

Questions and answers in EBD Volume 16

Derek Richards

Editor, Evidence-based Dentistry

As in previous years we are highlighting the guidelines, questions and answers addressed by summaries in *Evidence-based Dentistry*. Evidence levels are only given for those papers achieving level 3A and above.

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Summaries

Topic	Question	Answer	Evidence level	Page
Caries				
	What treatments are effective in preventing or arresting root caries lesions?	Toothpaste containing 5,000 ppm fluoride and professionally applied chlorhexidine or silver diamine fluoride varnishes may inactivate existing and/or reduce the initiation of root caries.	1A	10-11
	Does maternal use of xylitol gum reduce transmission of Mutans streptococci (MS) and prevent caries in children?	Xylitol consumption by mothers with high MS levels was associated with a significant reduction in the mother-to-child transmission of salivary MS. These findings are based on evidence that may have suffered from biases.	1A	41-42
	Are fluoride gels safe and effective at preventing caries?	There is moderate quality evidence that fluoride gels provide a 28% reduction in decayed missing and filled teeth.	1A	108-109
	Does the use of fluoride-releasing fissure sealants on permanent molars reduce the caries increment on the distal surface of the second primary molars?	The authors concluded that glass ionomer cements and resin-based fluoride sealants provide added protection to the distal surface of neighbouring second primary molars.	1B	12
	Is Nano Silver Fluoride (NSF) effective for preventing and arresting active caries in children?	This study appears to show that NSF may provide some benefit when considering prevention of caries, especially in deprived communities or non-clinical settings, due to its cost, preparation and application methods.	1B	8-9
	How effective are different xylitol-containing products for the prevention of dental caries in children and adults?	There is some low quality evidence that the use of fluoride toothpaste containing xylitol may be more effective than fluoride only toothpaste in caries prevention in children.	2A	37-38
	Are chlorhexidine-containing oral products (toothpastes, mouthrinses, varnishes, gels, gums and sprays) effective in preventing caries in children and adolescents?	At present there is little evidence that chlorhexidine could provide an alternative approach to caries prevention as there is good evidence for the use of topical fluorides in varnish, toothpastes, gels and mouthrinses as well as fissure sealants, so these approaches should be prioritised for caries prevention.	2A	43-44
	Are slow-release fluoride devices effective for caries prevention?	There is insufficient evidence to determine the caries-inhibiting effect of slow-release fluoride glass beads.	2B	45
	Does drinking fluoridated milk prevent dental caries in children?	There is low quality evidence to suggest fluoridated milk may be beneficial to schoolchildren, contributing to a substantial reduction in dental caries in primary teeth.	2B	99
	What factors determine whether dentists are more or less likely to provide caries prevention for their patients?	The evidence seems to indicate that further education and training coupled with a fairer pay scheme would be a reasonable approach to change the balance in favour of the provision of dental caries preventive measures by dentists.	N/A	6-7
	Is there any scientific evidence of the transmission of Mutans Streptococcus (MS) from mother to child?	Genetic tests demonstrate a relationship between the MS within mothers, and their children, showing that most children derive at least one of their oral pathogenic bacteria from their primary carers.	N/A	39-40
	What is the association between developmental defects on enamel and dental caries experience in the permanent dentition?	The results demonstrate a positive association between caries experience and enamel defects, which could be considered a potential predictor for dental caries. However, the only study design type included was cross-sectional, so there is a need to carry out further investigations into the association and the directionality of the relationship.	N/A	72-73
Dental implants				
	Is there a beneficial or harmful effect from the use of systemic antibiotic prophylaxis for dental implant placement?	The evidence from the meta-analysis shows statistically significant results for the use of preoperative antibiotics, specifically amoxicillin, however the clinical significance is debatable.	1A	50-51
	Does platform switching of dental implants improve outcomes?	The results of the present study suggest that there is significantly less marginal bone loss at implants with platform-switching than on implants with platform-matching. The results of this review should be interpreted with caution.	1A	84-85

