

Questions and answers in EBD Volume 19

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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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Topic	Question	Answer	Evidence Level	Page
Bruxism				
	Is botulinum toxin an option for the treatment of bruxism?	The evidence points to possible benefits on self-reported outcomes but the quality of the evidence is low and there are some fundamental issues requiring clarification.	N/A	59
Caries				
	What is the association between dental caries and the full range of body mass index (BMI) classes among children?	This meta-analysis showed no differences in dental caries between underweight and normal weight children. A subgroup evaluation suggested that overweight and obese children in high income countries were more likely have an increased caries experience when compared to 'normal-weight' children. The results should be interpreted with caution.	1A	38-39
	Is silver diamine fluoride (SDF) more effective than other active treatments/placebo in arresting caries in children?	SDF is more effective than active treatments or placebo for carious lesion arrest in primary teeth. The body of evidence was of high quality for primary teeth. However, there was not enough high quality evidence to draw conclusions about carious lesion arrest in first permanent molars.	1A	42-43
	Is Papacarie more effective than conventional drilling for caries removal in primary teeth?	The findings are confirmative of previous reviews; removal using Papacarie is more comfortable/less painful to patients, but takes longer.	1B	74
	What is the longevity of posterior restorations with different materials in primary teeth and what are the common reasons for failures?	The review showed a large variation in longevity of posterior restoration with different materials in primary teeth. High quality randomised clinical trials on different dental restorative materials are needed to generate reliable results.	2A	44
	Do mouth side, arch or tooth type influence the retention and effectiveness of fissure sealants?	Fissure sealants seem to perform similarly for sealant retention and caries rate for different sides of mouth, arches and tooth types apart from between 1st permanent molars and premolars, where premolars have more favourable results.	2A	40-41
	What is the effectiveness of silver diamine fluoride (SDF) in the prevention and arrest of root caries in older adults compared to alternative treatment or placebo?	Existing reports of SDF trials support effectiveness in root caries prevention and arrest, remineralisation of deep occlusal lesions and treatment of hypersensitive dentine.	2A	46-47
	Are direct and indirect digital imaging systems effective for diagnosis of approximal caries?	Current systems lack sufficient sensitivity to reliably identify all surfaces with caries.	2A	71-72
	Does a laser remove caries as effectively as mechanical drilling?	There was insufficient evidence to show laser removal of caries was more or less efficient than traditional mechanical technique. However, there was some low quality evidence in favour of laser therapy for pain control, need for anaesthesia and patient comfort.	2B	45
	Does fluoride supplementation during pregnancy prevent caries in their children's primary teeth?	There is no evidence that fluoride supplements taken by women during pregnancy are effective in preventing dental caries in their offspring.	2B	73
	Does supervised toothbrushing reduce the incidence of caries in children and adolescents?	There is still not sufficient evidence of a high level to indicate that school based supervised brushing has an effect on caries incidence. Still, this does not mean that these programmes would be ineffective.	2B	6-7
	Is <i>Candida albicans</i> associated with early childhood caries (ECC)?	Despite a strong association between <i>C. albicans</i> and ECC, these results should be interpreted with caution, as the quality of the available evidence is likely to be low due to the high risk of biases derived from the cross-sectional studies.	N/A	100-101
	Are caries risk assessment (CRA) models effective in determining patients' actual caries status and/or their probability to develop new carious lesions?	There is insufficient evidence to assert that CRA models are effective in determining patients' actual caries risk or in predicting their probability of developing new carious lesions. Moreover, the validity of standardised CRA models is still limited.	N/A	102-103
Dental Implants				
	What is the influence of the local delivery of bisphosphonates on the osseointegration of titanium implants in humans?	The local use of a bisphosphonate appears to favour the osseointegration of titanium implants in humans.	2A	82-83

TOOLBOX

	Is there a difference in survival rate between implants placed in patients with osteoporosis compared to patients without osteoporosis?	The implant survival rate in bone tissue with osteoporosis was similar to that of the control group. The results should be interpreted with caution due to the possible bias of the available evidence.	2B	51-52
	Is there any difference in implant failure rate, marginal bone loss (MBL) and post-operative infection between turned dental implants compared to anodised dental implants?	Within the limitations of the existing investigations, the present study suggests that turned implants have a statistically higher probability to fail than anodised-surface implants, regardless of whether the implants were placed in maxilla or mandible. However, the result of the review should be interpreted with caution due to biases and confounding factors.		80-81
