

# 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.

## Minimal invasive bridges

A systematic review of the survival and complication rates of inlay-retained fixed dental prostheses

Chen J, Cai H *et al.* *J Dent* 2017; **59**: 2–10

**Difficult to make any clear recommendations, as many combinations of mechanical and biological characteristics may contribute to the survival of such restorations.**

But despite this, the investigators state that inlay-retained fixed dental prostheses can still be used in the short- and middle-term as an alternative to short-span conventional fixed dental prostheses and implant-supported single crowns.

It may seem curious to mention in this paper the Rochette bridge, with its arcane perforations in the framework to retain the lugs of chemically-cured resin composite. However, the Rochette bridge was the starting point for contemporary minimal invasive bridges. Has the inclusion of inlays incorporated in the framework been a major advance? A cursory survey of the literature gives no steer, as the survival of such bridges seem to vary from a mere 38% to as high as 95.8%. But where does all this leave the practitioner?

Following exclusions, the final review comprised eleven studies, ten of which were prospective cohort studies and one RCT. The Newcastle-Ottawa scale was used to grade the quality of the cohort studies. The mean score was 4.0, with a score less than 6 regarded as of low quality. In addition, two studies were carried out with the same cohort of patients; of concern, markedly dissimilar results were reported albeit over different observation periods. With respect to the RCT, it was judged there 'might also have a high risk of bias' with few details on avoidance of selection bias and blinding. Then there was an almost bewildering heterogeneity as to the provision of the inlay-retained fixed dental prosthesis. For example, some inlay retainers were of a conservative tub-shaped design, whereas others were of extensive design incorporating an interdental box. Some frameworks used short retainer wings. Then several different materials have been used to form the framework with associated distinct surface treatments. In addition, different brands of luting cements have been used.

The key outcome measure was survival/'failure rate': 61 of the 394 inlay-retained fixed dental prostheses 'debonded, totally lost or required refabrication' over a mean observational period of 3.8 years. Using Poisson regression analysis, interestingly there was no difference between bridges with frameworks constructed from ceramic/metal and 'fiber-reinforced composite'. Of note, however, most of the studies examining the failure of fibre-reinforced composite bridges had a short follow-up time of 2–3 years. Zirconia-based bridges appeared to have superior outcomes to glass ceramic bridges.

The most frequent failure for metal or ceramic bridges was debonding, and fracture for fibre-reinforced composite bridges. The most common 'biological' reasons for failure were secondary caries and sensitivity. Tooth sensitivity tended to regress soon after cementation.

DOI: 10.1038/sj.bdj.2017.402

## School dental inspections

Systematic review and meta-analysis of randomised controlled trials on the effectiveness of school-based dental screening versus no screening on improving oral health in children

Joury E, Bernabe E *et al.* *J Dent* 2017; **58**: 1–10

**No effect of school-based dental screening programmes on caries or dental attendance.**

Hauled out of class, lined-up along draughty corridors, then only to be scolded because Mum had forgotten to sign the consent form; but many worthy organisations such as the World Health Organisation have recommended the screening of caries in children. In the UK, school dental inspection had been a statutory requirement for more than one hundred years. But then over 10 years ago, the UK National Screening Committee stated that there was no evidence for the effectiveness of school-based dental screening. The decision to continue with these or otherwise was one for local authorities. The aim of this systematic review was to assess the effectiveness of school-based dental screening compared with no screening in those aged 3–18 years old.

This rigorous systematic review followed the PRISMA guideline and was registered with PROSPERO. Three sets of independent reviewers interrogated the usual data bases together with other sources. Appendix A in the paper gives the search keywords and MeSH terms and filters for each of the databases. It is interesting to note how each of the databases, although starting with the same MeSH ('mass screening') built their searches. Five cluster RCTs were identified. A cluster RCT is when groups of subjects, as opposed to individual subjects, are randomised. A meta-analysis was carried out on 28,442 children, included in the cluster RCTs. Cochrane's criteria of risk of bias assessment were used which revealed an 'unclear or high risk of bias'. Only one RCT measured the prevalence and mean number of teeth with caries but all five reported on dental attendance.

When comparing those who attended dental screening programmes and those who did not: 1) there was no difference in attendance, 2) there was no difference in the prevalence of caries in both deciduous and permanent teeth, and 3) there were no difference in the 'prevalence of sepsis, presence of gross plaque or calculus, and trauma to the permanent incisor teeth'.

But then qualitative studies have shown that parents, teachers and school nurses value dental screening. Nevertheless, dental screening may more effectively meet its purpose if subsequent treatment appointments were arranged after school and dental practices were located close to the school.

The findings of this study are of relevance to high income countries but it should be stressed not necessarily generalisable to middle-low and low-income countries. In these countries, school-based dental screening may be a key oral health priority as such programmes may 'tackle the growing burden of dental caries in their child population.'

DOI: 10.1038/sj.bdj.2017.403