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6. review.ti. and 4 (332)
7. 5 or 6 (1033)
8. limit 7 to yr="2015 -Current" (80)
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Title
Dental fear/anxiety among children and adolescents. A systematic review.

Source

Abstract
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.

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RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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Title
Aesthetic preformed paediatric crowns: systematic review.

Source

Abstract
BACKGROUND: Different aesthetic preformed crowns (APC) are proposed to restore decayed and damaged primary teeth because the stainless steel crowns (SSCs) do not satisfy parents concerned about aesthetic.

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.

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Title
Change in children's oral health-related quality of life following dental treatment under general anaesthesia for the management of dental caries: a systematic review. [Review]

Source

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Abstract
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.

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. All but one study 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.

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**Effectiveness of Xylitol in Reducing Dental Caries in Children.**

**Source:** Pediatric Dentistry. 39(2):103-110, 2017 Mar 15.

**Abstract**

PURPOSE: The purpose of this study was to evaluate the effectiveness of xylitol in reducing dental caries in children compared to no treatment, a placebo, or preventive strategies.

METHODS: MEDLINE via PubMed, Web of Science, and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from January 1, 1995 through Sept. 26, 2016 for randomized and controlled trials on children consuming xylitol for at least 12 months. The primary endpoint was caries reduction measured by mean decayed, missing, and filled primary and permanent surfaces/teeth (dmfs/t, DMFS/T, respectively). The I2 and chi-square test for heterogeneity were used to detect trial heterogeneity. Meta-analyses were performed and quality was evaluated using GRADE profiler software.

RESULTS: Analysis of five randomized controlled trials (RCTs) showed that xylitol had a small effect on reducing dental caries (standardized mean difference [SMD] equals -0.24; 95 percent confidence interval [CI] equals -0.48 to 0.01; P = 0.06) with a very low quality of evidence and considerable heterogeneity. Studies with higher xylitol doses (greater than four grams per day) demonstrated a medium caries reduction (SMD equals -0.54; 95 percent CI equals -1.14 to 0.05; P = 0.07), with these studies also having considerable heterogeneity and very low quality of evidence.

CONCLUSIONS: The present systematic review examining the effectiveness of xylitol on caries incidence in children showed a small effect size in randomized controlled trials and a very low quality of evidence that makes preventive action of xylitol uncertain.
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 only 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.
ART is an alternative for restoring occlusoproximal cavities in primary teeth - evidence from an updated systematic review and meta-analysis.

**Abstract**

**BACKGROUND:** A previous systematic review showed that atraumatic restorative treatment (ART) can be an option to restore the occlusoproximal cavities in primary teeth; however, few studies fulfilled the criteria of inclusion to generate a high level of evidence.

**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.

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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, ICTRP, 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=0.06), 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.
A systematic review on the association between molar incisor hypomineralization and dental caries. [Review]

BACKGROUND: Molar incisor hypomineralization (MIH) is a defect of enamel. The lower strength of the enamel can lead to fractures that predispose for plaque accumulation and caries.

AIM: This systematic review aimed to assess the association between MIH and caries.

DESIGN: Studies involving children of all ages, which reported results on MIH and caries in the permanent dentition, were considered eligible. A search was performed in PubMed and was limited to the period from January 2003 to November 2015, and to studies written in English. Reviews, meta-analyses, and case reports were excluded. The studies were evaluated by use of the Newcastle-Ottawa Quality Assessment Scale (NOS).

RESULTS: Seventeen publications were compiled in the review. Most publications reported that children with MIH have higher caries experience. One study did not observe a difference in DMF values among children affected or not by MIH. Three studies reported that children with MIH were 2.1 to 4.6 times more likely to have caries in the permanent dentition than children without MIH.

CONCLUSIONS: A significant association between MIH and caries was found. The results should, however, be interpreted cautiously due to the lack of high-quality studies. The present systematic review confirms the need for further well-designed studies.
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.
RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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 oclusal 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.
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.
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.
Survival of Adhesive Restorations for Primary Molars: A Systematic Review and Metaanalysis of Clinical Trials.

Source

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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.
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.
Hypophosphatasia: diagnosis and clinical signs - a dental surgeon perspective. [Review]

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 rareness 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]

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.

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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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BACKGROUND: Occlusal sealants are an effective method for caries prevention, although the effectiveness of different application strategies has not been established yet. A systematic review and meta-analysis may provide evidence to support the use of sealants in primary and permanent molars.

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

**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.
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.
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.
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.

**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.

**Abstract**

BACKGROUND: Mutans streptococci (MS) are the major causative bacteria involved in human dental decay. Habitual consumption of xylitol has been proved to reduce MS levels in saliva and plaque.

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**CONCLUSION:** Habitual xylitol consumption by mothers with high MS levels was associated with a significant reduction in the mother-child transmission of salivary MS.
Dentin caries progression and the role of metalloproteinases: an update. [Review]

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.

ORTHODONTIC CONSIDERATION IN PATIENTS WITH BETA-THALASSEMIA MAJOR: CASE REPORT AND LITERATURE REVIEW. [Review]

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.

Abstract
AIM: Dental restorations have long been used for the management of early childhood caries, but there is a need to have an evidence based approach when selecting the most appropriate restorative intervention to treat dentin caries in preschool children.

This systematic review aimed to assess the effectiveness of restorative treatments of dentin caries in primary teeth in preschool children.

MATERIALS AND METHODS:
DESIGN: A systematic search of the main electronic databases (Pubmed, Cochrane Collaboration, EMBASE) was conducted to identify peer reviewed papers published in English in the years 1947-2014. Search keywords and MeSH headings were "dental caries", "primary dentition" and "dental restoration". The inclusion criteria were clinical studies conducted in children under 6 years old, and reported findings on the longevity or failure of restorations in primary teeth. Retrieved papers were read by two reviewers independently to assess suitability for inclusion, and the final decision was made by consensus. The quality of the included studies was assessed and data were extracted for analysis.

