understanding about the levels of evidence when assessing a publication and further, the importance of a reasonable sample size. While I am empathetic to those having autistic children, and their need to attribute a cause to autism, it now seems clear that there is no association, other than the child's age, between the diagnosis of autism and the MMR vaccination. (Reviewer-Paul O. Walker, DDS, MS).

Keywords: Autism, Measles, Mumps, Rubella, Vaccination

Print Tag: Refer to original journal article

Urine Fluoride Level May Indicate Total Exposure to Fluoride

Relationships Between Fluoride Intake, Urinary Fluoride Excretion and Fluoride Retention in Children and Adults: An Analysis of Available Data.

Villa A, Anabalón M, et al:

Caries Res 2010; 44 (March): 60-68

For children and adults, it is possible to obtain reasonably good estimations of community-based total daily fluoride intake and daily fluoride retention, using daily urinary fluoride excretion data.

Background: It seems that almost each day in our practices we encounter a patient who has a complex fluoride intake pattern. All of our patients receive fluoride from a variety of sources. Therefore, when trying to determine the need for fluoride supplementation, particularly in a moderate to high caries-risk patient, one must have a sense of the total fluoride intake so as to provide the desired protective benefit, without the risk of fluorosis.

Objective: To examine the relationship between total daily fluoride intake (TDFI), daily urinary fluoride excretion (DUFE), and fractional fluoride retention (FFR) using data available from sources extracted from other studies.

Methods: After identifying the DUFE as reported in these studies, the authors wanted to clarify the ability of DUFE to predict total daily fluoride intake and, therefore, risk of fluorosis development. Examination of published reports of simultaneous measurement of TDFI and DUFE, together with data from 2 unpublished Chilean studies, yielded data for 212 children aged <7 years and for 283 adults aged 18 to 75 years. The relationship between DUFE and TDFI was studied for children and adults, separately. Daily fluoride retention (DFR) was estimated as a function of TDFI in children and adults assuming an average 90% fluoride absorption, this figure being based on other studies, with the numerical relationships between the estimated FFR and TDFI being explored.

Results: Limiting FFR values of 0.55 and 0.36 were found for children and adults, respectively, above a threshold of TDFI of 0.5 and 2.0mg, respectively. Neutral fluoride balances were predicted when TDFI was equal to approximately 0.07 mg fluoride per day for children and 0.8 mg fluoride per day for adults.

Conclusions: For children and adults, it is possible to obtain reasonably good estimations of community-based TDFI and DFR, using DUFE data.

Reviewer's Comments: Whereas there is discussion underway within some organizations to limit the supplementation of fluoride to those patients at risk to avoid unnecessary enamel fluorosis, the results of this study provide an important means to assess the TDFI and to perhaps then verify that increasing fluoride intake further for specific patients would not risk fluorosis. However, we must be aware that if increased supplementation yields fluorosis, it is nearly always mild and not perceptible to the patient. (Reviewer-Joel Berg, DDS).

Keywords: Fluoride Metabolism, Fluoride Retention Estimation, Fluoride Urinary Excretion

Print Tag: Refer to original journal article

Constipation Can Make You Cranky!

Prevalence and Associated Clinical Characteristics of Behavior Problems in Constipated Children.

van Dijk M, Benninga MA, et al:

Pediatrics 2010; 125 (February): 309-317

A behavior assessment should be part of the diagnostic workup for functional constipation.

Background: Childhood functional constipation is a defecation disorder. Children with constipation oftentimes are highly anxious about painful defecation and tend to withhold their stool. Behavior problems are noted frequently in constipated children and in children with fecal incontinence. The prevalence in the general population is from 1% to 30%. Behavior problems are common in constipated children. However, it has not been determined if constipation is the cause or consequence.

Objective: To assess prevalence of behavior problems in children with functional constipation.

Design: Cross-sectional study.

Participants: 133 children ranging in age from 4 to 18 years.

Methods: The sample included children with functional constipation who had been referred to a gastrointestinal outpatient clinic. The Child Behavior Checklist was used to assess emotional and behavioral problems as reported by parents.

Results: Children with constipation and nighttime urinary incontinence had an increased risk for having overall behavior problems.

Conclusions: Behavior problems are common in children with constipation. The authors suggest that behavior screening be a part of the diagnostic workup. The study had several shortcomings: sample size was quite small; cross-sectional design did not allow causality to be addressed; use of parent as historians could be a source of bias; and the sample of children presented for treatment in a constipation center and thus a comparison to the population at-large could not be made.

