Effects of Papacarie on children with dental caries in primary teeth: a systematic review and meta-analysis. [Review]

BACKGROUND: Caries in primary teeth hinder the child to bite and chew and influence their development. Papacarie has the characteristics of selective removal of decayed tissue and can preserve healthy dentine to the maximum, but its efficiency has not been critically evaluated compared to conventional method.

AIM: This review is aiming at comparing the Papacarie and traditional method in caries removal in primary teeth of children.

DESIGN: Comprehensive literature searching at PubMed, Embase, Cochrane Central Register of Controlled Trials, and Web of Science to January 2018.

RESULTS: Six randomized controlled trials (RCTs) and four prospective controlled clinical trials (CCTs) were included. The microbiota in caries dentine was significantly reduced using the Papacarie treatment (MD = 0.57, 95% CI 0.04 to 1.09, P = 0.03), and the anxiety feeling declined more in the Papacarie group (MD = -1.01, 95% CI -1.72 to -0.30, P < 0.005). There was a greater 200.79 (MD = 200.79, 95%CI 152.50 to 249.09, P < 0.00001) increase in time taken for the Papacarie treatment compared with the conventional method.

CONCLUSION: Papacarie exerts a positive effect in reducing the bacteria and decreases the pain during caries removal in primary teeth although it costed a longer treatment time compared with the conventional method.

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Publication Type
Journal Article. Review.
Anaesthetic efficacy of articaine versus lidocaine in children's dentistry: a systematic review and meta-analysis. [Review]

BACKGROUND: Over the last few years, numerous reviews and studies have awarded articaine hydrochloride local anaesthetic (LA) a superior reputation, with outcomes of different studies demonstrating a general tendency for articaine hydrochloride to outperform lidocaine hydrochloride for dental treatment. Nevertheless, there seems to be no clear agreement on which LA solution is more efficacious in dental treatment for children. There is no previous publication systematically reviewing and summarising the current best evidence with respect to the success rates of LA solutions in children.

AIMS: To evaluate the available evidence on the efficacy of lidocaine and articaine, used in paediatric dentistry.

DESIGN: A systematic search was conducted on Cochrane CENTRAL Register of Controlled Trials, MEDLINE (OVID: 1950 to June 2017), Cumulative Index to Nursing and Allied Health Literature (CINAHL; EBSCOhost; 1982 to June 2017), EMBASE (OVID: 1980 to June 2017), SCI-EXPANDED (ISI Web of Knowledge; 1900 to June 2017), key journals, and previous review bibliographies through June 2017. Original research studies that compared articaine with lidocaine for dental treatment in children were included. Methodological quality assessment and assessment of risk of bias were carried out for each of the included studies.

RESULTS: Electronic searching identified 525 publications. Following the primary and secondary assessment process, six randomised controlled trials (RCT) were included in the final analysis. There was no difference between patient self-reported pain between articaine and lidocaine during treatment procedures (SMD = 0.06, P-value = 0.614), and no difference in the occurrence of adverse events between articaine and lidocaine injections following treatment in paediatric patients (RR = 1.10, P-value = 0.863). Yet, patients reported significantly less pain post-procedure following articaine injections (SMD = 0.37, P-value = 0.013). Substantial heterogeneity was noted in the reporting of outcomes among studies, with the overall quality of majority of studies being at high risk of bias.

CONCLUSIONS: There is low quality evidence suggesting that both articaine as infiltration and lidocaine IAD nerve blocks presented the same efficacy when used for routine dental treatments, with no difference between patient self-reported pain between articaine and lidocaine during treatment procedures. Yet, significantly less pain post-procedure was reported following articaine injections. There was no difference in the occurrence of adverse events between articaine and lidocaine injections following treatment in paediatric patients.
Does flavoured dentifrice increase fluoride intake compared with regular toothpaste in children? A systematic review and meta-analysis.

AIM: The aim of this systematic review and meta-analysis was to determine whether dentifrice flavour increases fluoride ingestion by children.

DESIGN: We included clinical trials on children that evaluated the use of flavoured dentifrice - FD vs regular dentifrice - RD to identify the fluoride intake. An electronic search was performed in PubMed, Web of Science, Scopus, The Cochrane Library, LILACS/BBO, and grey literature followed by manual search. The methodological quality of the studies was assessed using the Cochrane Collaboration common scheme for bias and ROBINS-I tool. Data were analysed in subgroups such as low (G1) and ordinary (G2) fluoride concentrations of dentifrices. We carried out heterogeneity and sensitive analyses.

RESULTS: For G1, the fluoride intake from RD was significantly higher than from FD [standardised mean difference = -2.57 (-3.26, -1.89), P < 0.00001]. For G2, the fluoride ingestion from RD was significantly higher than from FD [mean difference = -0.00 (-0.00, -0.00), P = 0.02].

CONCLUSIONS: There is evidence to support the null hypothesis that flavouring from dentifrice does not increase fluoride intake in young children.
Clinical, histomorphological and therapeutic features of the Van der Woude Syndrome: literature review and presentation of an unusual case.

Source

Abstract
BACKGROUND: Van der Woude syndrome (VWS), an autosomal dominant condition associated with lower lip pits and/or cleft palate, is caused by mutations in the interferon regulatory factor 6 gene (IRF6 gene). The genetic alterations identified to date that contribute to expression of the syndrome are chiefly mutations located on chromosome 1 (the largest of our chromosomes), mutations at p36 that modifies the gene GRHL (grainy-head transcription factor) and mutations involving IRF6 (interferon regulatory factor). With frequency ranging from 1:35,000 to 1:100,000, depending on ethnicity, gender, and socio-economic status, the syndrome accounts for about 2% of orofacial clefts. The clinical and histomorphological aspects of VWS are studied, and a case of heterozygous female twins of whom only one was affected with VWS is reported.

CONCLUSION: This very rare case (no similar case has been reported to date) contributes further evidence on modifying factors in the expression of this condition.

Publication Type
Journal Article.
Year of Publication
2018

Unique Identifier
29482676

Title

Source
Pediatric Dentistry. 40(1):12-17, 2018 Jan 01.

Abstract
PURPOSE: The purpose of this systematic review was to verify whether child and adolescent oral health affected academic performance.

METHODS: A literature search conducted in March 2017 on PubMed, Lilacs, Web of Science, and Scopus databases identified 2,009 papers, six of which were included in the final review. Quality appraisal and risk of bias were evaluated using the quality assessment tool for observational cohort and cross-sectional studies.

RESULTS: Two papers were classified as being of good quality, one as fair, and three as poor. In four publications, oral health conditions were measured by taking only dental caries into account, while in two others treatment needs and dental trauma were also considered. Although four papers concluded that children's academic performance and poor oral health were associated, the results were not considered reliable because of the high risk of bias. The two papers classified as being of good quality did not show an association between oral health and academic performance, unless mediated by socioeconomic factors.

CONCLUSION: Further well-designed studies are required to demonstrate whether children's oral health can have a negative influence on their academic performance.
BACKGROUND: Several restorative materials with specific indications are used for filling cavities in primary teeth.

AIM: To systematically review the literature in order to investigate the longevity of primary teeth restorations and the reasons for failure.

DESIGN: Electronic databases were screened, and eligible studies were hand-searched to find longitudinal clinical studies evaluating the survival of restorations (class I, class II, and crown) placed with different materials in primary teeth with at least one year of follow-up.

RESULTS: Thirty-one studies were included, and a high bias risk was observed. Overall, 12,047 restorations were evaluated with 12.5% of failure rate. A high variation on annual failure rate (AFR) was detected (0-29.9%). Composite resin showed the lowest AFRs (1.7-12.9%). Stainless steel crowns (SSC) had the highest success rate (96.1%). Class I restorations and restorations placed using rubber dam presented better AFR. The main reason for failure observed was secondary caries (36.5%).

CONCLUSIONS: An elevated number of failures were observed due to recurrent caries, highlighting the need for professionals to work with a health-promoting approach. The high variation on failure rate among the materials can be due to children's behavior during the procedure, which demands short dental appointments and a controlled environment.

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Publication Type
Journal Article. Review.
Year of Publication
2018
A systematic review of the effects of supervised toothbrushing on caries incidence in children and adolescents. [Review]

Source

Abstract
BACKGROUND: The anticaries effect of supervised toothbrushing, irrespective of the effect of fluoride toothpaste, has not been clearly determined yet.

AIM: To assess the effects of supervised toothbrushing on caries incidence in children and adolescents.

DESIGN: A systematic review of controlled trials was performed (CRD42014013879). Electronic and hand searches retrieved 2046 records, 112 of which were read in full and independently assessed by two reviewers, who collected data regarding characteristics of participants, interventions, outcomes, length of follow-up and risk of bias.

RESULTS: Four trials were included and none of them had low risk of bias. They were all carried out in schools, but there was great variation regarding children's age, fluoride content of the toothpaste, baseline caries levels and the way caries incidence was reported. Among the four trials, two found statistically significant differences favouring supervised toothbrushing, but information about the magnitude and/or the precision of the effect estimate was lacking and in one trial clustering effect was not taken into consideration. No meta-analysis was performed due to the clinical heterogeneity among the included studies and differences in the reporting of data.

CONCLUSIONS: There is no conclusive evidence regarding the effectiveness of supervised toothbrushing on caries incidence.
shunt infections and dental procedures, decode the existing controversies and provide updated information on antibiotic prophylaxis prior dental treatment for hydrocephalic patients.

**Publication Type**
Journal Article. Review.

**Year of Publication**
2018

**Abstract**
Dental caries is the single most common chronic disease of childhood in the United States. Access to dental care is one of the barriers to improved oral health for children. Primary care providers who routinely treat children have an established role in prevention and early identification of health problems; thus, they are ideal front-line providers who can detect oral health discrepancies and begin the process of care and prevention.

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**Title**
Open Up and Let Us In: An Interprofessional Approach to Oral Health. [Review]

**Source**

**BACKGROUND:** Dental trauma and deep caries are frequent findings in children and adolescents that may lead to pulp necrosis in young permanent teeth. As a consequence, the root stops its development, and managing these immature teeth becomes challenging due to the presence of open apexes and fragile dentinal walls.