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.
INTACT was required at least 3 years after placement to qualify as successful. If no radiograph existed, the restoration was excluded. 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.

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.

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.
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 resinmodified glass-ionomer cement restorations placed over six years 427 met the inclusion criteria. There was a 97.42% survival rate for a 3-year period equivalent to an annual failure rate of 0.86%.

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]

Source

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Abstract
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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**RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY**

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Title

Seen and heard: towards child participation in dental research. [Review]

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Abstract

BACKGROUND: There has been an increasing emphasis in many countries worldwide to capture the views of children on health services and research. A previous systematic review found that most oral health research from 2000 to 2005 was conducted on children and highlighted the need for greater research with children.

AIM: To describe the extent to which oral health research between 2006 and 2014 has been conducted with or on children.

DESIGN: Systematic review. Electronic databases were searched for the literature on child dental health. Each identified paper was examined by two researchers and categorised based on the extent to which children were involved in the research, the type of study (evaluative or otherwise), the country of origin, and the clinical discipline.

RESULTS: The search included 2950 papers after application of the exclusion criteria. Of these, 17.4% were with children, 18.3% involved the use of proxies (parents or clinician), and 64.2% were on children.

CONCLUSIONS: The proportion of studies from 2006 to 2014 involving research with children has increased from 7.3% in 2000-2005. This systematic review provides evidence for movement towards children's involvement in dental research over the last 10 years. Future dental research must focus on incorporating children's perspectives into the evaluation of dental treatments to improve outcomes for children.

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**Challenges, benefits, and factors to enhance recruitment and inclusion of children in pediatric dental research. [Review]**

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Title

Challenges, benefits, and factors to enhance recruitment and inclusion of children in pediatric dental research. [Review]

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BACKGROUND: Historically, children have been excluded from clinical research. Many drugs and procedures have not been tested on children. The International Conference on Harmonization and the Food and Drug Administration guidance now stress that children should be included in research unless there is a reason for exclusion. Compared to adults, recruitment of children at different life stages requires different considerations.

OBJECTIVE: To review published studies and gray literature to identify pediatric recruitment strategies and develop recommendations.

RESULTS: There is limited clinical research literature available to recommend recruitment strategies and methods for pediatric trials. Formal guidelines for reporting recruitment activities in publications are scant. Recommendations are made based on current practices regarding protocol design, obtaining consent and engaging child, parent and caregiver in research.

CONCLUSIONS: A scientific approach is needed to determine the best design for recruitment of pediatric clinical studies. Investigators should report and publish recruitment and retention strategies that facilitate this important aspect of the research process to increase transparency, efficiency, and identification of the most effective methods for dental researchers.

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**REPORTED SIDE EFFECTS OF INTRAVENOUS MIDAZOLAM SEDATION WHEN USED IN PAEDIATRIC DENTISTRY: A REVIEW**

**BACKGROUND:** Intravenous (IV) midazolam may be of value as an alternative paediatric dental sedation technique, but there is some apprehension concerning its routine use due to a lack of evidence regarding its safety and side effects.

**AIM:** To review all available literature reporting the side effects of IV midazolam in children undergoing dental procedures.

**DESIGN:** Both randomised controlled trials (RCT) and non-randomised studies were reviewed. Reported side effects were categorised as either significant or minor, and the percentage prevalence of significant or minor side effects per episode of treatment was calculated.

**RESULTS:** Five RCTs were included, in which no significant side events were reported; however, minor side effects were recorded (n = 33, 19.5%), with paradoxical reaction being the most common (n = 11, 6.5%). Six non-randomised studies were included, in which no significant side effects were reported; however, minor side effects were reported (n = 118, 16.8%) with paradoxical reaction being the most common (n = 89, 12.7%).

**CONCLUSIONS:** Although no significant side effects were recorded, of the minor side effects reported paradoxical reaction was the most common. Due to inconsistency in side effect reporting, the authors suggest the application of a standardised adverse event reporting tool for future studies of sedation in paediatric dentistry.

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**GUIDELINE ON ACQUIRED TEMPOROMANDIBULAR DISORDERS IN INFANTS, CHILDREN, AND ADOLESCENTS**

**BACKGROUND:** Temporomandibular disorders (TMD) are common in children, and their management is often challenging. The guideline aims to provide evidence-based recommendations for the diagnosis and management of TMD in children.

**AIM:** To provide a guideline on the diagnosis and management of acquired TMD in children.

**OBJECTIVES:**
1. To review the current literature on the diagnosis and management of TMD in children.
2. To develop evidence-based recommendations for the management of TMD in children.
3. To provide guidelines for the follow-up and treatment of children with TMD.

**METHODS:**
A systematic review of the literature was conducted, followed by an expert panel meeting to develop the guidelines.

**CONCLUSIONS:** The guideline provides recommendations for the diagnosis and management of TMD in children, aiming to improve the care and outcomes for this population.

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**REFERENCES:**


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Title
Impact of Pharmacological Interventions in Expectant Mothers Resulting in Altered Mutans Streptococci Levels in their Children.

[Review]

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Abstract
PURPOSE: The purpose of this systematic review was to assess whether prenatal use of fluoride, chlorhexidine mouthrinses, and xylitol could alter the mutans streptococci levels in children.

METHODS: A systematic search of clinical trials was implemented for the Cochrane Oral Health Group's Trials Register, PubMed, PMC, NCBI, ClinicalKey, Google Scholar, LILACS, and Science Direct. A search for ongoing trials was also undertaken in the clinicaltrial.gov database to identify eligible studies. Data regarding methodology, participants, types of interventions, and outcomes were extracted, and the risk of bias was also assessed independently by two review authors.