Reviewer's Comments: Although an interesting study, the limitations created by the sample mix and size, cross-sectional design, and possible parent bias limited the value of this study. (Reviewer-Paul O. Walker, DDS, MS).

Keywords: Childhood, Constipation, Behavior Problems

Print Tag: Refer to original journal article

Toothbrushing -- Practice Makes Perfect

The Effect of Brushing Time and Dentifrice Quantity on Fluoride Delivery In Vivo and Enamel Surface Microhardness In Situ.

Zero DT, Creeth JE, et al:

Caries Res 2010; 44 (February): 90-100

Increasing duration and limiting rinsing can improve brushing effects.

Background: For fluoride dentifrice to have a maximum effect on caries prevention, the frequency of brushing, rinsing, quality of paste used, and duration of brushing are all important; rinsing after brushing reduces fluoride availability. Most estimates of brushing time have been between 30 seconds and 60 seconds. Dentifrice quantity data is limited, but 1.0 to 1.5 g is typical in Western societies.

Objective: To determine the distribution and retention of fluoride on post brushing rinsing and length of brushing along with its remineralization effects.

Design: Randomized, single center, single product, multi-use crossover design.

Participants: 57 participants aged 25 to 65 years, in good physical/oral health, not pregnant or lactating.

Methods: Palatal appliance was fabricated to hold 4 bovine enamel specimens; subjects brushed for 5 different timed periods with 1.5 g of an 1100 ppm dentifrice and 60 seconds with 0.5 g of the same paste. After brushing, subjects spit into a tube and followed with a 10 second, 10ml rinse with deionized water into another tube; saliva samples were collected before brushing and following brushing at 5 different intervals. The palatal appliance was removed 4 hours after brushing and enamel slabs tested for microhardness and fluoride uptake analysis. Fluoride analysis of expectorate and saliva were determined.

Results: After randomization, 51 subjects remained comprised of 30 males with an average age of 34.7 years. Length of brushing greatly influenced fluoride content in the expectorate, rinse, and saliva. With shorter time periods, more dentifrice remained on the bristles. There was a positive linear relationship between brushing, enamel strengthening, and fluoride uptake.

Conclusions: Brushing duration had a major impact on fluoride distribution. Increasing brushing for 30 seconds to 180 seconds increased oral fluoride retention, which increased fluoride deposition into the enamel. There was a marked increase in saliva fluoride concentration with greater amounts of dentifrice used. The in situ remineralization model used was found to be insensitive to differentiate changes in the enamel from varying brushing duration because there was no biofilm mediated demineralization challenge. The results of this clinical investigation in adults suggest that the generally accepted times spent brushing with a fluoridated dentifrice, can influence retention of fluoride, and therefore, affect remineralization. Increasing the quantity of dentifrice from a pea size amount to a full brush length delivered more fluoride to the enamel surfaces thereby increasing fluoride efficacy.

Reviewer's Comments: Because the subjects were adults and all the enamel was from permanent teeth, we can only speculate the effect in children and primary enamel. The length of unsupervised brushing by school-aged children is most likely around 30 seconds; preschool-aged children should be supervised during brushing. Amount of dentifrice must be regulated in children aged <6 years for fear of ingestion. We should suggest timer use because children's sense of time is limited. (Reviewer-Arthur J. Nowak, DMD).

Keywords: Brushing, Fluoride, Rinsing, Timing

Print Tag: Refer to original journal article

Poor Oral Cancer Diagnosis Could Be Associated With Patient Apathy

Is Early Diagnosis of Oral Cancer a Feasible Objective? Who Is to Blame for Diagnostic Delay?

Gómez I, Warnakulasuriya S, et al:

Oral Dis 2010; 16 (May): 333-342

The mean time from initial presentation to visiting a healthcare provider for oral cancer patients was 105 days.