**AIM:** We aimed to carry out a systematic review including a meta-analysis to compare the endodontic treatments available in the management of immature necrotic permanent teeth and determine which one provides the best clinical and radiographic outcomes.
DESIGN: The literature was screened via PubMed/MEDLINE, the Cochrane Central Register of Controlled Trials (CENTRAL), and ClinicalTrials databases until August 2015 to select randomized clinical trials that compared at least two different treatments regarding immature necrotic permanent teeth comprising clinical and radiographic success as outcome. Two reviewers independently performed the screening and evaluation of the articles. A total of 648 studies were retrieved from the databases, in which 14 were selected to full-text analysis by the appliance of inclusion criteria. After the exclusion criteria, the remaining seven studies had their data extracted and assessed for bias risk. Pooled-effect estimates were obtained comparing clinical and radiographic success rates among MTA Versus other treatments.

RESULTS: Evaluation of clinical (Z = 2.32, P = 0.02, OR = 5.37, 95% CI: 1.29-22.23, I = 0%) and radiographic (Z = 2.45, P = 0.01, OR = 4.31, 95% CI: 1.34-13.82, I = 0%) outcomes favored the MTA (control group) when compared to other endodontic treatments (P < 0.05). No evidence of heterogeneity was detected among the studies (I < 50%), whereas a moderate risk of bias was identified in five of them.

CONCLUSIONS: Although almost all of the identified studies presented moderate risk of bias, MTA apexification seems to produce overall better clinical and radiographic success rates among the endodontic treatment available in immature necrotic permanent teeth.

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Publication Type
Journal Article. Review.
Year of Publication
2017

Abstract

PURPOSE: This manuscript presents evidence-based guidance on the use of vital pulp therapies for treatment of deep caries lesions in children. A guideline panel convened by the American Academy of Pediatric Dentistry formulated evidence-based recommendations on three vital pulp therapies: indirect pulp treatment (IPT; also known as indirect pulp cap), direct pulp cap (DPC), and pulpotomy.

METHODS: The basis of the guideline's recommendations was evidence from "Primary Tooth Vital Pulp Therapy: A Systematic Review and Meta-Analysis." (Pediat Dent 2017;15;39[1]:16-23.) A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and trial databases to identify randomized controlled trials and systematic reviews addressing peripheral issues of vital pulp therapies such as patient preferences of treatment and impact of cost. Quality of the evidence was assessed through the Grading of Recommendations Assessment, Development, and Evaluation approach; the evidence-to-decision framework was used to formulate a recommendation.

RESULTS: The panel was unable to make a recommendation on superiority of any particular type of vital pulp therapy owing to lack of studies directly comparing these interventions. The panel recommends use of mineral trioxide aggregate (MTA) and formocresol in pulpotomy treatments; these are recommendations based on moderate-quality evidence at 24 months. The panel
BACKGROUND: This article presents evidence-based clinical recommendations for the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars in children and adolescents. A guideline panel convened by the American Dental Association (ADA) Council on Scientific Affairs and the American Academy of Pediatric Dentistry conducted a systematic review and formulated recommendations to address clinical questions in relation to the efficacy, retention, and potential side effects of sealants to prevent dental caries; their efficacy compared with fluoride varnishes; and a head-to-head comparison of the different types of sealant material used to prevent caries on pits-and-fissures of occlusal surfaces.

TYPES OF STUDIES REVIEWED: This is an update of the ADA 2008 recommendations on the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars. The authors conducted a systematic search in MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and other sources to identify randomized controlled trials reporting on the effect of sealants (available on the U.S. market) when applied to the occlusal surfaces of primary and permanent molars. The authors used the Grading of Recommendations Assessment, Development, and Evaluation approach to assess the quality of the evidence and to move from the evidence to the decisions.

RESULTS: The guideline panel formulated 3 main recommendations. They concluded that sealants are effective in preventing and arresting pit-and-fissure occlusal carious lesions of primary and permanent molars in children and adolescents compared with the nonuse of sealants or use of fluoride varnishes. They also concluded that sealants could minimize the progression of non-cavitated occlusal carious lesions (also referred to as initial lesions) that receive a sealant. Finally, based on the available limited evidence, the panel was unable to provide specific recommendations on the relative merits of 1 type of sealant material over the others. Conclusions and practical implications: These recommendations are designed to inform practitioners during the clinical decision-making process in relation to the prevention of occlusal carious lesions in children and adolescents. Clinicians are encouraged to discuss the information in this guideline with patients or the parents of patients. The authors recommend that clinicians re-orient their efforts toward increasing the use of sealants on the occlusal surfaces of primary and permanent molars in children and adolescents.
BACKGROUND: This manuscript presents evidence-based guidance on the use of 38 percent silver diamine fluoride (SDF) for dental caries management in children and adolescents, including those with special health care needs. A guideline workgroup formed by the American Academy of Pediatric Dentistry developed guidance and an evidence-based recommendation regarding the application of 38 percent SDF to arrest cavitated caries lesions in primary teeth.

TYPES OF STUDIES REVIEWED: The basis of the guideline's recommendation is evidence from an existing systematic review "Clinical trials of silver diamine fluoride in arresting caries among children: A systematic review." (JDR Clin Transl Res 2016;1[3]:201-10). A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and gray literature databases to identify randomized controlled trials and systematic reviews reporting on the effect of silver diamine fluoride and address peripheral issues such as adverse effects and cost. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach was used to assess the quality of the evidence and the evidence-to-decision framework was employed to formulate a recommendation.

RESULTS: The panel made a conditional recommendation regarding the use of 38 percent SDF for the arrest of cavitated caries lesions in primary teeth as part of a comprehensive caries management program. After taking into consideration the low cost of the treatment and the disease burden of caries, panel members were confident that the benefits of SDF application in the target populations outweigh its possible undesirable effects. Per GRADE, this is a conditional recommendation based on low-quality evidence. Conclusions and practical implications: The guideline intends to inform the clinical practices involving the application of 38 percent SDF to enhance dental caries management outcomes in children and adolescents, including those with special health care needs. These recommended practices are based upon the best available evidence to-date. A 38 percent SDF protocol is included in Appendix II.

Abstract
The objective of this review was to consider compilation of evidence from literature and its interpretation. Evidence-based dentistry during its implementation has sometimes emphasized randomized clinical trials with exclusion of all other evidence. Systematic reviews must compile evidence from all study types, with the collected evidence processed through the Grading of Recommendations Assessment, Development and Evaluation system prior to their application in clinical decision-making. Evidence-based clinical practice should be based upon transparently reported evidence from all study types.
PURPOSE: This manuscript presents evidence-based guidance on the use of vital pulp therapies for treatment of deep caries lesions in children. A guideline panel convened by the American Academy of Pediatric Dentistry formulated evidence-based recommendations on three vital pulp therapies: indirect pulp treatment (IPT; also known as indirect pulp cap), direct pulp cap (DPC), and pulpotomy.

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RESULTS: The panel was unable to make a recommendation on superiority of any particular type of vital pulp therapy owing to lack of studies directly comparing these interventions. The panel recommends use of mineral trioxide aggregate (MTA) and formocresol in pulpotomy treatments; these are recommendations based on moderate-quality evidence at 24 months. The panel made weak recommendations regarding choice of medicament in both IPT (moderate-quality evidence [24 months], low quality evidence [48 months]) and DPC (very-low quality evidence [24 months]). Success of both treatments was independent of type of medicament used. The panel also recommends use of ferric sulfate (low-quality evidence), lasers (low-quality evidence), sodium hypochlorite (very-low-quality evidence), and tricalcium silicate (very-low quality evidence) in pulpotomies; these are weak recommendations based on low-quality evidence. The panel recommended against the use of calcium hydroxide as pulpotomy medicament in primary teeth with deep caries lesions. Conclusions and practical implications: The guideline intends to inform the clinical practices with evidence-based recommendations on vital pulp therapies in primary teeth with deep caries lesions. These recommendations are based upon the best available evidence to-date.

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Title
Use of Vital Pulp Therapies in Primary Teeth with Deep Caries Lesions.

Source

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### Title
Use of Silver Diamine Fluoride for Dental Caries Management in Children and Adolescents, Including Those with Special Health Care Needs.

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### Abstract
**BACKGROUND:** This manuscript presents evidence-based guidance on the use of 38 percent silver diamine fluoride (SDF) for dental caries management in children and adolescents, including those with special health care needs. A guideline workgroup formed by the American Academy of Pediatric Dentistry developed guidance and an evidence-based recommendation regarding the application of 38 percent SDF to arrest cavitated caries lesions in primary teeth.

**TYPES OF STUDIES REVIEWED:** The basis of the guideline’s recommendation is evidence from an existing systematic review “Clinical trials of silver diamine fluoride in arresting caries among children: A systematic review.” (JDR Clin Transl Res 2016;1[3]:201-10). A systematic search was conducted in PubMed/MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and gray literature databases to identify randomized controlled trials and systematic reviews reporting on the effect of silver diamine fluoride and address peripheral issues such as adverse effects and cost. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach was used to assess the quality of the evidence and the evidence-to-decision framework was employed to formulate a recommendation.

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Conclusions and practical implications: The guideline intends to inform the clinical practices involving the application of 38 percent SDF to enhance dental caries management outcomes in children and adolescents, including those with special health care needs. These recommended practices are based upon the best available evidence to-date. A 38 percent SDF protocol is included in Appendix II.

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**Title:** Dental fear/anxiety among children and adolescents. A systematic review.

**Source:** European Journal of Paediatric Dentistry. 18(2):121-130, 2017 Jun.

**Local Messages**

**AIM:** The aim of this paper was to review the published scientific literature to quantify the prevalence and mean score of dental fear/anxiety (DFA) in children/adolescents and its variation according to several variables.

**MATERIALS AND METHODS:** Cross-sectional and cohort studies published from 2000 to 2014, that measured DFA in children/adolescents (aged 0-19 years), in the general population, or visiting private or public dental services (general or pediatric) or attending school and kindergarten, were searched, with specific terms, in 3 electronic databases (Medline, Embase, Web Of Science). Primary data, collected with specific questionnaires of demonstrated reliability and/or validity, were extracted.

