

Questions and answers in Evidence-based Dentistry volume 10

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As in previous years, we highlight here the guidelines, questions and answers addressed by summaries in Evidence-based Dentistry.¹⁻⁷

Evidence levels⁸ are only given for those papers that achieved level 3A and above.

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Dental evidence-based topics (DEBT)			
Topic area	Question	Answer	Page
Caries	When attempting to prevent dental caries in elderly people who live in residential care homes, what is the effectiveness and relative cost benefit of high-concentration fluoride toothpaste compared with fluoride varnish application?	For elderly populations in residential care, in areas with low levels of fluoride in drinking water, who are assessed as being at increased risk of dental caries: toothbrushing carried out twice daily with a 2800 ppm fluoride paste, following the manufacturer's instructions regarding quantity, is likely to give improved caries control over standard toothpaste while avoiding any risk of toxicity. On completion of brushing, the mouth should not be rinsed, but as much paste as possible should be expectorated. In addition, although costly, consideration could be given to applying 5% sodium fluoride varnish to the same population three to four times per year.	83-87

Summaries				
Topic	Question	Answer	Evidence level	Page
Caries	Are polyol-containing chewing gums effective in reducing dental decay?	There is consistent evidence to support the use of xylitol- and sorbitol-containing chewing gum to prevent dental caries.	1a	10-11
	Are fluoride interventions effective for the prevention of root caries in adults?	The available studies suggest that increasing the regular daily delivery of fluoride has a beneficial effect, reducing root caries.	1b	12
	Is SDF more effective than fluoride varnish in preventing caries?	Results suggest that SDF is more effective than fluoride varnish, and may be a valuable caries-preventive intervention.	1b	68
	Can an oral health promotion programme starting during pregnancy prevent ECC in young children?	A programme based on repeated rounds of anticipatory guidance initiated during the mother's pregnancy was successful in reducing the incidence of ECC.	1b	100-101
	What are the risk determinants of ECC in children?	This case-control study showed that children of different socioeconomic backgrounds who have ECC share the common risk indicators of visible plaque, consumption of sugary snacks and presence of <i>Streptococcus mutans</i> . Additional risk indicators in children from childcare facilities were enamel hypoplasia, difficulty in cleaning the child's teeth, sweetened drinks and maternal anxiety, whereas ethnicity and mothers' access to pension or healthcare cards were specific to the public hospital cases.	n/a	37-38
	Is a daily CHX mouthrinse effective at reducing caries in a community-dwelling elderly population?	Findings suggest that regular rinsing with CHX does not have a substantial effect on the preservation of sound tooth structure in older adults.	1b	13-14
Delivery of care	What is the effectiveness and cost-effectiveness of sedation vs general anaesthesia for the provision of dental treatment for under 18-year olds?	RCT are required that compare the use of dental general anaesthesia with sedation, to quantify differences such as morbidity and cost.	n/a	69
Dental public health	Does improved oral hygiene lead to reductions in cases of pneumonia and respiratory tract infections in elderly people in hospitals and nursing homes?	RCT provide evidence that mechanical oral hygiene decreases mortality risk from pneumonia and seems to have a clinically relevant preventive effect on nonfatal pneumonia in independent elderly individuals.	1a	46
	Does the use of infant formula compared with the use of breast or cow's milk increase the risk of fluorosis?	Infant formula consumption may be associated with an increased risk of developing at least some detectable level of enamel fluorosis, but this depends on the level of fluoride in the water supply. The evidence that the fluoride in the infant formula caused enamel fluorosis was weak, as other mechanisms could explain the observed association.	n/a	73