Discussion: Globally, the overall incidence and mortality of oral cancer is increasing. In many cases, disparities in incidence rates are associated with different cultural habits (such as use of the areca nut). In the context of the rising incidence rate is the fact that demographics of oral cancer are shifting to a younger age cohort. Oral cancer has a poor long-term prognosis (5-year survival 20% to 50%), typically due to advanced staging at time of diagnosis. Specific considerations are: (1) time from initial symptoms to patient presentation to a healthcare provider and (2) time from initial presentation to final diagnosis. Both considerations are added to arrive at an overall diagnostic delay, which in some studies has been as long as 4 months. A 2007 study noted that the mean time from first symptom to presentation to a healthcare provider was 105 days, and the current authors speculate that access (defined as the ability to obtain services based on patients' health needs) may also play a significant role in the advanced initial staging of many oral cancers, although this has proven largely inconclusive. Of further interest is that while early diagnosis inconclusively is related to staging and disease progress it has been shown to reduce treatment-related morbidities, and in-treatment quality of life. Accessibility, while possibly related to initial disease staging, seems to be more significantly related to staging of cancer recurrences. In attempting to identify patients at risk for diagnostic delay, one report from Thailand noted use of traditional herbal medications before visiting healthcare providers as highly significant. Finally, it was noted that a diagnostic delay related to physician's delay may be associated with how the healthcare provider interprets illness details from the patient.

Reviewer's Comments: An interesting read in that the authors take a condition with a classically poor prognosis and attempt to break down potential non-biologic reasons for disease progression. This paper provides an incredibly thorough review of the oral cancer compliance/follow-up literature. And, in the spirit of "garbage in, garbage out" they note that many physician recommendations may be based on faulty information from patients in the absence of a clinical examination. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Oral Cancer, Early Diagnosis, Diagnostic Delay

Print Tag: Refer to original journal article

Quality of Life Measures Can Be Helpful in Oral Medicine

The Use of Quality of Life Measures in Oral Medicine: A Review of the Literature.

Riordain RN, McCreary C:

Oral Dis 2010; March 9 (): epub ahead of print

A little more than 1% of all oral medicine quality-of-life citations use a validated scale.

Background: Quality of life (QoL) has been defined by the World Health Organization as “not only the absence of disease or infirmity, but also the ability of a person to lead a productive and enjoyable life.” QoL has also been recognized as a quantifiable outcome measure, which includes several domains: physical health, mental health, social functioning, satisfaction with treatment, future treatment concerns and overall well-being.

Objective: To examine use of patient-reported QoL measures in oral medicine.

Design/Methods: A systematic review was conducted in Medline, Embase, CINDHL, Web of Science Citation, and the Cochrane database. Papers were required to: be written in English, published in a peer reviewed journal, and use a validated QoL measure.

Results: Out of an initial yield of 5310 citations, 1% (63) met all inclusion criteria. Approximately 40% of these final results dealt with QoL associated with a specific condition. The Oral Health Impact Profile-14 (OHIP-14) was the most commonly used instrument (43%) followed by the Medical Outcome Survey Short Form (SF12 in 36%). Very few QoL studies that looked at systemic illnesses related their results to oral health QoL, even when the disease had significant oral manifestations, such as Sjögrens disease.

Reviewer's Comments: This review demonstrates that QoL is not only a vital measure of disease morbidity, but one that can be measured in several manners with varying degrees of success. The domains listed above (particularly future treatment concerns and overall well-being) can be critical in dentistry to identify positive treatment outcomes. These domains are often modified to correlate with specific health conditions. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Quality of Life, Oral Medicine

Print Tag: Refer to original journal article

No Dentist Needed -- I Just Go to the Emergency Room

Doctor, My Tooth Hurts: The Costs of Incomplete Dental Care in the Emergency Room.

Davis EE, Deinard AS, Maïga EWH:

J Public Health Dent 2010; March 10 (): epub ahead of print

In Minnesota, from 2004 to 2005, there were 10,000 dental-related emergency room visits accounting for almost \$5 million dollars

Background: A major barrier for Americans to access preventive and routine dental care is finances. Recent reports from the Agency for Healthcare Research note that 100 million people in the United States, and 20% of children and young adults had no form of dental insurance in 2004. Aside from finances, for those with public assistance insurance (Medicaid), finding a dentist who accepts their plan can also be a significant barrier to care. In many instances, these patients end up using the emergency room (ER) as their surrogate dental care. This can be a significant financial toll on the healthcare system. In 1997, it was determined that in North Carolina, there were 62,000 avoidable dental ER visits which accounted for \$1.6 million in reimbursements.

Objective: To assess charges for ER dental visits in Minneapolis-St. Paul.

Methods: Data were collected during a 1-year period from 2004 to 2005, and was based on ICD-9 codes. Approximately 4% of all patients presented to the ER for 3 dental complaints. Visits totaled >10,000 and accounted for \$4.7 million, with an average charge per visit of \$459. It should be noted that these visits were EXCLUDING dental/oro-facial trauma visits. In one of the 5 hospitals, most visits occurred on weekdays when other offices were open.

Conclusions: ER use for dental care rarely provides definitive treatment and is a significant burden to the healthcare system.