**RESULTS:** After screening 743 abstracts and evaluating 164 full-text publications, 36 articles were selected. Dental fear/anxiety prevalence rates were 12.2%, 10.0%, 12.2%, 11.0% and 20.0% for the CFSS-DS, DAS, MDAS, DFS, and DFSS-SF scores, respectively. In the studies that used MCDAS Dental fear/prevalence rates varied from 13.3% to 29.3%. In the studies that used
CFSS-DS ratings, the prevalence and the mean score of dental fear/anxiety was lower in Northern Europe than the remaining countries, the prevalence decreased with increasing age and the frequency was higher in females than males.

CONCLUSIONS: Dental fear/anxiety is a common problem in children/adolescents worldwide, therefore, new strategies to overcome this relevant children/adolescent condition should be encouraged.

Recurrent Reviews Related to Paediatric Dentistry

Aim: To conduct a systematic review and meta-analysis to verify the prevalence of dental caries and periodontal disease in individuals with ASD, especially children and young adults.

Design: Searches were conducted through MEDLINE/PubMed, Web of Science, and Scopus databases in December 2015. Studies were included if fulfilled the following eligibility criteria: to evaluate the oral health status of individuals with ASD; to be an observational study; and to assess the prevalence of dental caries and/or periodontal disease. Meta-analyses were conducted considering prevalence of dental caries and periodontal disease in individuals as outcome.

Results: Search strategy identified 928 potentially relevant articles and seven of them were included in this review. All included studies reported dental caries prevalence, and the pooled prevalence was 60.6\% (95\% CI: 44.0-75.1). Moreover, only three studies showed prevalence of periodontal disease, resulting in pooled prevalence of 69.4\% (95\% CI: 47.6-85.0).

Conclusion: Prevalence of dental caries and periodontal disease in children and young adults with ASD can be considered as high, pointing to the need for oral health policies focused on these individuals.
ART is an alternative for restoring occlusoproximal cavities in primary teeth - evidence from an updated systematic review and meta-analysis.

AIM: To update the existing systematic review and address questions regarding survival rate of ART restorations compared to the conventional approach in occlusoproximal cavities in primary molars.

DESIGN: The search was extended beyond the original search through the PubMed/MEDLINE database up to February 2016. Furthermore, Web of Science and EMBASE were searched. The inclusion criteria were subjects related to the scope of the systematic review. After selection by title and abstract, potentially eligible articles were read in full and included in accordance with exclusion criteria. Meta-analysis was carried out with the outcome being the survival rate of restorations.

RESULTS: The search strategy identified 560 potentially relevant studies, in addition to 127 from the original systematic review. A total of four articles were included in the qualitative and quantitative analyses. Meta-analysis showed no statistically significant difference between ART and conventional approaches in survival rate of occlusoproximal cavities (OR = 0.887, 95% CI: 0.574-1.371).

CONCLUSION: ART restorations have similar survival rate compared to conventional treatment and can be considered an option to restore occlusoproximal cavities in primary molars.
BACKGROUND AND AIM: It is widely acknowledged that children should participate in healthcare decisions, service
development and even setting research agendas. Dental traumatology is a major component of paediatric dentistry practice and
research. However, little is known about young patients’ contribution to new knowledge in this field. The aim of the study was to
establish the extent to which children are involved in contemporary dental trauma research and to evaluate the quality of the
related literature.

MATERIAL AND METHODS: A systematic review of the dental trauma literature was conducted from 2006 to 2014. The
electronic databases, MEDLINE and Scopus, were used to identify relevant studies. The selected papers were independently
examined by five calibrated reviewers. Studies were categorized by the degree of children's involvement and appraised using a
validated quality assessment tool.

RESULTS: The initial search yielded 4374 papers. After application of the inclusion and exclusion criteria, only 96 studies
remained. Research on children accounted for 87.5% of papers, and a proxy was involved in 4.2%. Children were engaged to
some degree in only 8.3% of studies, and there were no studies where children were active research participants. In the quality
assessment exercise, papers scored, on average, 57% (range = 14-86%).

CONCLUSION: There is scope to encourage more active participation of children in dental trauma research in the future.
Furthermore, there are some areas where the quality of research could be improved overall.

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Aim: The objective was to evaluate the clinical effectiveness of all types of APC for restoring primary teeth compared with
conventional filling materials or other types of crowns.

DESIGN: Relevant articles were searched in electronic databases of PubMed via MEDLINE and the Cochrane central register of
controlled trials. Two review authors independently assessed the risk of bias in the included articles and extracted data.

RESULTS: From 555 potentially eligible articles, seven relevant articles were included. The overall risk of bias was high for all
the studies. SCCs cannot be replaced by APC, such as the open-faced SCCs and the pre-veneered SCCs, for restoring badly
decayed primary molars. Zircon crowns were assessed only in primary incisors and compared with pre-veneered SCCs and resin
composite strip crowns. After a follow-up of only 6 months, Zircon crowns gave significantly better results than the others with
regard to gingival health and crown fractures.
CONCLUSION: Due to the small number of RCTs on this topic and their risk of bias, future RCTs should be carried out in primary teeth.

BACKGROUND: Dental caries has significant impact on children and their families and may necessitate treatment under general anaesthesia (GA). The use of oral health-related quality-of-life (OHRQoL) measures enables evaluation of dental treatment from a patient's perspective.

OBJECTIVE: This systematic review aimed to assess change in OHRQoL in children following treatment under GA for the management of dental caries: a systematic review. [Review]

METHODS: A comprehensive search was conducted to identify articles which were assessed against inclusion criteria before data extraction. Studies involving children under 16 years, having treatment for dental caries under GA, were considered eligible. Included studies were quality assessed.

RESULTS: Twenty studies were included, which demonstrated significant heterogeneity. Most studies employed a pre-test-post-test design. All but one study relied on proxy reports of OHRQoL. Only half the studies used instruments validated in the study population. Whereas all studies reported improved OHRQoL overall, some subscales showed changes which were not significant or worsened OHRQoL. The scientific quality of the studies varied considerably.

CONCLUSION: Heterogeneity of included papers limited the conclusions which could be drawn. Treatment under GA appears to result in overall improvements in proxy-reported OHRQoL; however, there is a need for further high-quality studies employing validated, child-reported measures of OHRQoL.
ABSTRACT

The oral health of children and adolescents mirrors their general health. Because oral health care is often delivered in isolation from general health care, oral signs and symptoms do not always alert practitioners to their significance beyond the mouth. An important example of this is the association of a higher risk of dental caries and periodontal disease in children and adolescents with overweight, obesity and prediabetic conditions. Oral-health practitioners need to consider the health conditions that their patients may have. This will aid in diagnosis and alert the practitioner to oral conditions that may not resolve without general health-care intervention also. This paper reviews the more common oral conditions involving periodontal health in children and adolescents, and discusses the diagnosis of these conditions, potential associated health problems and the roles of pediatric dentistry and periodontology in the management of these conditions with the goal of children entering adulthood with healthy dentitions.

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Title
Effectiveness of Xylitol in Reducing Dental Caries in Children. [Review]

Source

Unique Identifier
28937891
need for more sound well pharmacological substances and biology of inhibition of OTM in humans after 90 days of observation when a 860 nm continuous wave GaAlA slow humans after 42 days. In the second group, no statistically significant differences were re

inhibition of OTM in humans after 32 days, while the drug tenoxicam, injected locally, inhibited the rate of OTM by up to 10%

In the first group, human Relaxin was compared to a placebo and administered orally. It was

data collection and analysis were performed following the Cochrane recommendations. Data collection and analysis were performed following the Cochrane recommendations.

RESULTS: From the initial electronic search, 3726 articles were retrieved and 5 studies were finally included. Two types of biology-based techniques used to reduce the rate of OTM in humans were described: pharmacological and low-level laser therapy. In the first group, human Relaxin was compared to a placebo and administered orally. It was described as having no effect on the inhibition of OTM in humans after 32 days, while the drug tenoxicam, injected locally, inhibited the rate of OTM by up to 10% in humans after 42 days. In the second group, no statistically significant differences were reported, compared to placebo, for the rate of inhibition of OTM in humans after 90 days of observation when a 860 nm continuous wave GaAlA slow-level laser was used.

CONCLUSIONS: The currently available data do not allow us to draw definitive conclusions about the use of various pharmacological substances and biology-based therapies in humans able to inhibit or decrease the OTM rate. There is an urgent need for more sound well-designed randomized clinical trials in the field.
Recent Reviews Related to Paediatric Dentistry

**Publication Type**
Journal Article. Review.

**Year of Publication**
2017

**Unique Identifier**
28292337

**Status**
MEDLINE

**Authors**
Coll, James A; Seale, N Sue; Vargas, Kaaren; Marghalani, Abdullah A; Al Shamali, Shahad; Graham, Laurel.

**Title**
Primary Tooth Vital Pulp Therapy: A Systematic Review and Meta-analysis. [Review]

**Source**

**Abstract**
PURPOSE: This systematic review and meta-analysis assessed outcomes in primary teeth for the vital pulp therapy (VPT) options of indirect pulp therapy (IPT), direct pulp capping (DPC), and pulpotomy after a minimum of 12 months to determine whether one VPT was superior.

METHODS: The following databases were searched from 1960 to September 2016: MEDLINE, EMBASE, CENTRAL, EBSCO, ICTR, Dissertation abstracts, and grey literature for parallel and split-mouth randomized controlled trials of at least 12 months duration comparing the success of IPT, DPC, and pulpotomy in children with deep caries in primary teeth. Our primary outcome measure was overall success (combined clinical and radiographic). Three authors determined the included RCTs, performed data extraction, and assessed the risk of bias (ROB). Meta-analysis and assignment of quality of evidence by Grading of Recommendations Assessment, Development and Evaluation approach were done.