Endodontics	When individuals undergo root canal treatment, does a single-visit approach result in a higher frequency of post-treatment problems than a multiple-visit one?	Compelling evidence is lacking to indicate any significantly different prevalence of postoperative pain or flare-up following either single- or multiple-visit root canal treatment.	2b	16
	For orthograde root canal treatment of permanent teeth, is hand instrumentation more effective than ultrasonic instrumentation when used alone or as an adjunctive procedure?	This review illustrates the current lack of published or ongoing RCT, and the lack of availability of high-level evidence dealing with clinically relevant outcomes, for the effectiveness of ultrasonic instrumentation used alone or as an adjunct to hand instrumentation for orthograde root canal treatment.	n/a	76
Oral cancer	Is low socioeconomic status associated with increased oral cancer risk?	Oral cancer risk associated with low socioeconomic status is significant and related to lifestyle risk factors.	3a	4–5
	What are the lifestyle, occupational and genetic risk factors for head and neck and oesophageal cancers?	These results indicate that periodontal disease (as indicated by poor condition of the mouth and missing teeth) and daily mouthwash use may be independent causes of cancers of the head, neck and oesophagus.	3a	6–7
Oral medicine	What interventions are effective for the prevention or treatment, or both, of HSV in patients receiving treatment for cancer?	There is evidence that aciclovir is effective at preventing and treating HSV infections. There is no evidence that valaciclovir is more efficacious than aciclovir, or that a high dose of valaciclovir is better than a low dose of valaciclovir. There is evidence that, as a prophylaxis, placebo is more efficacious than prostaglandin E. In all included trials the risk of bias was unclear.	1a	116–117
	Are sublingual vitamin B12 tablets effective in reducing the frequency of recurrent aphthous stomatitis episodes?	Vitamin B12 treatment, which is simple, inexpensive and low-risk, seems to be effective for patients suffering from recurrent aphthous stomatitis, regardless of the serum vitamin B12 level.	1b	114–115
	What treatments are effective in managing restricted jaw opening or movement in people who have oral submucous fibrosis?	The lack of reliable evidence for the effectiveness of any specific interventions for the management of oral submucous fibrosis is illustrated by the paucity, and poor methodological quality, of trials retrieved for this review.	2b	8–9
Oral surgery	In people taking warfarin and who are undergoing elective dental procedures, what is the risk of bleeding for patients who continue warfarin therapy compared with those whose dose is reduced or interrupted?	Continuing the regular dose of warfarin therapy does not seem to confer an increased risk of bleeding compared with discontinuing or modifying the warfarin dose in people undergoing minor dental procedures.	1a	52
	Is CHX gel more effective than CHX rinse in reducing alveolar osteitis in mandibular third molar surgery?	It was concluded that the topical application of bioadhesive CHX gel to the surgical wound during the postoperative week may decrease the incidence of alveolar osteitis after extraction of the mandibular third molars. In view of the unexplained results of the study, the conclusions should be viewed with discretion.	1b	54–55
	Is botulinum toxin safe to be used prophylactically in people undergoing dental implant therapy?	At present there are no studies that demonstrate any beneficial or adverse effects of botulinum toxin use in dental implantology.	2b	53
	How much relapse occurs after people undergo bilateral sagittal split osteotomy with rigid internal fixation?	The evidence of variation in relapse rates between rigid internal fixation methods appear relatively equivocal at the present time. This review is useful in establishing the current position and highlighting the need for further high quality, prospective RCT in this area.	2b	81–82
Orthodontics	In people who are undergoing orthodontic treatment, are oral health promotion interventions effective in improving oral hygiene and gingival health?	An oral health promotion programme for people undergoing fixed appliance orthodontic treatment produces a short-term reduction (up to 5 months) in plaque and improvement in gingival health. No particular oral health promotion method produced a greater short-term benefit to periodontal health during fixed appliance orthodontic treatment. Further studies using appropriate methods and in particular longer follow up periods are required.	1a	111–112
	In the first 6 months after active orthodontic treatment are vacuum-formed retainers more effective than Hawley retainers?	In the 6 months following debond, vacuum-formed retainers are more effective than Hawley retainers in maintaining labial segment alignment.	1b	47
	What factors effect the use of mini-implants for direct or indirect orthodontic anchorage?	Although temporary anchorage device use in orthodontic treatment has increased, there are still important clinical and biological questions to be answered regarding the use of mini-implants for orthodontic anchorage.	2a	113
	What are the effects of the lip bumper on mandibular arch dimensions in adolescents?	The results showed increases in arch dimensions, including a greater arch length. This was attributed to incisor proclination, distalisation, and distal tipping of the molars. There were also increases in arch width and intercanine and deciduous intermolar or premolar distances. The long-term stability of the effects of the lip bumper need to be elucidated.	2b	48–49