Dental Trauma				
	What is the global experience of traumatic dental injury (TDI)?	The global prevalence estimate of TDI was between 13.0%-17.4%. It was estimated that males were 34%-52% more likely to develop TDI than females [prevalence ratio 1.43 (95% CI 1.34-1.52)]. In addition, based on the world population in 2016 it estimates that approximately 900 million individuals had had at least one TDI of any kind.	2A	34-35
Endodontics				
	Which is the most effective retrograde root filling material?	Currently there is insufficient evidence to determine which material is preferable for retrograde filling.	1A	8-9
	What is the effect of single-dose orally administered 40mg prednisolone compared to placebo on postoperative pain after single visit root canal treatment?	For one visit root canal treatment, the use of a single dose of prednisolone compared to placebo to reduce pain and lessen the use of analgesics is important to consider. What does this mean?	1B	10-11
	Is there a relationship between the presence of fibre posts in abutment teeth and the occurrence of prosthetic complications in single crowns or fixed prostheses?	Fibre post debonding and crown dislodgment was the most frequently reported outcome and the preservation of tooth structure seems to reduce the risk of failure. However, the results with some caveats should be interpreted with caution due to the limited quality of the available evidence.	2A	62
Facial Pain				
	In patients with oro-facial pain how effective are pharmacological treatments?	The available data are insufficient to determine which pharmacological interventions provide the best pain relief in any of these oro-facial pain conditions.	1A	28-29
	Is botulinum toxin (BoTN-A) injection effective for the treatment of trigeminal or postherpetic neuralgia?	Considering the small number of studies and the limitations of the evidence, BoTN-A might be an adjunct for the treatment of PHN and TN in patients refractory to anticonvulsant medication.	2B	57-58
Oral Health				
	Does oral health education provided in a school setting improve oral hygiene and reduce dental caries in children?	Traditional oral health educational actions were effective in reducing plaque in the short-term, but not gingivitis. However the results should be interpreted cautiously because of the clinical heterogeneity and risk of bias of the studies included.	2B	36-37
	Does school dental screening improve oral health?	Very low certainty evidence was insufficient to draw conclusions about whether there is a role for traditional school dental screening in improving dental attendance. For criteria-based screening, there was low-certainty evidence that it may improve dental attendance when compared to no screening. However, when compared to traditional screening there was no evidence of a difference in dental attendance.	1A	3-4
	Does oral health literacy affect oral health behaviours, perception, knowledge and dental treatment related outcomes?	The review's findings were inconclusive and provided no concrete insight into the effect of oral health literacy on the outcomes described.	N/A	69-70
Oral Medicine				
	Does buffered local anaesthetic reduce infiltration pain and onset time during dental procedures?	The review suggest that buffered lidocaine does not reduce pain from injection, and the magnitude of the onset time reduction in inferior alveolar nerve blocks and in inflamed tissues is not clinically relevant.	1A	92
	Is any pharmacological intervention available to prevent the effects of radiation salivary gland dysfunction?	The results in this extensive review concluded that there is low evidence favouring amifostine compared to placebo to improve xerostomia, salivary flow and quality of life. However the prescription is costly and not free of important side effects such as nausea, vomiting and hypotension. Evidence for the remaining interventions is insufficient.	1A	30-31
	Is any therapy useful for patients with taste disturbances?	There was very low-quality evidence that was insufficient to conclude on the role of zinc supplements to improve taste acuity reported by patients and very low-quality evidence that zinc supplements improve taste acuity in patients with zinc deficiency/idiopathic taste disorders. There was no evidence to conclude the role of zinc supplements for improving taste discrimination, or any evidence addressing health-related quality of life due to taste disorders. Very low-quality evidence was found that is not sufficient to conclude on the role of acupuncture for improving taste discrimination in cases of idiopathic dysgeusia (distortion of taste) and hypogeusia (reduced ability to taste). The authors were unable to draw any conclusions regarding the superiority of zinc supplements or acupuncture.	1A	60-61
	Is photodynamic therapy (PDT) an effective treatment for symptomatic oral lichen planus (OLP)?	While the findings suggest that PDT may be beneficial the findings should be viewed cautiously. Additional high quality studies are needed.	2A	90-91