RESULTS: Only two clinical trials fulfilled the inclusion criteria. Although one study showed significant results, the overall result of this systematic review showed no statistical significance. A risk ratio and 95 percent confidence interval of 0.1 (0.01 to 1.89) were obtained.

CONCLUSIONS: Statistically significant results were reported in both the included studies; however, systematic analysis revealed a dearth of current evidence to support the general recommendation of pharmacological interventions for expectant mothers resulting in altered mutans streptococci levels in their children.

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Abstract
PURPOSE: The purpose of this protocol for a systematic review of randomized controlled trials of primary tooth vital pulp therapy is to describe the reasoning and need for the review, the objectives of the review, and the methodology that will be used to analyse data from the included studies. Publication of a systematic review protocol also helps establish and maintain transparency of the process and accountability for the stated methods and outcomes sought.

METHODS: This protocol adheres to PRISMA-P standards for protocol reporting. A variety of relevant databases and resources will be searched. Trials selection, data extraction, and risk of bias assessment will be performed by two independent investigators. Primary outcome measures include clinical and radiographic success. Evidence tables will be generated for included study characteristics. The Cochrane risk of bias assessment tool will be applied to the selected studies. For meta-analysis, results will be pooled to provide estimates of appropriate effect size and heterogeneity of trials. The quality of evidence for outcomes will be determined using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach.

RESULTS: The proposed systematic review will provide findings useful for pediatric and general dentists, researchers, guideline developers, policymakers, and public and private insurers and can be the basis for an evidence-based guideline on pulp treatment of vital primary teeth with deep caries approximating the pulp.

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This paper presents a meta-analysis of parent-involved MI to improve pediatric health behavior and health outcomes.

METHODS: Study inclusion criteria: (1) examined modifiable pediatric health behaviors (< 18 years old); (2) used MI or motivational enhancement; (3) conducted a randomized controlled trial with a comparison group (non-MI control or active treatment group); (4) conducted the intervention with only a parent or both a parent and child; and (5) were written in English. Twenty-five studies (with 5,130 participants) were included and independently rated. Weighted mean effect sizes, using random-effects assumptions, were calculated.

RESULTS: Relative to comparison groups, MI was associated with significant improvements in health behaviors (e.g., oral health, diet, physical activity, reduced screen time, smoking cessation, reduced second hand smoke) and reduction in body mass index. Results suggest that MI may also outperform comparison groups in terms of dental caries, but more studies are needed. MI interventions were more successful at improving diets for Caucasians and when the intervention included more MI components.

CONCLUSIONS: Our findings provide support for providing motivational interviewing to parents and children to improve pediatric health behaviors.

An Institute of Medicine report places chronic disease management (CDM) as an intervention on a treatment spectrum between prevention and acute care. CDM commonly focuses on conditions in which patient self-care efforts are significant. Framing early childhood caries (ECC) as such a chronic condition invites dentistry to reconsider its approach to caries management and shift gears from a strictly surgical approach to one that also incorporates a medical approach. This paper's purpose was to explore the definition of and concepts inherent in CDM. An explanatory model is introduced to describe the multiple factors that influence ECC-CDM strategies. Reviewed literature suggests that early evidence from ECC-CDM interventions, along with results of pediatric asthma and diabetes CDM, supports CDM of ECC as a valid approach that is independent of both prevention and repair. Early results of ECC-CDM endeavors have demonstrated a reduction in rates of new cavitation, dental pain, and referral to the operating room compared to baseline rates. ECC-CDM strategies hold strong promise to curtail caries activity while complementing dental repair when needed, thereby reducing disease progression and cavity recurrence. Institutionalizing ECC-CDM will both require and benefit from evolving health care delivery and financing systems that reward positive health outcomes.
Evidence of Effectiveness of Current Therapies to Prevent and Treat Early Childhood Caries. [Review]

PURPOSE: The purpose of this paper was to systematically review the quality of evidence related to self-applied and professionally applied fluorides, antimicrobial agents, fissure sealants, temporary restorations, and restorative care for the prevention and management of early childhood caries (ECC).

METHODS: Relevant papers were selected after an electronic search for literature published in English between 2000 and April 2014. From 877 reports, 33 were included for full review. The quality of evidence was expressed according to the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system.

RESULTS: There was moderate and limited quality of evidence in support of fluoride toothpaste and fluoride varnish for ECC prevention, while the evidence for fluoride tablets/drops was insufficient. The support for the use of silver diamine fluoride, xylitol, chlorhexidine varnish/gel, povidone iodine, probiotic bacteria, and remineralizing agents (casein phosphopeptide-amorphous calcium phosphate) was insufficient. There was also insufficient quality of evidence for the use of sealants, temporary restorations, and traditional restorative care to reduce incidence of ECC.

CONCLUSION: The results reinforce the need for high quality clinical research and point out the knowledge gaps to be addressed in future studies.

Prevalence and Measurement of Dental Caries in Young Children. [Review]

PURPOSE: Dental caries in preschool children was historically considered to have a unique and more intense pattern of decay and was known by a variety of terms. In 1999, the term early childhood caries (ECC), along with a classification system, was proposed to facilitate epidemiologic research of dental caries in young children. The purpose of this study was to assess the impact of those early childhood caries recommendations on the prevalence and measurement of caries in preschool children.
Examination Survey data collected from 1988 to 1994, 1999 to 2004, and 2011 to 2012 were used to assess ECC prevalence using different operational definitions.

RESULTS: There were 87 articles selected for this review. The term ECC was used in 55 percent of the selected articles as the primary outcome measure. The majority of studies used a cross-section study design, but diagnostic criteria varied greatly. Caries experience in young children may be shifting away from majority of untreated surfaces to a majority of restored surfaces. Little difference was observed by dental surface type in the distribution of decayed and filled surfaces in primary teeth.