TOOLBOX

	Can an individual's medication affect the rate of orthodontic tooth movement?	The authors identified a need for more well-designed studies on the effects of various types of medication on orthodontic tooth movement.	n/a	50–51
	Does extraction of maxillary primary canine teeth have a positive effect on the eruption of palatally displaced permanent canines?	There is currently no strong evidence to justify the prophylactic extraction of deciduous canines in apparently palatally displaced canines.	n/a	102
Paediatric dentistry	How long should we wait for a pulp extirpation after a replantation of an avulsed permanent tooth?	There is clinical evidence for an association between pulp extirpation performed after 14 days following replantation and the development of inflammatory resorption. This investigation supports the current clinical guidelines for pulp extirpation within 10–14 days of replantation.	2b	72
	What are the most likely effects of traumatic intrusion of primary teeth on the permanent successor teeth?	The majority of intruded primary incisors where immediate extraction is not indicated will re-erupt if simply observed. Just over half of permanent successional incisors are likely to have one or more developmental defects.	2b	70–71
	Do systemic antibiotics prescribed at the time of replantation of an avulsed permanent tooth improve the chances of periodontal healing?	There was inconclusive evidence for an association between systemic antibiotic therapy and an increased likelihood of acceptable periodontal healing.	2b	103
	For how long should re-implanted avulsed teeth be splinted?	The evidence appears inconclusive for any association between short-term splinting and increased likelihood of functional periodontal healing, acceptable healing, or decreased development of replacement resorption.	2b	104
Periodontal disease	In the treatment of chronic periodontitis, is full-mouth debridement and/or disinfection more effective than quadrant scaling and root planing?	The review suggests that mechanical or nonsurgical periodontal treatment is effective, but showed no difference in the periodontal clinical outcome measures between the full-mouth debridement and quadrant approaches.	1a	17
	Does periodontal treatment have an effect on glycaemic control in diabetic patients?	This meta-analysis suggests that periodontal treatment could improve glycaemic control. Nevertheless, these results should be viewed with caution because of a lack of robustness and deficiencies in the design of some of the studies included.	1a	20–21
	Does oral irrigation have beneficial effects in reducing dental plaque and improving gingival health over regular oral hygiene or toothbrushing only?	This systematic review suggests that oral irrigation as an adjunct to toothbrushing does not have a beneficial effect in reducing dental plaque, but it may improve gingival health.	1a	40–41
	Is using woodsticks as an adjunct to toothbrushing more effective at reducing periodontal inflammation than toothbrushing alone?	With the limited data within this review, it is difficult to draw any meaningful conclusions on the efficacy of woodsticks.	1a	43
	Is the use of a cetylpyridinium chloride-containing mouthrinse as an adjunct to toothbrushing more effective than toothbrushing alone in preventing plaque accumulation and gingivitis?	The quality of the available evidence means that the use of cetylpyridinium chloride mouthrinses as an adjunct to mechanical plaque control should be considered with caution.	1a	44
	Does smoking affect the prognosis of dental implants?	The risk of implant failures and biological complications with and without accompanying augmentation procedures was found to be significantly increased in smokers compared with nonsmokers.	1b	79–80
	Is periodontal disease an independent novel risk factor for incident CHD?	Periodontal disease is a risk factor or marker for CHD that is independent of traditional CHD risk factors, including socioeconomic status. Further research is warranted in this important area of public health.	2a	22
	Is use of interdental brushes as an adjunct to toothbrushing more effective than toothbrushing alone?	The evidence suggests that interdental brush use as an adjunct to toothbrushing removes more dental plaque than brushing alone, being even more effective than dental floss or woodsticks in removing dental plaque. The evidence available for the effect on gingival inflammation is less conclusive. The reduction of pocket depth after the use of the interdental brush is more pronounced than with floss.	2a	74
	What is the association between long-term smoking and periodontal disease?	Current and long-term smoking in young adults is detrimental to periodontal health, but smoking cessation may be associated with a relatively rapid improvement in the periodontium.	2b	18–19
	Is psychological stress a risk factor for periodontal disease?	Within the limitations of this systematic review, the majority of studies showed a positive relationship between stress or psychological factors and periodontal disease.	3a	42