What is the global prevalence of the oral potentially malignant disorders among adults?	The overall prevalence of OPMD worldwide was 4.47%, and males were more frequently affected by these disorders. The prevalence of OPMD differs between populations; therefore, further population-based studies may contribute to the better understanding of these differences.	3A	120-121
In patients with oral lichen planus (OLP) what is the rate of malignant transformation?	The overall transformation rate was 1.4%; 1.37% for OLP and 2.43% for oral lichenoid lesions. The quality of these largely retrospective studies included limits our confidence in the findings.	N/A	122
Oral Surgery			
Does the adjunctive use of autologous platelet concentrates (APCs) improve post extraction outcomes?	APCs including platelet-rich plasma (PRP), platelet-rich fibrin (PRF) and plasma rich in growth factors (PRGF) may be used following tooth extraction to improve soft tissue healing, probing depth and bone density, as well as to reduce swelling and trismus. However, their use in reducing other postoperative complications such as pain, alveolar osteitis, inflammation, infection, or in improving new bone percentage and metabolism cannot be recommended.	1A	118-119
Does chlorhexidine prevent alveolar osteitis (AO) after third molar extractions?	General dental practitioners should be aware of the potential benefit of the use of chlorhexidine in the prevention of alveolar osteitis after third molar extractions.	1A	18-19
What is the bleeding risk of patients discontinuing oral anticoagulant therapy (OAT) while undergoing dental extractions?	The results of this meta-analysis suggest that patients continuing OAT during tooth extraction do not have an increased incidence of post-operative bleeding following tooth extraction compared to patients who discontinue their OAT.	2A	53-54
Does cycle helmet use reduce facial injuries?	This review suggests that bicycle helmets may offer a protective benefit against facial fractures. However, previous analyses have shown that this protection is not uniform across the face and that the upper and middle face may be protected.	3A	113
What is the most effective conservative surgical approach to prevent the recurrence of a non-syndromic odontogenic keratocysts (OKC)?	The authors' conclusions suggesting the superiority of decompression followed by enucleation is based on the outcome of five studies with 57 cases with a range of follow-up between 12 and 228 months. Up to date there is no single approach to OKC that provides complete resolution with no or very low recurrence rates while having limited morbidity. The two-step approach may provide the best results, but it is still unclear for what patient or lesion characteristics and the optimum length of follow-up needed.	N/A	55-56
Orthodontics			
What is the risk of developing oral clefts, in children with mothers who are actively smoking cigarettes?	Despite the inconsistent findings of the meta-analysis the study does show a statistically significant association between smoking and the risk of oral clefts. Dental practitioners should consider smoking as another risk for developing oral clefts, and support mothers with smoking cessation.	3A	24-25
Are reminder systems effective in improving oral hygiene and adherence to appointments in orthodontic patients?	This systematic review highlights that there is moderate to high quality evidence showing the positive effect of reminders on oral hygiene and appointment adherence in orthodontic patients. The authors suggest further high quality RCTs with longer follow-ups would be beneficial to support the efficacy of this intervention.	1A	109-110
Does open or closed surgical exposures of palatally displaced canines affect clinical outcomes?	Limited available evidence suggests surgical exposure of palatally displaced canines is successful in bringing canines into alignment. However, data do not support one technique over the other (closed vs open).	1A	20-21
Are non-pharmacological techniques effective in reducing pain during orthodontic treatment?	The overall results of the current study are inconclusive. There is low quality evidence that non-pharmacological interventions reduce pain during orthodontic treatment.	1A	48-49
Is there a difference in treatment duration between a customised fixed appliance system and a noncustomised system?	The customised orthodontic system was not associated with significantly reduced treatment duration, and treatment quality was comparable between the two systems.	1B	50
Does breastfeeding affect malocclusions in primary and mixed dentitions?	Breastfeeding may be a protective factor against posterior crossbites and Class II malocclusions in primary and mixed dentition, with the protective effect increasing with months of breastfeeding. However, the available evidence is of very low quality.	2A	5
In patients with maxillary impacted canines is there a difference in the diagnostic accuracy of cone-beam computed tomography vs conventional radiography?	There is no robust evidence to support using CBCT as first line imaging method.	N/A	22-23
Are the outcome measures selected to evaluate hypodontia care rational and consistent?	The outcome measures used to evaluate hypodontia care are largely clinician and research-driven with little evidence of their relevance to patients and limited value in promoting shared decision-making. A patient-centred, core outcomes set is required to drive improvements in dental health services, and more specifically, hypodontia care.	N/A	76-77