Reviewer's Comments: I would recommend all dentists (particularly those who treat children) carefully read this article. It paints a grim picture - most visits to ERs were during "normal business hours" and the average ER visits was over \$450, and most impressively, these were not including traumatic injuries. With the current economic situation, this is bound to get worse, or become more of the "norm", and dentists need to be able to reach within their communities. On an editorial note, hopefully this also demonstrates to policymakers that NOT increasing Medicaid reimbursement rates can have a more expensive effect on health care. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Utilization, Emergency Room, Dental Care

Print Tag: Refer to original journal article

Speaking a Common Language in Assessing A Child's Tonsils

Reproducibility of Clinical Grading of Tonsillar Size.

Ng SK, Lee DLP, et al:

Arch Otolaryngol Head Neck Surg 2010; 136 (February): 159-162

The Brodsky scale appears to translate well between individual assessors.

Background: One of the major causes of obstructive sleep apnea (OSA) in children is adenotonsillar enlargement. For many clinicians, tonsil size is a primary referral tool. This can be challenging, particularly in young children, as the airway is a dynamic collection of anatomical structures that can influence obstruction to varying degrees. The Brodsky scale measures the amount of oropharyngeal airway occupied by both tonsils as an approximate percentage.

Objective: To assess the reproducibility of the Brodsky scale.

Design: Retrospective review.

Methods: Children undergoing endoscopy as part of a sleep study were videotaped (specifically the tonsils) and 60 random samples were obtained. Using the Brodsky scale, 12 independent observers were asked to grade the tonsils: Grade 1 was tonsils < 33% oropharyngeal airway, Grade 2 was 34% to 66%, and Grade 3 was ≥ 66%.

Results: Mean interclass correlation coefficient (ICC) was 0.86, and when 2 sets of observations were assessed, the ICC was 0.76. One outlier observer was identified as all his readings were different than other observers.

Conclusions: The Brodsky scale has a good degree of reproducibility.

Reviewer's Comments: The authors point out in the introduction that airway assessment of a child is an oft-changing entity, with differences in relative macroglossia, tongue position and tonsillar size as well as peri-tonsillar tissue adiposity. This study demonstrates that the Brodsky scale is a good at relating one person's assessments to another. Within dentistry this is critical in the instances of pre-assessment for sedation patients. It is of interest that there was one observer who was consistently "off" -- it does demonstrate that no system is perfect. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Tonsils, Patient Assessment, Brodsky Scale, Sleep Apnea

Print Tag: Refer to original journal article

Obese Children With OSA Have Poorer Dietary, Play Habits

Dietary and Physical Activity Patterns in Children With Obstructive Sleep Apnea.

Spruyt K, Capdevila OS, et al:

J Pediatr 2010; 156 (May): 724-730

Kids who were obese and had obstructive sleep apnea were >2 times more likely to eat fast food regularly.

Background: Sleep disordered breathing (SDB) has been strongly associated with obstructive sleep apnea (OSA), and likewise with decreased physical activity and reduced overall quality of life. Endogenous hormones such as ghrelin and visfatin have been linked to energy balance and metabolism; disruption in levels may predispose a child to weight gain, and eventually obesity.

Objective: To examine diet and physical activity within a population of children with obstructive sleep apnea.

Design: Cross-sectional study.

Participants: 245 children aged 5 to 9 years.

Methods: Parents of children completed a sleep questionnaire, and both non-snoring and snoring children were randomly selected. Children could not have any other chronic medical condition, or craniofacial syndrome. Parents of selected children completed a food frequency and physical activity questionnaire which recalled habits from the previous week. An overnight polysomnography test was also conducted to assess degree of apnea.

Results: Polysomnography results demonstrated no differences in OSA between the obese and non-obese populations; however, breakdown did demonstrate that obese children were 1.3 times more likely to be obese. It was noted that the OSA+/obese group ate less fruits, were 2.2 times more likely to eat fast food than the OSA+/non-obese group, and were significantly less active physically. Obeseogenic hormones (ghrelin and visfatin) were significantly higher in the obese+/OSA + group.

Conclusions: Children who were obese and had OSA were less likely to be physically active and had poor dietary habits.

Reviewer's Comments: The findings in this study seem intuitively right, yet it was interesting to see the well-controlled variables that were measured. I thought the study itself was well done, and the stratification of the OSA and obese/non-obese patients made a great deal of clinical sense. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Sleep Apnea, Diet, Physical Activity

Print Tag: Refer to original journal article

You Can Learn a Lot From a Cough

Cough in the Pediatric Population.