CONCLUSIONS: Although the term early childhood caries is widely used, varied use of diagnostic criteria and operational definitions continue to limit comparability across studies. Emerging changes in the proportion of decayed and filled surfaces in the United States also raises questions regarding the ECC case definition limiting our ability to understand the epidemiology of dental caries in preschool children.

Abstract
Adhesives and composite technology have made composite resins and polyacid-modified resin-based composites (compomers) very popular as materials to restore primary and permanent anterior and posterior teeth. More conservative preparations can be performed that maintain more tooth structure due to the adhesive properties of the adhesives used with composites and compomers. Meticulous care in the placement of adhesives and, subsequently, resin-based composites and compomers is necessary to produce long-term satisfactory results. The purpose of this paper is to update the current status in regards to dentin-enamel adhesives in primary teeth.
The debate on amalgam led to its being phased out in some countries. Results of clinical trials report failure rates of amalgams ranging from 12 percent to over 70 percent. Treatment of caries should meet the needs of each particular patient, based on his/her caries risk. In general, for small occlusal lesions, a conservative preventive resin restoration would be more appropriate than the classic Class I amalgam preparation. For proximal lesions, amalgam would be indicated for two-surface Class II preparations that do not extend beyond the line angles of primary teeth. This recommendation might not be appropriate for high-risk patients or restoring primary first molars in children four years old and younger where stainless steel crowns have demonstrated better longevity. Currently, amalgam demonstrates the best clinical success for Class II restorations that extend beyond the proximal line angles of permanent molars. The need to reduce the use of amalgam as a mercury-containing material is inevitable when aiming to reduce environmental contamination. It is important always to praise prevention and constantly search for biologically safe materials regarding health, clinical work, and environment. The purpose of this report was to summarize several factors that affect the effectiveness, advantages, and disadvantages of using dental amalgam in primary teeth.

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Journal Article. Review.

**Date Created**
20150424

**Year of Publication**
2015

**Abstract**
Dental caries continues to be one of the most common chronic diseases of childhood. Medical management of this disease has the potential to decrease the burden of disease in the most vulnerable children and delay the need for surgical intervention. Effective medical management requires early and effective risk assessment to identify individuals at risk prior to disease occurrence. The purpose of this review of clinical decision-making for caries management in children was to translate current knowledge of cariology into clinically relevant concepts and procedures. Patient-specific approaches, such as individual risk assessment, active surveillance, and preventive therapies-supplemented, when necessary, by restorative care-should be emphasized. Clinical findings should inform the type and frequency of therapy recommended on an individual basis. As more is learned about this common complex disorder, it is anticipated that educational strategies for students, practitioners, and families will change to reflect new evidence and risk-based care.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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Title
Dental sealants guidelines development: 2002-2014. [Review]
Source
Local Messages
THIS JOURNAL IS AVAILABLE IN THE BDA LIBRARY, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO:
Abstract
The purpose of this paper was to review the chronology of dental sealant guideline developments and changes in recommendations regarding sealant usage by various state, national, and international organizations between 2002 and 2014. More specific objectives include: (1) review and summarize the findings of systematic evidence-based reviews and recommendations regarding the use of pit and fissure sealants published since the 2002 American Academy of Pediatric Dentistry Pediatric Restorative Dentistry Consensus Conference; (2) identify consistencies and changes in conclusions or recommendations regarding the use of pit and fissure sealants, and differences in the methods used to develop recommendations/guidelines over time; and (3) describe the purpose and scope of current efforts to update American Dental Association 2008 Evidence-based Clinical Recommendations for the Use of Pit and Fissure Sealants. A summary of recommendations based on experts' synthesis of published evidence and recommendations is included.
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Title
Restoring primary anterior teeth: updated for 2014. [Review]
Source
Local Messages
THIS JOURNAL IS AVAILABLE IN THE BDA LIBRARY, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO:
Abstract
The purpose of this paper was to review the current literature associated with the techniques and materials for the restoration of primary anterior teeth and make clinical recommendations based upon the available literature. A variety of esthetic restorative materials are available to utilize for restoring primary incisors. Awareness of the specific strengths, weaknesses, and properties of each material can enhance the clinician's ability to make the best choice of selection for each individual situation. Intracoronal restorations of primary teeth may utilize resin composites, glass ionomer cements, resin-modified ionomers, or polyacid-modified resins. Full coronal restoration of primary incisors may be indicated for a number of reasons. Crowns available for restoration of primary incisors include those that are directly bonded onto the tooth, which generally are a resin material, and crowns that are luted onto the tooth and are either some type of stainless steel or zirconia crown. There is insufficient controlled, clinical data to suggest that one type of restoration is superior to another. Operator preferences, esthetic demands by parents, the child's behavior, the amount of tooth structure remaining, and moisture and hemorrhage control are all variables that affect the decision and ultimate outcome of whatever restorative solution is chosen.
Publication Type
Journal Article. Review.
Date Created
**Effect of Antimicrobial Interventions on the Oral Microbiota Associated with Early Childhood Caries.** [Review]

**Title**
Effect of Antimicrobial Interventions on the Oral Microbiota Associated with Early Childhood Caries. [Review]

**Source**

**Abstract**
PURPOSE: The purposes of this systematic literature review were to identify research-based evidence for an effect of antimicrobial therapeutic approaches on the cariogenic microbiota and early childhood caries (ECC) outcomes; and to review methods used to perform microbial assessments in clinical studies of ECC.

METHODS: Multiple databases were searched; only clinical cohort studies and randomized controlled trials published from 1998 to 2014 were selected. A total of 471 titles and abstracts were identified; 114 studies met the inclusion criteria for a full review, from which 41 studies were included in the meta-analyses.