	How do the survival rate and post-operative complications of non-submerged immediately loaded dental implants compare with those of submerged delayed loaded implants?	It appears that delaying the loading of clinical implants increases their overall success rate.	1A	112-113
	Does an antibiotic prophylaxis regimen prior to implant placement have any effect on the prevention of implant failure rate and post-operative infection in a healthy patient?	The evidence from the review suggests that a prophylactic antibiotic regimen reduces failure of dental implants placed under ordinary conditions. However, there are no apparent differences in the occurrence of post-operative infections in patients receiving or not receiving antibiotics. The results have to be interpreted with caution due to the presence of several confounding factors in the studies.	2A	52-53
	What is the survival rate of dental implants, postoperative infection, and marginal bone loss of dental implants inserted in fresh extraction sockets compared with healed sites?	Within the limitations of the existing investigations, the present study suggests that the insertion of dental implants in fresh extraction sockets increases implant failure rates.	2B	54-55
Dental Public Health				
	How effective are behavioural and pharmacotherapeutic interventions in treating smokeless tobacco use?	Varenicline, nicotine lozenges and behavioural interventions may help ST users to quit. Confidence in results for nicotine lozenges is limited. Confidence in the size of effect from behavioural interventions is limited because the components of behavioural interventions that contribute to their impact are not clear.	1A	104-105
Dental trauma				
	Is there an association between overjet and traumatic dental injuries?	The present meta-analysis of observational studies showed that large overjet may double or even triple the risk for TDI to anterior primary and permanent teeth and that, at global level, a large overjet is partly responsible for 100-300 million TDIs.	3A	56
	What socioeconomic factors are associated with traumatic dental injury (TDI)?	There may be an association between income and TDI but more research is needed to confirm this.	N/A	120-121
Effective practice and organisation of care				
	How does the way primary care dentists are paid impact on dental care delivered and outcomes for patients?	Strategically and evidence-based remuneration policies may have the potential to incentivise dentists to carry out treatment based on best-evidence and patients' needs.	1A	4-5
	Is using dental auxiliaries to provide care traditionally delivered by dentists effective?	The quality of the available evidence is very low.	2A	2-3
	Can dental hygiene-therapists screen for caries and periodontal disease?	The results of this study suggest that hygiene-therapists could be used to screen for dental caries and periodontal disease.	2B	116-117
Endodontics				
	Is cone-beam computed tomography (CBCT) effective for the diagnosis of tooth fractures?	We suggest that CBCT has a high diagnostic accuracy for tooth fractures and could be used in clinical settings. We can be very confident with positive test results but should be very cautious with negative test results. For patients with negative results, close follow-ups are recommended. The diagnostic accuracy of CBCT is similar among different types of tooth fractures, which should be interpreted with caution due to unavailability of data for subgroup analysis on horizontal and oblique tooth fractures.	1A	23-24
	What are the success rates of nonsurgical retreatment and endodontic microsurgery?	Endodontic microsurgery was confirmed as a reliable treatment option with favourable initial healing and a predictable outcome. Further long-term clinical studies investigating endodontic microsurgery and retreatment are needed in the future.	1A	82-83
Oral cancer				
	What is the diagnostic accuracy of tests for the detection of oral cancer and potentially malignant disorders (PMD) of the lip and oral cavity, in people presenting with clinically evident lesions?	None of the adjunctive tests can be recommended as a replacement for the currently used standard of a scalpel biopsy and histological assessment.	1A	46-47
	Which computer-assisted oral precancer and cancer diagnostic test has the highest accuracy?	DNA-cytometry appears to offer promise in assisting practitioners with identifying potentially malignant lesions at an early stage where they are more treatable and are associated with higher survival rates.	1A	106-107
	Do chemiluminescence and autofluorescent imaging devices aid the detection of oral squamous cell carcinoma (OSCC) and oral potentially malignant disorders (OPMD)?	There is inadequate evidence to draw valid conclusions on the effectiveness of chemiluminescence and autofluorescent imaging devices as screening adjuncts.	2A	48
	What is the malignant transformation rate of oral leukoplakia?	Malignant transformation rate of OL varies from 0.13 to 34% across the 24 studies reviewed here. The authors identified clear risk factors for malignant transformation of oral leukoplakia, including location (tongue), appearance (non-homogenous), increased age and female gender. There was little evidence that surgical intervention had any benefit in reducing the risk of transformation.	2A	102-103