RESULTS: Forty-one articles qualified for meta-analysis (six IPT, four DPC, and 31 pulpotomy) from 322 screened articles. The 24-month success rates were: IPT=94.4 percent, and the liner material (calcium hydroxide [CH]/bonding agents) had no effect on success (P=0.88), based on a moderate quality of evidence; DP =88.8 percent, and the capping agent (CH/alternate agent) did not affect success (P=0.56), based on a low quality of evidence. The combined success rate for all pulpotomies was 82.6 percent based on 1,022 teeth. Mineral trioxide aggregate (MTA) (89.6 percent) and formocresol (FC) (85.0 percent) success rates were the highest of all pulpotomy types and were not significantly different (P=0.15), with a high quality of evidence. MTA’s success rate (92.2 percent) was higher than ferric sulfate (FS) (79.3 percent) and approached significance (P=0.05), while FS’s success rate (84.8 percent) was not significantly different from FC (87.1 percent), both with a moderate quality of evidence. MTA and FC success rates were significantly better than CH (P=0.0001), with a moderate quality of evidence. At 18 months, sodium hypochlorite (NaOCl) success rate was significantly less than FC (P=0.01) with a low quality of evidence.

CONCLUSIONS: The highest level of success and quality of evidence supported IPT and the pulpotomy techniques of MTA and FC for the treatment of deep caries in primary teeth after 24 months. DPC showed similar success rates to IPT and MTA or FC pulpotomy, but the quality of the evidence was lower. Systematic Review Registration Number: PROSPERO 2015: CRD42015006942.
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Title  
Stevens-Johnson Syndrome: A Review and Report of Two Cases. [Review]

Source  

Abstract  
Stevens-Johnson syndrome (SJS) is a rare condition, characterized by its dramatic involvement of the skin and various mucosal surfaces including the oral mucosae, that severely impairs the affected patient’s ability to speak, chew, or swallow. The purpose of this report was to present two cases with significant variations in the clinical presentation of Stevens-Johnson syndrome. In both situations, the patients' conditions were not immediately recognized. Pediatric dentists should be aware of these variations in the clinical manifestations of SJS, as the signs and symptoms can initially mimic common viral conditions. Appropriate diagnosis can result in timely referral to a hospital environment, optimizing patient management and recovery.

Publication Type  
Case Reports. Journal Article. Review.

Year of Publication  
2017

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Title  
Pediatric Dentistese. [Review]

Source  

Abstract  
Successful practice of pediatric dentistry depends on the establishment of a good relationship between the dentist and the child. Such a relationship is possible only through effective communication. Pediatric dentistry includes both an art and a science component. The focus has been mostly on the technical aspects of our science, and the soft skills we need to develop are often forgotten or neglected. This paper throws light on the communication skills we need to imbibe to be a successful pediatric dentist. A new terminology “Pediatric Dentistese” has been coined similar to motherese, parentese, or baby talk. Since baby talk cannot be applied to all age groups of children, pediatric dentistese has been defined as “the proactive development-based individualized communication between the pediatric dentist and the child which helps to build trust, allay fear, and treat the child effectively and efficiently.”

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Journal Article. Review.

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Torriani, Dione Dias. Postgraduate Program in Dentistry, Federal University of Pelotas, Pelotas, Brazil.
Nonpharmacologic Intervention on the Prevention of Pain and Anxiety During Pediatric Dental Care: A Systematic Review.

BACKGROUND: Nonpharmacologic interventions may be used to reduce fear and anxiety during dental treatment.

OBJECTIVES: To systematically review trials on the effect of nonpharmacologic interventions in behavior, anxiety, and pain perception in children undergoing dental treatment.

DATA SOURCES: Medline, Scopus, Web of Science and CINAHL, Google Scholar, and studies’ reference lists.

PARTICIPANTS AND INTERVENTIONS: Studies performed with children and adolescents that evaluated the effect of interventions on children's behavior, anxiety, and pain perception during dental treatment were included.

STUDY APPRAISAL METHODS: Independent quality assessment of the studies was carried out following the classification categories present on the Cochrane Handbook for Development of Systematic Reviews of Intervention.

RESULTS: Twenty-two articles, reporting 21 studies, were selected. Most studies tested distraction techniques. Eight studies presented bias and results were not considered. The remaining 13 studies had control groups with inactive controls, and 4 also included a variation of the intervention. Of the 4 studies assessing behavior, 3 found difference between intervention and control. Anxiety was evaluated by 10 studies: 4 found differences between intervention and control and 2 found differences between interventions. Five studies investigated pain perception: 3 found difference comparing active versus inactive interventions. In 1 of the 3, variations in the intervention decreased pain perception.

CONCLUSIONS: More research is needed to know whether the techniques are effective for improving behavior and reducing children's pain and distress during dental treatment. However, the majority of the techniques improved child's behavior, anxiety, and pain perception.
implementation at clinical practice sites, with kappa statistic values in the “almost perfect” agreement range of 0.80-0.99 for all but 1 measure component, which demonstrated “substantial” agreement. The 2 validated measures were published in the United States Health Information Knowledgebase.

Conclusion: The stakeholder-engaged processes used in this study facilitated a successful measure development and testing cycle. Engaging stakeholders early and throughout development and testing promotes early identification of and attention to potential threats to feasibility, reliability, and validity, thereby averting significant resource investments that are unlikely to be fruitful.

Abstract
Systematic reviews and meta-analysis seek to answer a pre-framed research question to lead to a valid answer through a systematic, explicit and reproducible method of locating; identifying, including and appraising appropriate trials. The results are synthesized considering the methodological rigor of included trials. While the meta-analysis quantitatively pools the results from individual included studies, the systematic review summarizes the findings as qualitative conclusions. These reviews are crux of evidence based dentistry for various stake-holders, i.e., clinicians, researchers and policy-makers. Although the meticulous methodology of systematic review and meta-analysis minimizes the elements of bias, yet the validity and reliability of their findings should be explored prior to translating their conclusions to practice. The goal of this paper is to familiarize readers with rationale, conduct and appraisal of systematic review and meta-analysis. Further, guidance is provided on tracing potential elements of bias in the review to enable readers to judge the quality of evidence generated from the review.

Abstract
Paediatric laser dentistry. Part 1: General introduction. [Review]
therapies in different branches of dentistry including preventive and restorative dentistry, traumatic injury treatments and surgical procedures. Laser has also biostimulating and anti-inflammatory effects, as well as analgesic effect.

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Journal Article. Review.
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Title
Split-mouth design in Paediatric Dentistry clinical trials. [Review]
Source
Local Messages
ISSUES HELD AT THE BDA LIBRARY FROM 2002 ONWARDS, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO: https://www.bda.org/library/journals-articles/Documents/photocopy-request-form.pdf
Abstract
AIM: The aim of this article was to describe the essential concepts of the split-mouth design, its underlying assumptions, advantages, limitations, statistical considerations, and possible applications in Paediatric Dentistry clinical investigation.

DISCUSSION: In Paediatric Dentistry clinical investigation, and as part of randomised controlled trials, the split-mouth design is commonly used. The design is characterised by subdividing the child’s dentition into halves (right and left), where two different treatment modalities are assigned to one side randomly, in order to allow further outcome evaluation. Each participant acts as their own control by making within-patient rather than between-patient comparisons, thus diminishing inter-subject variability and increasing study accuracy and power. However, the main problem with this design comprises the potential contamination of the treatment effect from one side to the other, or the "carry-across effect"; likewise, this design is not indicated when the oral disease to be treated is not symmetrically distributed (e.g. severity) in the mouth of children. Thus, in spite of its advantages, the split-mouth design can only be applied in a limited number of strictly selected cases.

CONCLUSION: In order to obtain valid and reliable data from split mouth design studies, it is necessary to evaluate the risk of carry-across effect as well as to carefully analyse and select adequate inclusion criteria, sample-size calculation and method of statistical analysis.
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Title
Microleakage of Sealants after Phosphoric Acid, Er:YAG Laser and Air Abrasion Enamel Conditioning: Systematic Review and Meta-Analysis. [Review]
Source
Local Messages
THIS JOURNAL IS AVAILABLE IN THE BDA LIBRARY, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO: https://www.bda.org/library/journals-articles/Documents/photocopy-request-form.pdf
Abstract
PURPOSE: The aim of this systematic review and meta-analysis is to answer the focused question: Does the application of phosphoric acid, Er:YAG laser and air abrasion enamel conditioning methods previous to the occlusal sealant application in human permanent molars influence the microleakage?
STUDY DESIGN: A literature research was carried out in the Pubmed Medline, Web of Science, Scopus and Cochrane databases using with the MeSH terms and keyword search strategy. A supplemental hand search of the references of retrieved articles was also performed. Inclusion criteria comprised ex vivo studies (extracted teeth) with permanent human teeth that used chemical (phosphoric acid) or mechanical (Er:YAG laser and air abrasion) conditioning methods previous the sealant application. The studies should evaluate microleakage as an outcome. Meta-analysis pooled plot were obtained comparing the microleakage after pre-treatment with phosphoric acid, Er:YAG and air abrasion enamel conditioning for sealant application using RevMan software.

RESULTS: The search resulted in 164 articles, 55 records were excluded because they were duplicated. The analysis of titles and abstracts resulted in the exclusion of 105 studies. Four studies were included in the systematic review and the meta-analysis. According to the risk of bias evaluation, the four studies were considered low risk of bias. The meta-analysis showed that phosphoric acid had lower microleakage than Er:YAG laser ($p < 0.001$) and air abrasion ($p < 0.001$), with heterogeneity of $I^2 = 0\%$ and $I^2 = 71\%$, respectively. It was not found statistical difference when compared phosphoric acid and phosphoric acid combined with Er:YAG laser and air abrasion ($p > 0.05$).

CONCLUSION: The evidence supports that the pretreatment with phosphoric acid leads lower microleakage in oclusal sealants than Er:YAG laser and air abrasion.

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Title
Fundamentals in Biostatistics for Investigation in Pediatric Dentistry: Part II -Biostatistical Methods.