RESULTS: In most of the reviewed studies, moderate reductions in cariogenic bacterial levels, mainly in mutans streptococci (MS), were demonstrated following the use of antimicrobial agents, but bacterial regrowth occurred and new carious lesions developed once the treatment had ceased, particularly in high-risk children. Relatively consistent findings suggested that anti-cariogenic microbial interventions in mothers significantly reduced MS acquisition by children. However, studies of the long-term benefits of ECC prevention are lacking.

CONCLUSION: Based on the meta-analyses, antimicrobial interventions and treatments show temporary reductions in MS colonization levels. However, there is insufficient evidence to indicate that the approaches used produced sustainable effects on cariogenic microbial colonization or ECC reduction and prevention.

**Resin-based composites are an integral component of contemporary pediatric restorative dentistry. They can be utilized effectively for preventive resin restorations, moderate Class II restorations, Class III restorations, Class IV restorations, Class V**
restorations, and strip crowns. Tooth isolation to prevent contamination is a critical factor, and high-risk children may not be ideal candidates for resin-based composite restorations. Important factors to consider during composite placement are isolation, polymerization shrinkage, and extent of restoration. When utilized correctly, resin-based composites can provide excellent restorations in the primary and permanent dentition. The purpose of this paper was to update previous publications that addressed the use of resin-based composites in children with accepted recommendations through a Pediatric Restorative Dentistry Consensus Conference.

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Unique Identifier: 26063551
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Title: The Clinical, Environmental, and Behavioral Factors That Foster Early Childhood Caries: Evidence for Caries Risk Assessment. [Review]

Abstract:
Caries risk assessment, an essential component of targeted health care delivery for young children, is of paramount importance in the current environment of increasing health care costs and resource constraints. The purpose of this manuscript was to review recent best available evidence behind the factors that influence caries risk assessment and the validity of strategies to assess the caries risk of young children. Moderate to weak evidence supports the following recommendations: (1) Children should have a caries risk assessment done in their first year (or as soon as their first tooth erupts) as part of their overall health assessment, and this should be reassessed periodically over time. (2) Multiple clinical, environmental, and behavioral factors should be considered when assessing caries risk in young children, including factors associated with the primary caregiver. (3) The use of structured forms, although most may not yet be validated, may aid in systematic assessment of multiple caries risk factors and in objective record-keeping. (4) Children from low socioeconomic status groups should be considered at increased risk when developing community preventive programs.

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Title: The use of stainless steel crowns: a systematic literature review. [Review]

Abstract:
PURPOSE: The purpose was to review the published literature on stainless steel crowns (SSCs) from 2002 to the present as an update to an earlier review published in 2002.
RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

METHODS: Included were published papers on clinical studies, case series, and laboratory testing on SSCs (including esthetic SSCs and the Hall technique) in peer-reviewed journals. Study quality and strength of evidence presented were assessed for papers reporting clinical results for SSCs as a primary study outcome using a list of weighting criteria.

RESULTS: Sixty-one papers fulfilled the inclusion criteria (24 papers on 22 clinical studies, three case reports, 21 reviews and surveys, and 13 laboratory testing reports on SSCs and esthetic preformed metal crowns for primary and permanent molar teeth). Ten clinical studies achieved weighting scores ranging from 68 percent to 26 percent, with the two highest scoring studies (68 percent and 63 percent) considered good quality.

CONCLUSIONS: Within the confines of the studies reviewed, primary molar esthetic crowns and SSCs had superior clinical performance as restoratives for posterior primary teeth, and the Hall technique was shown to have validity. No clinical studies were available on zirconia crowns. Further well-designed prospective studies on primary molar esthetic crowns and the Hall technique are needed.

Publication Type
Journal Article. Review.

Date Created
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Relevant section from the document:

**Abstract**

Medicaid data shows that few one- to two-year-olds receive a preventive dental visit, indicating our limited success implementing the existing policy paradigm of dental home establishment by 12 months of age. Few pediatricians refer children for early dental care, few dentists are comfortable seeing children younger than two-years-old, fewer still provide restorative care, and many dentists do not accept Medicaid insurance. These realities mandate new strategies to meet the needs of children and families and effectively tackle early childhood caries (ECC). Primary care medical providers have frequent contact with families, providing opportunities to incorporate oral health promotion and prevention in non-dental settings. Components of such an approach include: screening; risk assessment; oral health counseling; fluoride varnish application; successful referral for children needing intense intervention; policy support; and financial incentives to sustain change. Current research indicates that oral health counseling, particularly motivational interviewing, and fluoride varnish applied in the non-dental setting positively affect patient outcomes. Cost savings may only be realized if ECC prevention programs use: support professionals; integrative disease management; and innovative insurance structures. The purpose of this paper was to examine the evidence for the effectiveness of the provision of oral health preventive services in the primary care setting.

**Title**
The timing of extraction of non-restorable first permanent molars: a systematic review. [Review]

**Source**

**Abstract**
AIM: To identify the ideal timing of first permanent molar extraction to reduce the future need for orthodontic treatment.

**MATERIALS AND METHODS:** A computerised database and subsequent manual search was performed using Medline database, Embase and Ovid, covering the period from January 1946 to February 2013. Two reviewers (JE and ME) extracted the data independently and evaluated if the studies matched the inclusion criteria. Inclusion criteria were specification of the chronological age or dental developmental stage at the time of extraction, no treatment in between, classification of the treatment result into perfect, good, average and poor. The search was limited to human studies and no language limitations were set.