Oral health				
	Does the supervised introduction of an oral healthcare protocol in a nursing home, in addition to education, improve the oral health related knowledge and attitudes of nurses and nurses' aides?	Significant improvements in knowledge followed an educational programme where participants' initial knowledge was low. Educational activities alone had no impact on attitudes and further research on how to improve attitudes is required.	1B	93-94
	Is a theory-guided oral health intervention effective in adolescents in a school setting?	Social-cognitive theory-guided interventions improved oral self-care of adolescents in the short term. This improvement lasted only for five months after the intervention was discontinued.	2B	110
Oral medicine				
	Does prophylactic low energy laser therapy (LLLT) reduce the risk of severe mucositis in children and adults with cancer or undergoing haematopoietic stem cell transplantation (HSCT)?	Prophylactic LLLT reduced severe mucositis and pain in patients with cancer and HSCT recipients. Despite this promising result, no clear recommendation can be made because of the variability among studies concerning the laser characteristics, schedule, evaluation interval and assessment scale.	1A	49
Oral Surgery				
	Should long-term aspirin should be stopped before tooth extraction?	Increased rates of haemorrhage are observed in patients on long-term aspirin therapy. The authors recommend not stopping long-term aspirin prior to dental extraction, and local measures for haemostasis should be enhanced when required.	1A	118-119
	Does the use of saline mouthrinse following dental extractions reduce post-operative complications?	The results indicate that the use of a warm saline mouthwash at least twice daily significantly reduces the incidence of alveolar osteitis (persistent throbbing pain and exposure of bare alveolar bone usually presenting within 48-72 hours) whilst having no effect on levels of acute inflamed socket or acute infected socket.	2A	27-28
	What is the best intervention for the management of iatrogenic inferior alveolar and lingual nerve injury?	The limitations of the studies and the imprecision of the data provided very low quality evidence and no therapy can be indicated or preferred for the treatment of idiopathic nerve injury.	2B	29
	Does the use of oral contraceptives increase the risk of dry socket (DS)?	The present study indicates that the use of oral contraceptives may promote the incidence of DS in females following impacted mandibular third molar extraction.	2B	92
	Is bone augmentation beneficial for sinus lifts and do sinus lifts improve dental implant rehabilitation outcomes?	There is moderate quality evidence which is insufficient to determine whether sinus lift procedures in bone with residual height between 4 and 9 mm are more or less successful than placing short implants (5 to 8.5 mm) in reducing prosthesis or implant failure up to one year after loading.	2B	21-22
	What is the most effective and safe treatment to prevent bleeding in people with congenital bleeding disorders undergoing surgery?	There is insufficient evidence from randomised controlled trials to assess the most effective and safe haemostatic treatment to prevent bleeding in people with haemophilia or other congenital bleeding disorders undergoing surgical procedures.	2B	90-91
Orthodontics				
	What is the impact of orthodontic treatment on oral health-related quality of life (OHRQoL)?	Findings of this review suggest that there is an association (albeit modest) between orthodontic treatment and quality of life.	1A	86
	What is the most effective treatment for posterior crossbite?	The results suggested that a fixed quad-helix appliance was more effective in treating posterior crossbites than a removable expansion plate. Both the quad-helix and the expansion plate were better than the use of composite inlays.	2A	25-26
	Is any intervention effective for cessation of non-nutritive sucking habits in children?	The review found low quality evidence that orthodontic appliances and psychological interventions (including positive and negative reinforcement) are effective at improving sucking cessation in children. There is very low quality evidence that palatal crib is more effective than palatal arch. The orthodontic appliance was more likely to stop digit sucking than no treatment, whether it was used over the short term or used in combination with a psychological intervention.	2B	87
	Can surgical procedures speed up orthodontic treatment?	This review found that there is limited research concerning the effectiveness of surgical interventions to accelerate orthodontic treatment.	2B	88-89
	Is clear aligner treatment (CAT) effective in controlling the orthodontic movement in non growing subjects?	Based on the available evidence, it would appear that CAT is effective in the management of simple malocclusions.	2B	111
	What is the impact of malocclusion and its treatment on OHRP-14 scores in adults?	The evidence presented is limited and no strongly supported conclusions can be drawn. However, based on current literature, it seems that malocclusion can have a negative impact on OHRQoL, and that its correction can lead to improved levels of OHRQoL.	N/A	57-58
Periodontal				
	Does the adjunctive use of diode laser improve outcome of non-surgical periodontal treatment?	The results of this systematic review indicate that the adjunctive use of the diode laser after scaling and root planing is unwarranted.	1A	16