Source

Abstract
The main purpose of the second part of this series was to provide the reader with some basic aspects of the most common biostatistical methods employed in health sciences, in order to better understand the validity, significance and reliability of the results from any article on Pediatric Dentistry. Currently, as mentioned in the first paper, Pediatric Dentists need basic biostatistical knowledge to be able to apply it when critically appraise a dental article during the Evidence-based Dentistry (EBD) process, or when participating in the development of a clinical study with dental pediatric patients. The EBD process provides a systematic approach of collecting, review and analyze current and relevant published evidence about oral health care in order to answer a particular clinical question; then this evidence should be applied in everyday practice. This second report describes the most commonly used statistical methods for analyzing and interpret collected data, and the methodological criteria to be considered when choosing the most appropriate tests for a specific study. These are available to Pediatric Dentistry practicants interested in reading or designing original clinical or epidemiological studies.
Edelstein, Burton L. Dr. Rubin is Assistant Clinical Professor of Behavioral Sciences in Dental Medicine, College of Dental Medicine, Columbia University Medical Center; Dr. Millery is President, M Research Studio, LLC; and Dr. Edelstein is Professor of Dental Medicine and Health Policy and Management, Medical Center and Chair, Section of Population Oral Health, College of Dental Medicine, Columbia University.

Title
Faculty Development for Metro New York City Postdoctoral Dental Program Directors: Delphi Assessment and Program Response.

Source

Abstract
Faculty development for dental academicians is essential to cultivate a continuous faculty workforce, retain existing faculty members, enhance their teaching skill sets, and remain responsive to changing program requirements and curricular reforms. To maximize the utility of dental faculty development, it is important to systematically assess and address faculty members’ perceived training needs. The aims of this study were to determine priority topics among one group of postdoctoral program directors and to translate those topics into faculty development programs as part of Columbia University’s Health Resources and Services Administration (HRSA)-sponsored faculty training program for primary care educators. The study was conducted in 2013-16. A Delphi consensus technique was implemented with three sequential surveys of 26 New York City metropolitan area general, pediatric, and public health dentistry residency program directors. On the first survey, the five respondents (19% response rate) identified 31 topics. On the second survey, 17 respondents (response rate 65%) rated the 15 most important topics. In the third and final round, 19 respondents (73% response rate) ranked teaching research methods and teaching literature reviews as the topics of greatest interest. Overall, the responses highlighted needs for faculty development on teaching research methods, motivating trainees, trainee evaluation, and clinical care assessment. Based on these results, a series of six Faculty Forums was developed and implemented for dental educators in the metropolitan area, starting with the topic of teaching research methods. The process flow used for assessing training needs and developing and evaluating training can be applied to a variety of populations of educators.

Publication Type
Journal Article.

Year of Publication
2017
The Editor recommends this issue's article to the reader: Adhesive systems for restoring primary teeth: a systematic review and meta-analysis of in vitro studies.

**Source**

**Abstract**
BACKGROUND: Studies have suggested that in the presence of approximal cavities, the approximal surface in contact with this one shows a higher risk in the development of caries lesions.

AIM: To evaluate the ability of dental materials to prevent and to arrest caries lesion in approximal surfaces in contact with glass ionomer cement restorations - A systematic review and meta-analysis.

DESIGN: Two independent reviewers performed a literature search in PubMed through November 2014. The inclusion criteria were: (1) subject related to the scope of this systematic review, (2) study with follow-up, (3) not performed in specific groups, (4) to have a comparison group. After selection by title and abstract, potentially eligible articles were read in full. Meta-analysis was carried out considering the outcome as caries lesion progression or arrestment.

RESULTS: The search strategy identified 772 potentially relevant studies, and 10 of them were included in the review (six laboratory studies and four longitudinal trials). For the longitudinal clinical trials, no difference was verified among the materials (OR = 0.680, 95%CI:0.233-1.983). When a meta-analysis was performed for laboratory studies, GIC was significantly associated with better ability to arrest caries lesions (OR = 0.153, 95%CI:0.060-0.391).

CONCLUSIONS: In laboratory studies, GIC shows better ability to arrest caries lesion in approximal adjacent surfaces, but this ability was not confirmed in longitudinal clinical trials.
**Silver Diamine Fluoride Treatment Considerations in Children's Caries Management. [Review]**

By arresting and preventing caries, silver diamine fluoride (SDF) offers an alternate care path for patients for whom traditional restorative treatment is not immediately available. Current data from controlled clinical trials encompassing more than 3,900 children indicate that biannual application of SDF reduces progression of current caries and risk of subsequent caries. The purpose of this paper was to highlight the best evidence from systematic reviews and clinical trials for clinicians to consider the benefits, risks, and limitations as they implement silver diamine fluoride therapy on young children.

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**Complication After Extraction of Natal Teeth with Continued Growth of a Dental Papilla. [Review]**

The purposes of this case report were to describe a growing two-cm gingival mass that developed after natal teeth were extracted in a four-month-old female patient, present a review of the literature on the growth of a gingival mass after the extraction of natal teeth, and illustrate the clinical and histological features that differentiate this condition from other types of gingival masses in infants. Histological examination of the excised mass revealed that it contained tooth-like hard tissue (regular and irregular dentin) that intermingled with bone, dental pulp, and fibrous tissue. We found eight cases from 1962 to 2009 in which a soft-tissue mass with dentin-like hard tissue or a tooth-like structure had developed after the extraction of natal teeth. Based on clinical and histological findings, we deduced that the mass was the result of abnormal growth of a residual dental papilla, including mesenchymal stem cells. Consequently, dentists, obstetricians, gynecologists, and pediatricians should be aware of this potential complication and observe caution before they extract natal teeth.
Case Reports. Journal Article. Review.

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2016

Unique Identifier
28206888

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MEDLINE

Authors
Anonymous.

Title
Evidence-based Clinical Practice Guideline for the Use of Pit-and-Fissure Sealants.

Source

Abstract
BACKGROUND: This article presents evidence-based clinical recommendations for the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars in children and adolescents. A guideline panel convened by the American Dental Association (ADA) Council on Scientific Affairs and the American Academy of Pediatric Dentistry conducted a systematic review and formulated recommendations to address clinical questions in relation to the efficacy, retention, and potential side effects of sealants to prevent dental caries; their efficacy compared with fluoride varnishes; and a head-to-head comparison of the different types of sealant material used to prevent caries on pits-and-fissures of occlusal surfaces.

TYPES OF STUDIES REVIEWED: This is an update of the ADA 2008 recommendations on the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars. The authors conducted a systematic search in MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and other sources to identify randomized controlled trials reporting on the effect of sealants (available on the U.S. market) when applied to the occlusal surfaces of primary and permanent molars. The authors used the Grading of Recommendations Assessment, Development, and Evaluation approach to assess the quality of the evidence and to move from the evidence to the decisions.

RESULTS: The guideline panel formulated 3 main recommendations. They concluded that sealants are effective in preventing and arresting pit-and-fissure occlusal carious lesions of primary and permanent molars in children and adolescents compared with the nonuse of sealants or use of fluoride varnishes. They also concluded that sealants could minimize the progression of non-cavitated occlusal carious lesions (also referred to as initial lesions) that receive a sealant. Finally, based on the available limited evidence, the panel was unable to provide specific recommendations on the relative merits of 1 type of sealant material over the others. Conclusions and practical implications: These recommendations are designed to inform practitioners during the clinical decision-making process in relation to the prevention of occlusal carious lesions in children and adolescents. Clinicians are encouraged to discuss the information in this guideline with patients or the parents of patients. The authors recommend that clinicians re-orient their efforts toward increasing the use of sealants on the occlusal surfaces of primary and permanent molars in children and adolescents.

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Title
Loss of Permanent First Molars in the Mixed Dentition: Circumstances Resulting in Extraction and Requiring Orthodontic Management. [Review]

Source

Abstract
Extraction of significantly compromised permanent first molars may be indicated during the mixed dentition stage of occlusal development. The purpose of this article was to review circumstances that can result in the loss of a permanent first molar-including dental caries, molar incisor hypomineralization, eruption disturbances of permanent teeth, and failure of restorative...
treatment to affirm that a complete dental arch is not necessary for the existence of a functional dental arch. The extraction of permanent first molar(s) with subsequent orthodontic treatment in a young patient can be considered a cost-effective alternative to placing complex restorations that require replacement over the lifespan. Approaches to establish a functional dental arch in the event of the loss of a permanent first molar(s) are outlined. Additionally, orthodontic diagnostic and treatment principles are reviewed. Case histories are provided to illustrate the clinical management of permanent first molar extractions to achieve a functional dental arch.

**Abstract**

**PURPOSE:** The purpose of this study was to assess the scientific evidence regarding the survival and clinical performance of adhesive materials for primary molars, comparing composite resin (CR), conventional glass ionomer cement (GIC), resin-modified glass ionomer (RMGIC), silver-reinforced glass ionomer cement, and compomer.

**METHODS:** Six databases were searched without restrictions regarding language or year of publication. Meta-analysis was conducted; risk ratios (RRs) and 95 percent confidence intervals (95% CI) were calculated.

**RESULTS:** Eleven clinical trials were included. Two studies found that the median survival time (MST) of SRGIC was less than that of GIC and RMGIC (P<0.005), and two studies found that the GIC had a lower MST than both RMGIC and compomer (P<0.05). Meta-analysis for CR, compomer, and RMGIC was conducted. These materials did not differ significantly regarding the number of restorations that survived over 24 months: CR versus RMGIC (RR equals 1.12; 95% CI equals 0.96 to 1.31); CR versus compomer (RR equals 1.04; 95% CI equals 0.96 to 1.13); and compomer versus RMGIC (RR equals 1.03; 95% CI equals 0.84 to 1.27).

**CONCLUSIONS:** Silver-reinforced glass ionomer cement has the worst survival rate among ionomers, and adhesive materials with a resin component have similar survival rates.