**RESULTS:** The search strategy resulted in 18 full-text articles, of which 6 met the inclusion criteria. By pooling the data from mandibular sites, good to perfect clinical outcome was estimated in 72% (95% confidence interval 63%-82%). Extractions at the age of 8-10.5 years tended to show better spontaneous clinical outcomes compared to the other age groups. By pooling the data from mandibular sites, extractions performed at the age of 8-10.5 and 10.5-11.5 years showed significantly superior spontaneous clinical outcome with a probability of 50% and 59% likelihood, respectively, to achieve good to perfect clinical result (p<0.05) compared to the other age groups (<8 years of age: 34%, >11.5 years of age: 44%).

**CONCLUSION:** Prevention of complications after first permanent molars extractions is an important issue. The overall success rate of spontaneous clinical outcome for mandibular extraction of first permanent molars was superior to mandibular extraction. Extractions of mandibular first permanent molars should be performed between 8 and 11.5 years of age in order to achieve a good spontaneous clinical outcome. For the extraction in the maxilla, no firm conclusions concerning the ideal extraction timing could be drawn.

**Publication Type**
Journal Article. Review.

**Date Created**
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**Year of Publication**
2015
Dexmedetomidine: A Review of a Newer Sedative in Dentistry. [Review]

Abstract
UNLABELLED: Dexmedetomidine is a central alpha-2 agonist, similar to Clonidine, but 8 times more specific for the central alpha-2 receptor which causes sedation with minimal depression of respiration, making it safe for sedation during procedures. It is widely used in the field of medicine for many procedures especially premedication, awake intubation, and sedation of patients in intensive care units and pediatric procedural sedation.

OBJECTIVE: To do a systematic review of the pharmacology, pharmacodynamics, as well as the usage of newer sedative drug-Dexmedetomidine in dentistry.

STUDY DESIGN: The search for articles was conducted in Pub Med, including the articles published in English until Oct 2014. Both animal and human studies were included using the key words, “Dexmedetomidine”, “Dexmedetomidine in sedation”, “Dexmedetomidine in Dentistry”, and “Dexmedetomidine in Pediatric dentistry”. The Articles obtained were checked for their quality methodology and inference of the studies and selected for review.

RESULTS: Initial search retrieved 2436 articles, out of which 44 articles were on the subject of Dexmedetomidine in dentistry. Five of which articles were on the usage of Dexmedetomidine in pediatric dentistry. These studies were included in systematic review.

CONCLUSION: The study revealed that Dexmedetomidine being a new drug with its added advantages makes a better choice for sedation in dentistry. But with limited studies on Dexmedetomidine, the recommendation to use the drug exclusively is still under debate.

Publication Type
Journal Article. Review.

Date Created
20151110

Year of Publication
2015
Inflammatory dentigerous cyst of mandibular first premolar associated with endodontically treated primary first molar: a rare case report. [Review]  


Abstract  
AIM: Inflammatory dentigerous cysts usually occur in the mixed dentition. It has been reported that inflammatory lesions from the root area of a deciduous tooth bring about the development of dentigerous cysts around the unerupted permanent tooth bud. Endodontic treatment is a common and successful procedure for periapical inflammation in children. An inflammatory dentigerous cyst can occur in conjunction with endodontically treated primary tooth.  

CASE REPORT: This article reports a case of 6 years and 6 months old boy, with a single, well-defined, unilocular, radiolucent area enclosing the first right unerupted mandibular premolar, accidentally discovered on the panoramic radiograph. The first right primary molar had received a root canal treatment 18 months prior. Clinical findings combined with radiographic and microscopic examinations confirmed the diagnosis of inflammatory dentigerous cyst. As treatment, enucleation of the cyst with removal of the involved permanent tooth was chosen and a removable partial denture was supplied to the patient after surgery. The 5-year follow-up revealed good healing of the bony lesion and displaced teeth.  

CONCLUSION: This case presented a severe and rare complication of endodontically treated primary tooth, and the recommendation includes: (1) early diagnosis of dentigerous cysts, which is essential to prevent extensive treatment; (2) more information on the adverse side effects of an endodontic treatment should be given to patients and parents; (3) patients should be informed about the importance of follow-ups and radiographic follow-up should be routinised.

This article presents a summary of incident management guidelines for traumatically injured teeth during orthodontic treatment. In addition, treatment of a 17-year-old patient with traumatic extrusion and palatal displacement of the permanent maxillary incisors while undergoing active orthodontic treatment is reported.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

2015

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MEDLINE

Authors
Mittal N; Goyal A; Jain K; Gauba K.

Title
Pediatric Dental Sedation Research: Where Do We Stand Today?. [Review]

Source

Abstract
Despite the voluminous literature addressing the safety and efficacy of various sedative agents in the pediatric dental setting, the quality literature to form evidence based pediatric dental sedation practice is not available. Our search through PUBMED showed that during 1985-2012, a total of 184 original research papers on pediatric dental sedation were reported, and midazolam clearly dominated with 88 trials on this agent. Despite these large numbers of papers, Cochrane Review was able to pool a weak evidence in favor of midazolam. Data pooling from five heterogeneous high risk of bias trials showed that oral midazolam is associated with more cooperative behavior when compared to a placebo. Further, a very weak evidence regarding efficacy of nitrous oxide was collected from two trials, which could not be pooled. These findings draw attention to the need to address the shortcomings in the current state of pediatric dental sedation research. The present article has been focused on the current status of pediatric dental sedation research, and the limitations in the current research methodology. This paper also suggests recommendations for future research in the field of pediatric dental sedation.

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Journal Article. Review.

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Authors
Rakhshan V.

Title
Meta-Analysis of Observational Studies on the Most Commonly Missing Permanent Dentition (Excluding the Third Molars) in Non-Syndromic Dental Patients or Randomly-Selected Subjects, and the Factors Affecting the Observed Rates. [Review]

Source

Abstract
PURPOSE: The aim of this study was to summarize the literature on the most frequently missing permanent teeth excluding the third molars.

