

Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.

The abstracts on this page have been chosen and edited by John R. Radford.

Dental erosion/genetics

Genetic variation may explain why females are less susceptible to dental erosion

Uhlen MM, Stenhagen KR *et al.* *Eur J Oral Sci* 2016; **124**: 426–432

No association between enamel-formation genes and enamel loss (erosion), but there were associations when analysing ‘extreme values’ for these factors.

Dental erosion is perplexing. For example, despite acid exposure, not everyone demonstrates erosion. In addition, why do males have a higher prevalence and severity of erosion than females? The investigators posited that polymorphisms in genes involved in enamel formation, may affect the susceptibility of an individual to erosion. Ninety premolar teeth, extracted for orthodontic reasons, were subjected to erosive challenge with 0.01M HCl. Fifteen single nucleotide polymorphisms were analysed from salivary DNA. When examining terciles and quartiles, there were significant associations between erosion and amelogenin (closely related proteins involved in amelogenesis), X-linked tuftelin and tuftelin-interacting protein (may initiate the enamel mineralisation). Enamel loss was higher in those teeth extracted from males than females. So although females may be genetically less susceptible than males to dental erosion, simpler explanations may be that merely men exert greater masticatory forces or, as has been shown, women have thicker enamel.

DOI: 10.1038/sj.bdj.2016.909

Patching restorations

Cost-effectiveness of repairing versus replacing composite or amalgam restorations

Kanzow P, Wiegand A *et al.* *J Dent* 2016; **54**: 41–47

‘Repairing instead of complete replacement of partially defective restorations is likely to retain teeth for longer...’

Using similar methodology, this research group reported (*J Endod* 2016; **42**: 1446–1452, and summarised in this section of this Journal DOI: 10.1038/sj.bdj.2016.821) that there is no difference in the cost efficacy of single-versus multistep root canal treatment. In this study, published in the *Journal of Dentistry*, they found patching a failing restoration was more effective, but not necessarily cheaper, than complete replacement of a restoration. As background, the harsh environment of the oral cavity is such that over half the treatment a dentist carries out is remedial treatment for failing restorations. These investigators used a Markov model (a model that randomly change systems whereby future states depend only on the current state not on previous events) to explore different outcomes over the patient's lifetime for a three-surfaced composite or amalgam restoration. A German healthcare setting was used to estimate costs in a simulated population of one thousand 60-year-old females, with tooth retention years being the oral health outcome. Repairing composite restorations was more cost-effective than repairing amalgam restorations

DOI: 10.1038/sj.bdj.2016.910

Removing denture adhesives

Evaluation of the efficiency of denture cleaners for removing denture adhesives

Harada-Hada K, Hong G *et al.* *Gerodontology* 2016; **33**: 453–460

Cushion adhesives are the most tenacious whereas powder adhesives are removed most effectively by denture cleaners.

Denture adhesives are shunned by dentists because their use implies that their exquisitely crafted prosthesis lacks retention and stability. But could denture adhesives indeed cause harm by impairing denture hygiene such that they exacerbate denture-derived stomatitis or indeed cause aspiration pneumonitis? The aim of this study was to examine if denture cleansers could mitigate such untoward events by removing different types of denture adhesives. In this *in vitro* study, they categorised visually the efficacy of denture cleaners to remove powder, cream or cushion adhesives on acrylic specimens. It would appear that although denture cleaners could liquefy cream adhesives, this requires immersion in denture cleaners for over 12 hours. Such would advocate the use of mechanical cleaning. Cushion adhesives were the most stubborn with denture cleaners having no effect on their removal. All denture adhesives and denture cleaners were Japanese brands although some were made by international companies.

DOI: 10.1038/sj.bdj.2016.911

Toothbrush disinfection

Evaluation of toothbrush disinfection via different methods

Basman A, Peker I *et al.* *Braz Oral Res* 2016; **30**: DOI: 10.1590/1807-3107BO R-2016.vol30.0006

Centers for Disease Control and Prevention state ‘the likelihood of toothbrush cross-contamination in these environments (schools and group settings) is very high.’

ChildSmile has resulted in a dramatic reduction in dental caries in children; they are encouraged to brush their teeth daily at school with a fluoride toothpaste. In order to minimise cross-contamination, toothbrushes are stored in a spaced storage system. Symbols are displayed that allow each child to identify their own brush. In this study, 60 volunteers brushed their teeth twice each day for 7 days. Following brushing, the toothbrush was treated according to the following regimens: immersed in 1) 0.12% chlorhexidine gluconate, 2) 2% sodium hypochlorite, 3) a mouthrinse containing essential oils and alcohol (Listerine), 4) 50% white vinegar, 5) a tap water control, and 6) subjected to a dishwasher cycle. Following each disinfection regimen, the toothbrush was washed in water and stored in a vented container. White vinegar was the most effective method for disinfecting toothbrushes.

DOI: 10.1038/sj.bdj.2016.912