Goldsobel AB, Chipps BE:

J Pediatr 2010; 156 (March): 352-358

There is real value to understanding the nature and interpretation associated with different coughs.

Discussion: The most common symptom for which children present to medical offices in the United States is cough. There are several potential etiologic factors including pollution, environmental, tobacco, particulate, passive smoke exposure, and humidity aberrations. Approximately 10% of children in the U.S. are given antitussive medications weekly, although there is inconclusive evidence as to its safety and efficacy in a pediatric population. Children may normally experience 10 to 11 cough episodes per day. Key questions to determine if a cough is abnormal include: (1) length of cough with >8 weeks as chronic, (2) character of the cough with descriptions such as “barking” used to describe specific illnesses (croup), (3) productive or non-productive, (4) nocturnal or not, which is noted as pathognomonic for asthmatics, (5) age of child (this is critical as younger children may be more prone to anatomical abnormalities). Potential causes include: gastro-esophageal reflux (GERD), psychogenic cough, bronchitis, and asthma. To treat psychogenic or “habit cough syndrome”, therapies include: self-hypnosis, biofeedback, and suggestion therapy. Furthermore, upper airway cough syndrome (previously postnasal drip) is a prevalent reason for chronic cough in children.

Reviewer's Comments: This was a great read. It is a wonderful review for anyone who treats children. Too often dentists may overlook seemingly benign physical signs on a regular exam, which can indeed be indicative of more serious issues. When I am teaching residents sedations, this is one area we carefully question and examine. There is a real value to understanding the nature and interpretation associated with different coughs, particularly as it can affect therapy outcome measures, success, and, most importantly, patient safety! (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Cough, Pediatrics

Print Tag: Refer to original journal article

News Bulletin -- Exercise Is Good for Kids

Impact of an After-School Physical Activity Program on Obesity in Children.

Aguilar FS, Martínez-Vizcaino V, et al:

J Pediatr 2010; March 12 (): epub ahead of print

Boys and girls demonstrated total lower post-program cholesterol levels.

Background: Spain is experiencing a major epidemic in childhood obesity, far outpacing many other developed nations, with a 6% increase in 12 years. While some studies have evaluated short-term benefits of physical activity on obesity status, few have looked at long-term success. Details that have been and need to be assessed include: overall body mass index (BMI) change, net weight gain/loss, and refractory weight gain.

Objective: To evaluate the effect of an interventional motivation program on obesity, blood lipids, and blood pressure in children over a 2-year period.

Design: Cluster-randomized controlled trial.

Participants: 375 children aged 9 to 10 years.

Methods: 20 schools throughout 20 towns in the Cuenca province of Spain were used. The physical activity program (MOVI) consisted of 3 weekly 90-minute sessions per week for 28 weeks of the year with an incentive system for improvement for program adherence.

Results: The program was associated with lower overweight status in females and increased height. Boys in the intervention group demonstrated an increase in body fat percentage. While program participants did have lower total cholesterol levels, there were no significant differences in blood pressure or triglyceride levels.

Conclusions: The MOVI intervention program did demonstrate significant health benefits for children.

Reviewer's Comments: A good sample size that demonstrated what we knew in our hearts --- exercise is good for kids! This is timely in that many schools have physical education programs being cut and it is critical to underscore that kids needs a strong body as well as a strong mind. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Childhood Obesity, Intervention, Physical Activity

Print Tag: Refer to original journal article

It May Not Seem Like It, but Your Patient May Be in Pain

Perceiving Pain in Others: Automatic and Controlled Mechanisms.

Craig KD, Versloot J, et al:

J Pain 2010; 11 (February): 101-108

Observers tend to make assumptions based on tissue damage and gauge “appropriate pain”, which may be wrong.

Discussion: There is a unique weight that accompanies interpreting pain in others. Specific factors, such as language (both verbal and physical), facial expression and, in some cases, vocalizations can act as cues for the person in pain. The challenge lay in the fact that pain is a highly subjective and individualized entity and communicating it sometimes may prove to be difficult. Observers may tend to make assumptions on nature of tissue damage and resulting “appropriate pain”, which is often in error. In fact there is a clear distinction that needs to be made between “classical” pain (often expressed through self-reporting) and nociception- the physiologic response to unpleasant stimuli (which may be reflected in physiologic features such as flaring nostrils). These can also be classified as “unintentional” and “intentional” expressions of painful experiences. Of interest, is that these develop as the individual matures and is one theorized reason that caregivers and healthcare providers have, in the literature, been shown to be such poor judges of pediatric pain. Medically unexplained pain is often doubted, particularly when there is some question over the source's reliability (ie, a child). Furthermore, there is the distinct possibility that the suffering person has an innate capacity to control expression from pain, and this can cast doubt on the observer.