STUDY DESIGN: A search was conducted to find all the available literature (in various scientific and general databases) regarding the most commonly missing teeth with respect to ethnicity and time, as well as factors biasing this outcome. Quality assessment was done to exclude studies with inconsistent information, poor designs, or data pertaining to syndromic cases or the third molars. The role of biasing factors was as well quantitatively assessed using statistical analyses [Q-test, Egger regression, Spearman correlation coefficient, multiple linear regression, Welch t-test] (alpha=0.05).

RESULTS: A total of 81 reports was included. The meta-sample was heterogeneous (P=0.000, Q-test). No significant publication bias was detected (P>0.1, Egger regression). The mandibular second premolar was reported as the most commonly missing tooth in most studies, followed by the maxillary lateral (the most commonly missing in the rest). In terms of the missing share of each tooth percent of all missing teeth, the mandibular second premolar and incisors are more likely to be absent, followed by the maxillary second premolar and lateral. The absence of different teeth can be affected by the ethnicity, sample types (epidemiological or dental patients), sample sizes (only in the case of bimaxillary second premolars), and the minimum ages of pooled subjects (only in the case of the maxillary lateral and the mandibular second premolar).

CONCLUSIONS: Since enrolling younger patients can bias the results, older patients should be sampled.

Publication Type

Date Created
Abstract

BACKGROUND: There has been significant advances in the understanding of preventive restorative procedures regarding the advantages and disadvantages for restorative procedures; the evidence for conservative techniques for deep carious lesions; the effectiveness of pit and fissure sealants; and the evidence for use of resin infiltration techniques.

AIM: The intent of this review is to help practitioners use evidence to make decisions regarding preventive restorative dentistry in children and young adolescents.

STUDY DESIGN: This evidence-based review appraises the literature, primarily between the years 1995-2013, on preventive restorative strategies. The evidence was graded as to strong evidence, evidence in favor, or expert opinion by consensus of authors Results: The preventive strategy for dental caries includes individualized assessment of disease progression and management with appropriate preventive and restorative therapy. There is strong evidence that restoration of teeth with incomplete caries excavation results in fewer signs and symptoms of pulpal disease than complete excavation. There is strong evidence that sealants should be placed on pit and fissure surfaces judged to be at risk for dental caries, and surfaces that already exhibit incipient, non-cavitated carious lesions. There is evidence in favor for resin infiltration to improve the clinical appearance of white spot lesions.

CONCLUSIONS: Substantial evidence exists in the literature regarding the value of preventive dental restorative procedures.
RECENT REVIEWS RELATED TO PAEDIATRIC DENTISTRY

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Title
Evidence-based Update of Pediatric Dental Restorative Procedures: Dental Materials. [Review]
Source
Local Messages
THIS JOURNAL IS AVAILABLE IN THE BDA LIBRARY, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO:
Abstract
BACKGROUND: The science of dental materials and restorative care in children and adolescent is constantly evolving, and the ongoing search for ideal restorative materials has led to plethora of research.
AIM: To provide an evidence base to assist dental practitioners choose appropriate restorative care for children and adolescents.
STUDY DESIGN: This evidence-based review appraises this literature, primarily between the years 1995-2013, for efficacy of dental amalgam, composites, glass ionomer cements, compomers, preformed metal crowns and anterior esthetic restorations. The assessment of evidence for each dental material was based on a strong evidence, evidence in favor, expert opinion, and evidence against by consensus of the authors.
RESULTS: There is varying level of evidence for the use of restorative materials like amalgam, composites, glass ionomers, resin-modified glass-ionomers, compomers, stainless steel crowns and anterior crowns for both primary and permanent teeth.
CONCLUSIONS: A substantial amount data is available on restorative materials used in pediatric dentistry; however, there exists substantial evidence from systematic reviews and randomized clinical trials and clinicians need to examine and understand the available literature evidence carefully to aid them in clinical decision making.
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Title
Dental notation for primary teeth: a review and suggestion of a novel system. [Review]
Source
Local Messages
ISSUES HELD AT THE BDA LIBRARY FROM 2002 ONWARDS, TO REQUEST THIS ARTICLE FROM THE LIBRARY GO TO:
Abstract
BACKGROUND: Tooth designation systems are routinely used in dental practice, for identification of teeth, recording dental data and communication among dental professionals. There are various dental notations systems for the primary and permanent dentition. The most popular are the Zsigmondy-Palmer system, the Universal Numbering System, and the FDI system. Others includes the Victor Haderup system, the Woelfel system, and the MICAP system. The majority of dental notations are focused on permanent teeth and are modified for primary teeth, even though the latter erupt before the permanent dentition.

CONCLUSION: Advantages and disadvantages of notations for primary dentition are discussed and compared to a new alphanumeric system for primary teeth which is considered simple and convenient.

Abstract
BACKGROUND: Agenesis of mandibular incisors can lead to compromised dental and facial aesthetics and therefore requires appropriate treatment. When retained primary incisors are associated to this condition, a medium-term restoration may be provided before any definitive treatment to provide aesthetic relief to the young patient.

CASE REPORT: The aim of this paper is to discuss the aesthetic management of a case with bilateral congenital agenesis of permanent incisors and retained primary incisors, which were successfully treated with direct composite restorations.

CONCLUSION: This appears a viable technique that restores function and aesthetics with a very conservative approach.

Abstract
BACKGROUND: Agenesis of mandibular incisors can lead to compromised dental and facial aesthetics and therefore requires appropriate treatment. When retained primary incisors are associated to this condition, a medium-term restoration may be provided before any definitive treatment to provide aesthetic relief to the young patient.

CASE REPORT: The aim of this paper is to discuss the aesthetic management of a case with bilateral congenital agenesis of permanent incisors and retained primary incisors, which were successfully treated with direct composite restorations.