**References:**

- Santos AP; Moreira IK; Scarpelli AC; Pordeus IA; Paiva SM; Martins CC. Survival of Adhesive Restorations for Primary Molars: A Systematic Review and Metaanalysis of Clinical Trials. J Am Dent Assoc. 2017 Jun;148(6):e71; PMID: 28550854
- Wright JT; Tampi MP; Graham L; Estrich C; Crall JJ; Fontana M; Gillette EJ; Novy BB; Dhar V; Donly K; Hewlett ER; Quinonez RB; Chaffin J; Crespin M; Iafolla T; Siegal MD; Carrasco-Labra A. Silver-reinforced glass ionomer cement has the worst survival rate among ionomers, and adhesive materials with a resin component have similar survival rates.
CONCLUSIONS AND PRACTICAL IMPLICATIONS: Available evidence suggests that sealants are effective and safe to prevent or arrest the progression of noncavitated carious lesions compared with a control without sealants or fluoride varnishes. Further research is needed to provide information about the relative merits of the different types of sealant materials.

Abstract
The safe sedation of children for procedures requires a systematic approach that includes the following: no administration of sedating medication without the safety net of medical/dental supervision, careful presedation evaluation for underlying medical or surgical conditions that would place the child at increased risk from sedating medications, appropriate fasting for elective procedures and a balance between the depth of sedation and risk for those who are unable to fast because of the urgent nature of the procedure, a focused airway examination for large (kissing) tonsils or anatomic airway abnormalities that might increase the potential for airway obstruction, a clear understanding of the medication's pharmacokinetic and pharmacodynamic effects and drug interactions, appropriate training and skills in airway management to allow rescue of the patient, age- and size-appropriate equipment for airway management and venous access, appropriate medications and reversal agents, sufficient numbers of staff to both carry out the procedure and monitor the patient, appropriate physiologic monitoring during and after the procedure, a properly equipped and staffed recovery area, recovery to the presedation level of consciousness before discharge from medical/dental supervision, and appropriate discharge instructions. This report was developed through a collaborative effort of the American Academy of Pediatrics and the American Academy of Pediatric Dentistry to offer pediatric providers updated information and guidance in delivering safe sedation to children.
Title
The process of mineralisation in the development of human tooth. [Review]

Source

Abstract
AIM: Tooth development and mineralisation are processes that derive from different tissues interactions, in particular ectodermal and mesenchymal layers. These interactions are responsible for the formation of unique structures with a particular chemical composition. Despite differences, mineralised tissues are similar and they derive by highly concerted extracellular processes that involve matrix proteins, proteases, and mineral ion fluxes that collectively regulate the nucleation, growth and organisation of forming mineral crystals. This review aims at explaining mineralisation, its stages and when damage occurs and alters the hard tissues structure.

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Journal Article. Review.

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2016

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Title
Treatment of Plaque-induced Gingivitis, Chronic Periodontitis, and Other Clinical Conditions. [Review]

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Title
Guideline for Periodontal Therapy.

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Title
Periodontal Diseases of Children and Adolescents. [Review]

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Authors
Malmgren B; Andreasen JO; Flores MT; Robertson A; DiAngelis AJ; Andersson L; Cavalleri G; Cohenca N; Day P; Hicks ML; Malmgren O; Moule AJ; Onetto J; Tsukiboshi M.

Authors Full Name
Malmgren, Barbro; Andreasen, Jens O; Flores, Marie Therese; Robertson, Agneta; DiAngelis, Anthony J; Andersson, Lars; Cavalleri, Giacomo; Cohenca, Nestor; Day, Peter; Hicks, Morris Lamar; Malmgren, Olle; Moule, Alex J; Onetto, Juan; Tsukiboshi, Mitsuhiro.

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Tsukiboshi, Mitsuhiro. Private Practice, Amagun, Aichi, Japan.

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Abstract
Traumatic injuries to the primary dentition present special problems and the management is often different as compared with the permanent dentition. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the task group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion or majority decision of the task group. Finally, the IADT board members were giving their opinion and approval. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care for management of primary teeth injuries. The IADT cannot and does not guarantee favorable outcomes from strict adherence to the guidelines, but believe that their application can maximize the chances of a positive outcome.

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Title
Policy on Management of Patients with Cleft Lip/Palate and Other Craniofacial Anomalies.

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Authors
Andersson L; Andreasen JO; Day P; Heithersay G; Trope M; DiAngelis AJ; Kenny DJ; Sigurdsson A; Bourguignon C; Flores MT; Hicks ML; Lenzi AR; Malmgren B; Moule AJ; Tsukiboshi M.

Authors Full Name
Andersson, Lars; Andreasen, Jens O; Day, Peter; Heithersay, Geoffrey; Trope, Martin; DiAngelis, Anthony J; Kenny, David J; Sigurdsson, Asgeir; Bourguignon, Cecilia; Flores, Marie Therese; Hicks, Morris Lamar; Lenzi, Antonio R; Malmgren, Barbro; Moule, Alex J; Tsukiboshi, Mitsuhiro.

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Tsukiboshi, Mitsuhiro. Private Practice, Amagun, Aichi, Japan.

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Abstract
Avulsion of permanent teeth is one of the most serious dental injuries, and a prompt and correct emergency management is very important for the prognosis. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the task group. The guidelines represent the current best evidence and practice based on literature research and professionals’ opinion. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion or majority decision of the task group. Finally, the IADT board members were giving their opinion and approval. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care of avulsed permanent teeth.

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Authors
DiAngelis AJ; Andreasen JO; Ebeleseder KA; Kenny DJ; Trope M; Sigurdsson A; Andersson L; Bourguignon C; Flores MT; Hicks ML; Lenzi AR; Malmgren B; Moule AJ; Pohl Y; Tsukiboshi M.
Guidelines for the Management of Traumatic Dental Injuries: 1. Fractures and Luxations of Permanent Teeth

Traumatic dental injuries (TDIs) of permanent teeth occur frequently in children and young adults. Crown fractures and luxations are the most commonly occurring of all dental injuries. Proper diagnosis, treatment planning and followup are important for improving a favorable outcome. Guidelines should assist dentists and patients in decision making and for providing the best care effectively and efficiently. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the IADT board members. The guidelines represent the best current evidence based on literature search and professional opinion. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care of TDIs. In this first article, the IADT Guidelines for management of fractures and luxations of permanent teeth will be presented.

Guideline on Prescribing Dental Radiographs for Infants, Children, Adolescents, and Persons with Special Health Care Needs

Traumatic dental injuries (TDIs) of permanent teeth occur frequently in children and young adults. Crown fractures and luxations are the most commonly occurring of all dental injuries. Proper diagnosis, treatment planning and followup are important for improving a favorable outcome. Guidelines should assist dentists and patients in decision making and for providing the best care effectively and efficiently. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the IADT board members. The guidelines represent the best current evidence based on literature search and professional opinion. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care of TDIs. In this first article, the IADT Guidelines for management of fractures and luxations of permanent teeth will be presented.

Guideline on Informed Consent

Guideline on Prescribing Dental Radiographs for Infants, Children, Adolescents, and Persons with Special Health Care Needs

Guideline on Informed Consent

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Guideline on Dental Management of Pediatric Patients Receiving Chemotherapy, Hematopoietic Cell Transplantation, and/or Radiation Therapy.

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Title
Guideline on Antibiotic Prophylaxis for Dental Patients at Risk for Infection.

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BACKGROUND: This article presents evidence-based clinical recommendations for the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars in children and adolescents. A guideline panel convened by the American Dental Association (ADA) Council on Scientific Affairs and the American Academy of Pediatric Dentistry conducted a systematic review and formulated recommendations to address clinical questions in relation to the efficacy, retention, and potential side effects of sealants to prevent dental caries; their efficacy compared with fluoride varnishes; and a head-to-head comparison of the different types of sealant material used to prevent caries on pits-and-fissures of occlusal surfaces.

TYPES OF STUDIES REVIEWED: This is an update of the ADA 2008 recommendations on the use of pit-and-fissure sealants on the occlusal surfaces of primary and permanent molars. The authors conducted a systematic search in MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and other sources to identify randomized controlled trials reporting on the effect of sealants (available on the U.S. market) when applied to the occlusal surfaces of primary and permanent molars. The authors used the Grading of Recommendations Assessment, Development, and Evaluation approach to assess the quality of the evidence and to move from the evidence to the decisions.

RESULTS: The guideline panel formulated 3 main recommendations. They concluded that sealants are effective in preventing and arresting pit-and-fissure occlusal carious lesions of primary and permanent molars in children and adolescents compared with the nonuse of sealants or use of fluoride varnishes. They also concluded that sealants could minimize the progression of non-cavitated occlusal carious lesions (also referred to as initial lesions) that receive a sealant. Finally, based on the available limited evidence, the panel was unable to provide specific recommendations on the relative merits of 1 type of sealant material over the
RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

others. Conclusions and practical implications: These recommendations are designed to inform practitioners during the clinical decision-making process in relation to the prevention of occlusal carious lesions in children and adolescents. Clinicians are encouraged to discuss the information in this guideline with patients or the parents of patients. The authors recommend that clinicians re-orient their efforts toward increasing the use of sealants on the occlusal surfaces of primary and permanent molars in children and adolescents.

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Year of Publication: 2016

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Authors: Anonymous.
Title: Guideline on Restorative Dentistry.

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Abstract: The safe sedation of children for procedures requires a systematic approach that includes the following: no administration of sedating medication without the safety net of medical/dental supervision, careful presedation evaluation for underlying medical or surgical conditions that would place the child at increased risk from sedating medications, appropriate fasting for elective procedures and a balance between the depth of sedation and risk for those who are unable to fast because of the urgent nature of the procedure, a focused airway examination for large (kissing) tonsils or anatomic airway abnormalities that might increase the potential for airway obstruction, a clear understanding of the medication's pharmacokinetic and pharmacodynamic effects and drug interactions, appropriate training and skills in airway management to allow rescue of the patient, age- and size-appropriate
equipment for airway management and venous access, appropriate medications and reversal agents, sufficient numbers of staff to both carry out the procedure and monitor the patient, appropriate physiologic monitoring during and after the procedure, a properly equipped and staffed recovery area, recovery to the presedation level of consciousness before discharge from medical/dental supervision, and appropriate discharge instructions. This report was developed through a collaborative effort of the American Academy of Pediatrics and the American Academy of Pediatric Dentistry to offer pediatric providers updated information and guidance in delivering safe sedation to children.