Reviewer's Comments: In recent years, studies have demonstrated that parents and physicians are extremely poor judges of pediatric pain. This paper offers several reasons why. The most compelling is that our perceptions and physiologic abilities to “mask” pain change with age, and so, in reality, adults may have difficulty relating to a child; also, a child may tolerate a significantly higher amount of pain before complaining. There is a particular relevance to the dentist from “I'm sure this kid is numb - they're just acting up” to “How can a 2-year old with 18 cavities not complain?” The truth is we don't understand pain communication in children that well. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Pain, Assessment

Print Tag: Refer to original journal article

Managing Pain in your Patients

Good Clinical Pain Practice for Pediatric Procedure Pain: Target Considerations.

Nutter DP:

CDA Journal 2009; 37 (10): 719-721

Changes in a child's tolerance of and response to pain may be associated with parenting styles.

Discussion: Dentists who treat children rely on “behavior guidance” or “management” to make therapies successful. Many existing therapies don't account for the potential that the child is in pain. Some of dentistry's current strategies (such as passive immobilization) essentially ignore the concept of pain in favor of “getting the work done.” Secondly, there is the assumption that providers can accurately distinguish pain behavior from unwanted behavior and “willful disobedience.” As parenting habits/styles change, it is reasonable to expect that a child's tolerance of, and response to, pain will also change. It is incumbent now upon the dentist to distinguish pain behavior from true “uncooperative” behavior. Dentists who function as authoritarians sometimes may have difficulty distinguishing pain from adverse behavior and tend to lean on the side of adverse behavior. While crying seems to be the most common response to “painful behavior” it may in fact be a coping mechanism that is really a child attempting to communicate. When pain is a possibility it should be measured to give the operator a scope of reference.

Reviewer's Comments: I thought this article was provocative; it brings up some interesting points on the fact that pain assessment is poorly done by health professionals of children (this is borne out elsewhere in the literature). We've all had the kid who “didn't seem to get numb” or cried “unreasonably,” in our opinion. The truth is that few providers have a methodical approach to reassess pain during treatment. I do think the author is a little tough on behavior management guidelines; there is a sensitivity to developmentally associated pain reactions. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Pain Assessment

Print Tag: Refer to original journal article

Using Intranasal Meds for Seizure Control

Intranasal Delivery of Antiepileptic Medications for Treatment of Seizures.

Wermeling DP:

Neurotherapeutics 2009; 6 (April): 352-358

Intranasal meds can come directly in contact with the brain through the olfactory nerve.

Background: Patients with epilepsy often require immediate and time-sensitive treatment following seizures. However, these patients often present a challenge in obtaining intravascular access. An alternative, rectal diazepam is also not popular with patients or caregivers. An attractive and pharmacodynamically advantageous route is possibly intranasal.

Objective: To consider nasal delivery of antiepileptic medications. **Discussion:** Intranasal sprays target the turbinates on the medial wall of the nasal cavity, which has a profound blood supply. Nasal spray typically consists of particles 10 μm in size and covers the inferior, middle, and sometimes superior turbinates, where they may directly come in contact with the olfactory nerve and into central circulation. Relative contraindications for nasal medications include midface trauma, polyposis, and vasomotor rhinitis that may alter absorption. In case of a patient with a seizure, increased nasal drainage may be noted and so suction of the nostril prior to intranasal administration may be required. For intranasal midazolam, time to max plasma concentration is 10 to 14 minutes with a maximum plasma concentration of 80 ng/mL. The pharmacokinetic profile is superior to intramuscular injection and approaches intravenous infusions.

Reviewer's Comments: I have been using intranasal midazolam for mild-moderate sedations with great effect. It is particularly attractive for the young child, where giving a large volume of oral liquid is challenging. The drawback is I then only give the one medication and lose the ability for combinations. This article actually is a wonderful review of the anatomy and concepts behind nasal administration of medications. The time will come soon when, rather than IM diazepam for seizures, the mode of delivery will be the more palatable, pleasant IN mode. (Reviewer-Bobby Thikkurissy, DDS).

Keywords: Benzodiazepines, Intranasal Medications, Epilepsy

Print Tag: Refer to original journal article