CONCLUSION: This appears a viable technique that restores function and aesthetics with a very conservative approach.
Biomarkers are functional elements at the cellular or molecular level, playing important roles in health and disease. The dentin-pulp complex of the tooth houses several biomarkers at different stages of development, and a lack of these biomarkers results in developmental disorders. Furthermore, biomarkers play a very important role in the pathogenesis of dental caries, pulpal and periapical pathoses in two ways - they are essential elements in the pathological process and their detection helps in accurate diagnosis of the pathological condition. The aim of this paper is to review the literature regarding the important biomarkers involved in the development of the dentin-pulp complex and in the pathological conditions involving the dentin-pulp complex.

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**Title**
Contemporary behavior management techniques in clinical pediatric dentistry: out with the old and in with the new?. [Review]

**Source**

**Abstract**
Effective behavior management guides children through the complex social context of dentistry utilizing techniques based on a current understanding of the social, emotional, and cognitive development of children. Behavior management techniques facilitate effective communication and establish social and behavioral guidelines for the dental environment. Contemporary parenting styles, expectations, and attitudes of modern parents and society have influenced the use of behavior management techniques with a prevailing emphasis on communicative techniques and pharmacological management over aversive techniques.

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Journal Article. Review.

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2015

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**Title**
A systematic map of systematic reviews in pediatric dentistry--what do we really know?.

**Source**

**Abstract**
OBJECTIVES: To identify, appraise and summarize existing knowledge and knowledge gaps in practice-relevant questions in pediatric dentistry.

METHODS: A systematic mapping of systematic reviews was undertaken for domains considered important in daily clinical practice. The literature search covered questions in the following domains: behavior management problems/dental anxiety; caries risk assessment and caries detection including radiographic technologies; prevention and non-operative treatment of caries in
primary and young permanent teeth; operative treatment of caries in primary and young permanent teeth; prevention and treatment of periodontal disease; management of tooth developmental and mineralization disturbances; prevention and treatment of oral conditions in children with chronic diseases/developmental disturbances/obesity; diagnosis, prevention and treatment of dental erosion and tooth wear; treatment of traumatic injuries in primary and young permanent teeth and cost-effectiveness of these interventions. Abstracts and full text reviews were assessed independently by two reviewers and any differences were solved by consensus. AMSTAR was used to assess the risk of bias of each included systematic review. Reviews judged as having a low or moderate risk of bias were used to formulate existing knowledge and knowledge gaps.

RESULTS: Out of 81 systematic reviews meeting the inclusion criteria, 38 were judged to have a low or moderate risk of bias. Half of them concerned caries prevention. The quality of evidence was high for a caries-preventive effect of daily use of fluoride toothpaste and moderate for fissure sealing with resin-based materials. For the rest the quality of evidence for the effects of interventions was low or very low.

CONCLUSION: There is an urgent need for primary clinical research of good quality in most clinically-relevant domains in pediatric dentistry.

OBJECTIVE: This study describes processes used to develop and test pediatric oral healthcare quality measures and provides recommendations for implementation.

METHODS: At the request of the Centers for Medicare and Medicaid Services, the Dental Quality Alliance (DQA) was formed in 2008 as a multi-stakeholder group to develop oral healthcare quality measures. For its initial focus on pediatric care, measure development processes included a literature review and environmental scan to identify relevant measure concepts, which were rated on importance, feasibility, and validity using the RAND/UCLA modified Delphi approach. These measure concepts and a gap assessment led to the development of a proposed set of measures that were tested for feasibility, reliability, and validity.

RESULTS: Of 112 measure concepts identified, 59 met inclusion criteria to undergo formal rating. Twenty-one of 59 measure concepts were rated as "high scoring." Subsequently, 11 quality and related care delivery measures comprising a proposed pediatric starter set were developed and tested; 10 measures met feasibility, reliability, and validity criteria and were approved by the DQA stakeholder membership. These measures are currently being incorporated into Medicaid, Children's Health Insurance Program, and commercial quality improvement programs.

CONCLUSIONS: Broad stakeholder engagement, rigorous measure development and testing processes, and regular opportunities for public input contributed to the development and validation of the first set of fully specified and tested pediatric oral health care measures.
healthcare quality measures, which have high feasibility for implementation in both public and private sectors. This achievement marks an important essential step toward improving oral healthcare and oral health outcomes for children.

**Publication Details**

**Title:** Publication bias & small-study effects in pediatric dentistry meta-analyses.


**Abstract**

**OBJECTIVES:** The aim of this study was to examine the presence and extent of publication bias and small-study effects in meta-analyses (MAs) investigating pediatric dentistry-related subjects.

**METHODS:** Following a literature search, 46 MAs including 882 studies were analyzed qualitatively. Of these, 39 provided enough data to be re-analyzed. Publication bias was assessed with the following methods: contour-enhanced funnel plots, Begg and Mazumdar's rank correlation and Egger's linear regression tests, Rosenthal's failsafe N, and Duval and Tweedie's "trim and fill" procedure.

**RESULTS:** Only a few MAs adequately assessed the existence and effect of publication bias. Inspection of the funnel plots indicated asymmetry, which was confirmed by Begg-Mazumdar's test in 18% and by Egger's test in 33% of the MAs. According to Rosenthal's criterion, 80% of the MAs were robust, while adjusted effects with unpublished studies differed from little to great from the unadjusted ones. Pooling of the Egger's intercepts indicated that evidence of asymmetry was found in the pediatric dental literature, which was accentuated in dental journals and in diagnostic MAs. Since indications of small-study effects and publication bias in pediatric dentistry were found, the influence of small or missing trials on estimated treatment effects should be routinely assessed in future MAs.

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