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Guideline on Use of Nitrous Oxide for Pediatric Dental Patients.
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27931461
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Title
Guideline on Use of Local Anesthesia for Pediatric Dental Patients.
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Guideline on Protective Stabilization for Pediatric Dental Patients.
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**Title**
Guideline on Management of Dental Patients with Special Health Care Needs.

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Guideline on Oral Health Care for the Pregnant Adolescent.
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Guideline on Adolescent Oral Health Care.
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Guideline on Caries-risk Assessment and Management for Infants, Children, and Adolescents.
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Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling, and Oral Treatment for Infants, Children, and Adolescents.
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Policy on the Use of Deep Sedation and General Anesthesia in the Pediatric Dental Office. [Review]
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Policy on Oral Health in Child Care Centers. [Review]
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Dentin caries progression and the role of metalloproteinases: an update. [Review]
Source

Abstract
AIM: This review aims to summarise our understanding of the destructive role of acid environment and metalloproteinases in dentin caries progression using a review process.

METHOD: The acids resulting from consumption of sugars by acidogenic and aciduric bacteria can cause demineralisation of the tooth surface, but are not able to cause caries-like lesions. The appearance of such lesions requires the activation of enzymatic proteolysis in an acidic environment for degradation of the dentin organic matrix, leading to cavity formation. Bacterial
collagenases have long been considered responsible for organic matrix destruction; host cell-derived matrix metalloproteinases (MMPs) have recently been considered to be involved in the dentinal matrix destruction of carious lesions.

DISCUSSION AND CONCLUSION: MMPs are initially synthesised as inactive zymogens to be activated in acid environment of dentinal fluid during the carious process, resulting in destruction of the collagenous matrix. The role of acid environment on enamel and dentin demineralisation and the role of salivary and dentinal MMPs in dentin progression of caries has encouraged general dentists to include the monitoring of oral environment not only by control of bacterial oral flora in caries treatment protocol, but mainly by inhibition of dentinal and salivary MMPs through the use of toothpaste and/or mouthwash containing specific active agents.

Abstract
BACKGROUND: Pink spots in teeth were first described by Mummery in 1920, and were related to resorption. Resorption is a pathologic process that often eludes the clinician with its varied etiologic factors and diverse clinical presentations. Resorption can be generally classified as internal and external resorption. Internal resorption has been described as a rare occurrence as compared to external resorption.

CASE REPORT: This article describes a pink spot that was diagnosed as a progressing resorption process. Early diagnosis enabled a successful management of the lesion.

CONCLUSION: Early diagnosis and treatment of an internal resorption, clinically seen as a pink spot, in a primary central incisor may prevent its fast progress and subsequent loss.

Abstract
OBJECTIVES: To identify the intranasal (IN) sedatives used to achieve conscious sedation during dental procedures amongst children.

METHODS: A literature review was conducted by identifying relevant studies through searches on Medline. Search included IN of midazolam, ketamine, sufentanil, dexmedetomidine, clonidine, haloperidol, and lorpam. Studies included were conducted amongst individuals below 18 years, published in English, and were not restricted by year. Exclusion criteria were articles that did not focus on pediatric dentistry.

RESULTS: Twenty studies were included. The most commonly used sedatives were midazolam, followed by ketamine and sufentanil. Onset of action for IN midazolam was 5-15 minutes (min), however, IN ketamine was faster (mean 5.74 min), while both
IN sufentanil (mean 20 min) and IN dexmedetomidine (mean 25 min) were slow in comparison. Midazolam was effective for modifying behavior in mild to moderately anxious children, however, for more invasive or prolonged procedures, stronger sedatives, such as IN ketamine, IN sufentanil were recommended. In addition, ketamine fared better in overall success rate (89%) when compared with IN midazolam (69%). Intranasal dexmedetomidine was only used as pre-medication amongst children. While its’ onset of action is longer when compared with IN midazolam, it produced deeper sedation at the time of separation from the parent and at the time of anesthesia induction.

CONCLUSION: Intranasal midazolam, ketamine, and sufentanil are effective and safe for conscious sedation, while intranasal midazolam, dexmedetomidine, and sufentanil have proven to be effective premedications.

Abstract

OBJECTIVE: Beta Thalassemia (betaT) patients present a unique facial appearance and specific craniofacial, jaw and dental patterns. Although this anomaly often requires orthodontic management, betaT patients have received scant attention in the orthodontic and dental literature over the past 50 years. The aim of this article is to review the characteristic craniofacial and dental manifestation pattern of betaT patients and to emphasize their preferred orthodontic management protocol by presenting a betaT orthodontic treated patient.

CASE REPORT: A 10 year old patient presented with a complaint of severe esthetic and functional disorders due to her diagnosis of betaT. We initiated orthodontic treatment including a combined orthopedic and functional treatment modality to improve facial appearance.

RESULTS: Maxillary restraint and increased mandibular size during treatment along with an increase in the vertical dimension were achieved. The patient presented with Angle class I molar relationship, with reduction of the excessive overjet and deep overbite.

CONCLUSION: Orthodontic treatment comprised of maxillary orthopedic treatment directed especially toward premaxilla with light forces, and mandibular modification by functional appliance along with fixed orthodontic treatment is recommended in betaT patients.
Indirect pulp capping versus pulpotomy for treating deep carious lesions approaching the pulp in primary teeth: a systematic review. [Review]

Source

AIM: To assess dental practice regarding the use of indirect pulp capping or pulpotomy in children with deep carious lesions approaching the pulp in primary teeth and to compare the efficacy of the two pulp treatments.

METHODS:

STUDY DESIGN: Systematic review. We searched the Cochrane Library, PubMed via MEDLINE, and EMBASE as well as the reference lists of included reports and ClinicalTrials.gov (for ongoing trials). Eligible studies were surveys of dental practice sent to dentists regarding the use of indirect pulp capping and pulpotomy in children with deep carious lesions approaching the pulp in primary teeth and any type of clinical study. Two review authors independently extracted data and assessed risk of bias in duplicate.

RESULTS: Of the 481 potentially eligible articles, 11 were included in the review: 8 described surveys of dental practice, 1 a non-randomised study, and 2 ongoing randomised trials. The surveys of dental practice showed an overall increase in the teaching and practice of indirect pulp capping in primary teeth. The non-randomised study found a statistically significant difference in favour of indirect pulp capping for clinical and radiological success at 3 years but with high overall risk of bias.

CONCLUSIONS: Despite the success rate of indirect pulp capping for treating deep carious lesions approaching the pulp in primary teeth, practitioners still hesitate to practice this technique because of lack of evidence and studies on this topic. Thus, for strong evidence, investigators are encouraged to conduct randomised trials comparing the efficacy of indirect pulp capping and pulpotomy for treating deep carious lesions approaching the pulp in primary teeth.

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RESULTS: The search identified 348 papers for screening. Among these, 218 papers did not satisfy the study inclusion criteria. Consequently, 130 full papers were retrieved and reviewed. Finally, 9 papers were included. Most of the trials were assessed as having high risk of bias. Five included studies that compared the success rates of restorations with different filling materials and liner materials. Two studies showed clinical advantages of using minimally invasive approaches in caries removal and cavity preparation. The other two trials showed low success rates of interim GI restorations done in a field setting, compared to the high caries arrest rates of silver diammine fluoride application.

CONCLUSION: Within the limitation of this systematic review, there is insufficient evidence to make recommendations regarding which material and technique is the most appropriate for restorative treatment in young children. Minimally invasive approaches are advantageous in operative caries management in primary teeth in preschool children. More well-designed randomised controlled trials are required to confirm these findings.

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Title
Hypophosphatasia: diagnosis and clinical signs - a dental surgeon perspective. [Review]
Source
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Abstract
BACKGROUND: Hypophosphatasia (HPP) is a rare inherited metabolic disease in which mutations in the ALPL gene (encoding tissue-nonspecific alkaline phosphatase) result in varying degrees of enzyme deficiency. HPP manifests in a spectrum of symptoms, including early primary tooth loss (root intact) and alveolar bone mineralisation defects.

OBJECTIVE: To provide an overview of HPP for dental professionals to help recognise and differentially diagnose patients for appropriate referral to a specialist team.

METHODS: A non-systematic review of publications on HPP was performed.

RESULTS: Different forms of HPP are described, along with characteristic symptoms and laboratory findings. Diagnosis is challenging due to the rarity and variable presentation of symptoms. Low alkaline phosphatase levels are a signature of HPP, but reference ranges vary according to gender and age. Key features are defined and management strategies discussed, focusing on enzyme replacement therapy. Finally, a patient registry aimed at better defining the prevalence of HPP and raising awareness is described.

CONCLUSIONS: HPP is a rare disease with a wide spectrum of manifestations, with orodental symptoms featuring prominently in the natural history. Dental professionals may be positioned at the beginning of the diagnostic pathway; thus, recognition of HPP features for timely referral and optimal disease management is important.

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Intracanal irrigants for pulpectomy in primary teeth: a systematic review and meta-analysis. [Review]

**Objective:** To conduct a systematic review and meta-analysis to assess the findings on the clinical efficacy of intracanal irrigants employed during pulpectomy of primary teeth.

**Methods:** A systematic search was performed in electronic databases and peer-reviewed paediatric dentistry journals to find relevant studies. Titles, abstracts, and full-text papers were located, screened, and assessed independently by two reviewers, and a meta-analysis was performed.

**Results:** The search identified a total of 775 records; 46 were selected and reviewed in full text. After screening, seven studies met the eligibility criteria for inclusion. Three studies compared the 2% chlorhexidine and saline solutions, but no analysis could be performed because of the heterogeneity between these; two of the studies reported non-comparative methodologies and results when compared, and were not analysed. Finally, two studies compared a mixture of tetracycline isomer, an acid, and a detergent (MTDA) or oxidative potential water (OPW) to sodium hypochlorite (NaOCl), without showing significant heterogeneity; therefore, their combined outcomes were included. Both fixed and random mixed models resulted in a non-significant weighted mean difference between treatments, according to a forest plot.