	Do manual or electronic probes produce the most reproducible measurements of clinical attachment level in periodontitis patients?	Manual and electronic probes were of similar reliability when used to measure clinical attachment level in individuals who had untreated periodontitis and when used by a calibrated examiner, but this finding is not supported by strong evidence.	n/a	39
	How effective is the Vector (Dürr Dental, Bietigheim-Bissingen, Germany) ultrasonic scaler on human teeth in vitro and in vivo compared with conventional ultrasonic instruments and/ or hand instrumentation?	The vector ultrasonic scaler may be used as a gentle root debridement device for supportive periodontal therapy, as an alternative to other conventional ultrasonic systems. The operator should consider, however, the extra time needed for instrumentation.	n/a	45
	Does the treatment of periodontal disease during pregnancy reduce the incidence of preterm birth?	Periodontal therapy did not reduce the incidence of preterm delivery.	1b	105
Restorative dentistry	When people require dental implants in the aesthetic zone, is there any difference in the outcome measures between immediate, early and conventionally placed implants?	The selected studies provide promising short-term results for immediate, early and conventional single-implants in the aesthetic zone. Important parameters, such as aesthetic outcome, peri-implant structures and patient satisfaction, however, still need further evaluation. The outcome measures could not be fully evaluated when comparing immediate, early and conventional implants because of the lack of RCT.	1a	77–78
	What is the safest and most effective method of cleaning removable dentures?	There is a lack of evidence about the comparative effectiveness of the different denture cleaning methods considered in this review.	1a	109
	Are nanohybrid composite restorations more effective than fine hybrid composites in class II cavities?	Both materials performed satisfactorily over the 4-year observation period.	1b	107
	Does the use of bonding agents improve the performance and longevity of dental amalgam restorations?	There is no evidence to either claim or refute a difference in survival between bonded and non-bonded amalgam restorations.	2a	106
	What are the survival rates of fibre-reinforced resin-bonded fixed partial dentures?	The majority of the studies showed a survival rate of approx. 72% after 2–5 years. This study highlights the need for good-quality RCT.	n/a	75
	Does listening to music reduce anxiety in patients undergoing root canal treatment?	Music may reduce anxiety during invasive procedures in adolescents and adults.	1b	15
Temporomandibular disorders	Is the nociceptive trigeminal inhibition tension suppression system device effective in the treatment of temporomandibular disorders and bruxism?	The use of nociceptive trigeminal inhibition tension suppression system splint may be justified in certain circumstances.	1a	23
	Is arthrocentesis and lavage an effective treatment for TMJ disorders?	There is insufficient, consistent evidence to either support or refute the use of arthrocentesis and lavage for treating patients with TMJ disorders.	2a	110
	Are tricyclic antidepressants effective in the treatment of TMJ disorders?	There is evidence, based on inconsistent or limited-quality data, for the use of tricyclic antidepressants in the treatment of TMJ disorders.	2b	56
SDF, Silver diamine fluoride; ECC, early childhood caries; CHX, chlorhexidine; RCT, randomised controlled trial; HSV, herpes simplex virus; CHD, coronary heart disease; TMJ, temporomandibular joint.				

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