Are dentifrices containing triclosan more effective than stannous fluoride dentifrices on the parameters of gingival inflammation?	Inconclusive and weak evidence shows minor but clinically insignificant difference between triclosan- and stannous fluoride-containing dentifrices in gingival health parameters.	1A	13-14
What is the effect of professional mechanical plaque removal (PMPR) on clinical and patient-reported outcomes related to the primary prevention of periodontal diseases in adults?	The evidence suggests that while PMPR may influence gingival health, repeated, thorough OHI may have as great an impact. Thus, professional plaque removal without good daily personal plaque control is likely of limited value. The overall strength of evidence was moderate (meaning further research may change the estimate of effect one way or another), with consistency of findings across studies.	1A	74-75
Does periodontal treatment improve glycaemic control in diabetics?	This demonstrates that periodontal treatment leads to a reduction of HbA1c in diabetic patients with periodontitis, with improvement of periodontal status for three months after treatment. But the treatment may have no obvious effect on glycaemic control six months after treatment. So physicians and dentists should carefully interpret these results when they apply them in clinical practice.	1A	78-79
Is chlorhexidine dentifrice or gel more effective than chlorhexidine mouthwash on plaque levels, gingivitis, bleeding and tooth discoloration?	This review demonstrates better performance for the mouthwash than the dentifrice or gel. However, because of the small number of studies and their heterogeneity the authors only graded the quality of the evidence for the effect on plaque scores as moderate and gingival index as low.	2B	59
Does treating periodontal disease in patients with chronic periodontal disease help prevent or manage cardiovascular disease (CVD)?	There is very low quality evidence that was insufficient to support or refute whether periodontal therapy can prevent the recurrence of CVD in the long term in patients with chronic periodontitis. No evidence on primary prevention was found.	2B	17-18
Is interdental brushing in addition to toothbrushing, more effective than toothbrushing alone for the prevention and control of periodontal diseases, dental plaque and dental caries?	Only one study looked at whether toothbrushing with interdental brushing was better than toothbrushing alone, and there was very low-quality evidence for a reduction in gingivitis and plaque at one month. There is also low-quality evidence from seven studies that interdental brushing reduces gingivitis when compared with flossing, but these results were only found at one month. There was insufficient evidence to determine whether interdental brushing reduced or increased levels of plaque when compared to flossing.	2B	76-77
Is there an association between tooth brushing frequency and periodontitis?	Infrequent tooth brushing was statistically associated with periodontitis, but the association was small.	N/A	15
Restorative			
What is the longevity of posterior composite restorations in adults?	The overall survival proportion of posterior resin composite restorations is high. The major reasons for failure are secondary caries and restoration fracture, which supports the importance of adequate follow-up time as secondary caries often occurred after three years or later.	1A	114-115
In older patients is a tooth replacement strategy based on the shortened dental arch concept (SDA) more cost effective than partial removable dental prostheses?	From a purely economic standpoint, the results from this analysis suggest that the treatment of partially dentate older adults should be focused on functionally orientated treatment because it is simply more cost-effective.	1B	19-20
Do teeth restored with metal post-retained restorations have more root fractures than teeth restored with fibre posts?	The jury is still out on the comparative prognosis between metal-based and fibre-reinforced composite post-retained core restorations.	2A	80-81
What effects do biological parameters, preparation geometry and technical factors have in the clinical success of full crown restorations?	With the exception of the location of crown margins, low to very low quality evidence currently exists on the effects that biological parameters, preparation geometry and technical factors have on clinical outcomes.	N/A	35-36
What are the clinically achievable geometric parameters of a tooth prepared for a crown?	The current achievable crown parameters reported in the literature generally fall short of those conventionally recommended. Standardised and objective methods of analysing preparation geometry are needed. Also, clinical trials are needed to determine the implications of these geometric values on clinical success.	N/A	35-36
How do patients who attribute their unexplained health complaints to amalgam give meaning to changes in health before, during and after its removal?	For this group of patients, it was important to remove dental amalgam restorations. However, it remains uncertain of how critical this actually was in relation to their experienced changes in health complaints, as they did not feel that they could credit all positive change to the amalgam removal. For some participants it meant this was no longer a source of worry and for others it helped them move towards accepting their health status.	N/A	100-101
Temporomandibular disorders			
Is botulinum toxin therapy an effective treatment for temporomandibular joint disorders?	Despite the good systematic review planning, the methods and bias of the included studies failed to provide an answer and the therapeutic benefits, or not, of BTX for TMD pain remain unclear.	3A	122