**Conclusions:** More studies are required with adequate quality, as well as a full-result report, including summary measurements of both response variables and effect size, to determine the most effective irrigant agents for use in pulpectomies.

Kuhnisch J; Ekstrand KR; Pretty I; Twetman S; van Loveren C; Gizani S; Spyridonos Loizidou M.

**Title**

**Comments**
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**Source**

Abstract

BACKGROUND: The European Academy of Paediatric Dentistry (EAPD) encourages prevention and arrest of active dental caries. Therefore, the present guidance provides evidence- and clinically-based recommendations for detecting and diagnosing early/non-cavitated caries lesions, risk assessment and disease management.

METHODS: A search of different databases was conducted using all terms related to the subject. Relevant papers were identified after a review of their titles, abstracts or full texts. Three workshops were held during the corresponding EAPD interim seminar in Brussels in 2015. Several statements were agreed upon and, furthermore, gaps in our knowledge were identified.

RESULTS: Following the systematic reviews and outcomes of the seminars, it was concluded that visual and radiographic caries detection should be utilised as a basic diagnostic approach to locate, assess and monitor non-cavitated caries lesions in primary and permanent teeth. As another important evaluation step, a caries risk assessment should be performed at a child's first dental visit, and reassessments should be performed on a regular basis. It is widely accepted that non-cavitated caries lesions can be managed non-invasively in the majority of cases. The spectrum of measures includes a low cariogenicity tooth-friendly diet, daily and appropriate management of the biofilm, home and within the dental office/surgery usage of fluorides as well as sealing techniques.

CONCLUSION: The detection and management of non-cavitated caries is an essential aspect of preventive dentistry. Therefore, the EAPD encourages oral health care providers and caregivers to implement preventive practices that can arrest early caries and improve individual and public dental health.

Objectives

OBJECTIVE: To determine the three-year survival rate of Class II resin-modified glass-ionomer cement (RMGIC), Vitremer, restorations in primary molars and to compare these results with measurements of survival of Class II restorations of standard restorative materials.

STUDY DESIGN: Data on Class II restorations placed in primary molars during a six-year period were collected through a chart review and radiographic evaluation in the office of a board-certified pediatric dentist. A radiograph showing that the restoration was intact was required at least 3 years after placement to qualify as successful. If no radiograph existed, the restoration was excluded. If the restoration was not found to be intact radiographically or was charted as having been replaced before three years it was recorded as a failure. The results of this study were then compared to other standard restorative materials using normalized annual failure rates.

RESULTS: Of the 1,231 Class II resin-modified glass-ionomer cement (RMGIC), Vitremer, restorations in primary molars and to compare these results with measurements of survival of Class II restorations of standard restorative materials.

CONCLUSIONS: A novel approach comparing materials showed that in this study Vitremer compared very favorably to previously published success rates of other standard restorative materials (amalgam, composite, stainless steel crown, compomer) and other RMGIC studies.
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Title
Does Smear Layer Removal Influence Root Canal Therapy Outcome? A Systematic Review. [Review]
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OBJECTIVE: The aim of this systematic review was to determine whether the smear layer (SL) removal procedure influences the outcome of root canal treatment.

STUDY DESIGN: We performed a search on Pubmed, Scopus, ISI Web of Science, Cochrane Library, Lilacs and SIGLE. We included randomized controlled clinical trials (RCT), with clinical and radiographic outcomes, conducted on subjects who had undergone root canal therapy. The protocol differed only in the SL removal or maintenance procedure. We evaluated the papers for risk of bias according to the Cochrane assessment tool.

RESULTS: A total of 1,983 articles were found, after removal of duplicates, 892 remained. We included two studies in this review. One study revealed a low risk of bias and a high success rate for the SL removal group compared to the non SL removal group (P = 0.04), while the other study had a high risk of bias and found no difference between the SL removal and non SL removal groups (P = 1.00).

CONCLUSION: We concluded that the SL removal for root canal treatment of primary teeth with initial clinical signs and symptoms or pulpal necrotic status, could benefit the outcome, although further RCT should be performed to achieve evidence.

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Title
Are self-etch adhesive systems effective in the retention of occlusal sealants? A systematic review and meta-analysis. [Review]
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Abstract
BACKGROUND: Occlusal sealants are an effective method for caries prevention, although the effectiveness of different application strategies has not been established yet.

AIM: This systematic review compared the retention rate of sealants placed on occlusal surfaces following the use of self-etch adhesive systems and traditional acid etching, with or without the application of adhesive system.

DESIGN: Literature searching was carried out until June 2015 in PubMed/MEDLINE, CENTRAL, and ClinicalTrials databases selecting randomized clinical trials that evaluated self-etch adhesive systems associated with pit and fissure sealants in primary or permanent molars comprising retention as outcome. From 683 potentially eligible studies, 10 were selected for full-text analysis and 5 were included in the meta-analysis. Two reviewers independently selected the studies, extracted the data, and assessed the bias risk. Pooled-effect estimates were obtained by comparing the retention failure rate between groups (self-etch systems vs acid etching with or without adhesive systems).

RESULTS: Significant difference was found between groups, favoring the control group (prior acid etching) (P < 0.05), which showed lower failure rate in the retention of occlusal sealants. High heterogeneity was found on the meta-analysis. Most trials showed good evidence strength.
CONCLUSIONS: Occlusal sealants applied with self-etch systems show lower retention throughout time than sealants applied in the conventional approach, regardless of the use of adhesive systems.

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Title
Adhesive systems for restoring primary teeth: a systematic review and meta-analysis of in vitro studies. [Review]

Source

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Abstract
AIM: To systematically review the literature for in vitro studies that evaluated the immediate or after ageing bond strength of etch-and-rinse and self-etch adhesive systems to enamel and dentin of primary teeth.

DESIGN: The search was conducted in PubMed/MEDLINE, Cochrane, SciELO, Lilacs, and Scopus databases with no publication year or language limits, following the preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement. From 459 potentially eligible studies, 39 were selected for full-text analysis, and 5 were identified in reference lists, with 36 considered in the meta-analysis. Two reviewers independently selected the studies, extracted the data, and assessed the risk of bias. Pooling bond strength data was calculated using random effects analysis method, comparing two categories of adhesives (etch-and-rinse versus self-etch systems) when applied in different types and conditions of substrate (alpha = 0.05).

RESULTS: No statistical significant difference in bond strength between both categories was observed in caries-affected dentin at immediate evaluation and in sound dentin after ageing. Etch-and-rinse adhesives, however, performed better in sound enamel and dentin substrates considering immediate bond strength. None study assessed the long-term adhesive effectiveness to sound or demineralized enamel.

CONCLUSION: Although the articles included in this meta-analysis showed high heterogeneity and high risk of bias, the in vitro literature suggests superior performance of etch-and-rinse adhesives in primary teeth in comparison with self-etch systems.

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Institution
Dental caries in individuals with Down syndrome: a systematic review. [Review]


Title
Dental caries in individuals with Down syndrome: a systematic review. [Review]

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Abstract
BACKGROUND: Many studies have shown a lower experience of caries in people with Down syndrome compared to individuals without Down syndrome, but this issue has not been critically evaluated.

AIM: To conduct a systematic review of the international literature on dental caries experience in people with Down syndrome.

DESIGN: Three online databases (PubMed, LILACS, and Cochrane) were used to identify relevant studies on caries experience in people with Down syndrome published until May 2015. PICO (Patient/Population, Intervention, Comparison group, and Outcome) criteria were used to screen studies by title and abstract. An assessment of the methodological study quality was performed according to the modified Newcastle-Ottawa Scale.

RESULTS: The search resulted in 226 studies. Thirteen publications were included in the systematic review. Ten studies reported results of lower caries experience in individuals with Down syndrome in at least one age group studied. Three studies reported no differences in caries experience among the groups. All studies, however, included in this systematic review had limitations that increased the likelihood of bias in the study results.

CONCLUSION: There is no scientific evidence to support the hypothesis that people with Down syndrome have a lower experience of caries than non-syndromic individuals.

Extraoral cutaneous sinus tracts of dental origin in the paediatric patient. A report of three cases and a review of the literature. [Review]


Title
Extraoral cutaneous sinus tracts of dental origin in the paediatric patient. A report of three cases and a review of the literature.

[Review]
Source

Abstract
BACKGROUND: An extraoral sinus of odontogenic origin within the face and neck region is normally the consequence of long-standing chronic infection due to caries, trauma or periodontal infection. There is little reported literature on the prevalence of extraoral cutaneous sinus lesions in the paediatric dental patient as presentation is often delayed resulting in misdiagnosis and consequential mismanagement.

CASE REPORT: The cases discussed concentrate on the aetiology, history, presentation and diagnosis of extraoral sinus lesions that presented in children referred to the Child Dental Health Department at the University Dental Hospital of Manchester over a six-month period.

CONCLUSIONS: The importance of correct diagnosis and treatment management of an extra oral cutaneous sinus in the paediatric patient only occurred when the child attended a specialist led paediatric dental clinic for consultation.
Effect of maternal use of chewing gums containing xylitol on transmission of mutans streptococci in children: a meta-analysis of randomized controlled trials.

AIM: To evaluate the effect of the maternal use of xylitol gum on MS reduction in infants.

DESIGN: A structured literature review and meta-analysis. A random effects model was used to assess the relative risks of the incidence of MS in the saliva or plaque of children who were 6, 9, 12, 18, and 24 months old.

RESULTS: We reviewed 11 RCTs derived from 5 research teams that included 601 mothers. Our results indicated that the incidence of MS in the saliva or plaque of the infants was significantly reduced in the xylitol group (risk ratio: 0.54; 95% confidence interval: 0.39-0.73, at 12-18 months) and (risk ratio: 0.56; 95% confidence interval: 0.40-0.79, at 36 months) compared with the control groups. The long-term effect of maternal xylitol gum exposure on their children's dental caries was controversial.

CONCLUSION: Habitual xylitol consumption by mothers with high MS levels was associated with a significant reduction in the mother-child transmission of salivary MS.