Is there any difference in the success of the orthodontic treatment result in adult patients 16 years or less with Class II division 2 malocclusion who are treated with extraction of permanent teeth or without extraction of permanent teeth or no orthodontic treatment at all?	There is no evidence from clinical trials to recommend or discourage any type of orthodontic treatment to correct Class II division 2 malocclusion in children. This situation seems unlikely to change as trials to evaluate the best management of Class II division 2 malocclusion are challenging to design and conduct due to low prevalence, difficulties with recruitment and ethical issues with randomisation.	N/A	88-89

Paediatric dentistry				
	Is Cognitive Behavioural Therapy (CBT) effective in reducing dental anxiety in children?	The overall quality of evidence for the use of CBT to reduce dental anxiety in children is currently low.	1A	104
	Does using articaine local anaesthetic (LA) provide superior pulpal and soft tissue analgesia in child patients receiving operative or extraction treatments when compared to lidocaine LA?	Low quality evidence suggests no difference in efficacy between lidocaine IAD nerve blocks and articaine infiltration when used for routine dental treatment in children. Also, no difference was found in self-reported pain between lidocaine and articaine during treatment procedures, but apparently articaine leads to less pain reporting after the procedure. The body of the evidence is quite low due to the substantial heterogeneity in the reported outcomes and the overall high risk of bias of the included studies.	1A	105-106
	What is the global prevalence of molar incisor hypomineralisation (MIH)?	This meta-analysis showed the average global prevalence of MIH as 14.2%. Some geographic regions had higher than average prevalence, which could inform oral health policy in those areas.	1A	78-79
	Is glass ionomer cement more effective than composite resin for class II restorations in primary teeth?	Glass ionomer cements (resin-modified and conventional) and composite resins are comparable materials for restoring Class II cavities in primary molars, however, neither outperform preformed metal crowns.	1A	86-87
Periodontal Disease				
	What is the comparative effectiveness of interproximal oral hygiene (IOH) aids?	In the absence of strong evidence about IOH aids differences in the impact on patients, practitioners should customise IOH aid recommendations and offer alternatives rather than insisting on instruction on the use of a universally recommended cleaning aid. Further well designed and appropriately powered clinical trials are warranted to provide more authoritative guidelines on IOH selection.	1A	107-108
	Does treating periodontal disease prevent adverse birth outcomes in pregnant women?	There is no clear evidence that periodontal treatment during pregnancy has an effect on preterm birth. There is some evidence that it may reduce incidence of low birth weight. There is insufficient evidence to define what type of periodontal treatment is superior in preventing any adverse pregnancy outcome.	1A	12-13
	Do periodontal diseases impact on quality of life?	The findings support the association between clinically diagnosed periodontal diseases and subjectively assessed OHRQoL.	2A	14-15
	Are antiseptic oral sprays effective for control of plaque and gingival inflammation?	While meta-analysis suggests that small reductions can be demonstrated in the short-term studies the clinical relevance of these findings is uncertain. Further well designed, conducted and reported studies of the appropriate size and duration are needed to clarify the real clinical effectiveness of these agents.	2B	75
Restorative				
	In non-carious cervical lesions do HEMA-free adhesive systems have better clinical performance than those containing HEMA?	Accepting the limitations of primary studies, the meta-analysis concludes that HEMA-free adhesive systems do not appear to have better clinical performance of NCCL restorations than HEMA-containing systems when used to restore NCCLs in adults.	1A	114-115
	Is bilateral balanced occlusion (BBO) a more effective design for conventional dentures?	BBO does not offer a significant clinical advantage over other occlusal schemes in terms of quality of life or satisfaction and mastication performance and muscle activity. However, further research is required to improve on the quality of primary research used in this field.	1A	116-117
	Are digital impressions more efficient than conventional techniques?	This review highlights that while many studies are available comparing the clinical outcome there is very little high-quality evidence addressing patient outcomes. The author established the clinical time efficacy for both digital and conventional impressions is similar, however patients have a greater preference for digital impressions. More high quality, well conducted patient-reported outcome-measured RCTs with a standardised protocol for working time measurements involving a larger sample are needed to generate reliable results.	2A	84-85
TMD				
	In adult patients with TMD and related otologic complaints, what is the effect of conservative therapies on changes in otologic signs and symptoms?	Insufficient evidence in favour or against the conservative therapies for TMD on changes in otologic signs and symptoms was identified.	2A	26-27