

**SCIENTIFIC
SECTION**

Commentaries on scientific papers published in this issue

A clinical comparison of bracket bond failures in association with direct and indirect bonding

**S. Thiyagarajah, D. J. Spary and
W. P. Rock**

This study was a randomized clinical trial employing a split mouth design to compare failure rates between brackets bonded using a direct technique and those bonded with an indirect technique. The authors describe the design as a two-centre study, but only one clinician was involved, therefore operator bias was minimized. The clinician is to be congratulated in having such a low number of bond failures. The patients were observed over 1 year, which should be sufficient time to detect any differences between techniques.

The investigators opted for a trial using a split mouth design. One advantage claimed for the indirect technique is the time saved bonding a whole arch at once. It would therefore be interesting to see if these results are replicated when the techniques are randomized to whole, rather than split arches.

The authors admit that seven brackets fell off at the time of placement using the indirect technique and were excluded from the analysis. I would suggest that a bracket, which comes off whilst the patient is in the chair should be regarded the same as one that falls off after the patient leaves the surgery, but as the number of bond failures was low, it is unlikely to make much difference to the results. The authors also hint (for example, over the removal of flash) that the operator was inexperienced using the indirect technique and, therefore, with more experience this is less likely to happen.

The results of this study are useful in establishing that bond failure rates are the same whether a direct or an indirect bonding technique is used. Arguments in favour of indirect bonding include more accurate bracket placement and greater patient comfort.¹ A recent RCT has found no evidence for the former² and there has been little work done on the latter. This might be a

fruitful area for research into the benefits of indirect bonding in the future.

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References

1. Sondhi A. Efficient and effective indirect bonding. *Am J Orthod Dentofacial Orthop* 1999; **115**: 352–59.
2. Hodge TM, Dhoptkar AA, Rock WP, Spary DJ. A randomized clinical trial comparing the accuracy of direct versus indirect bracket placement. *J Orthod* 2004; **31**: 132–37.

Orthodontic Retention: A systematic review

**S. J. Littlewood, D. T. Millett,
B. Doubleday, D. R. Bearn and
H. V. Worthington**

This review paper, based on a Cochrane review, which was published earlier this year in the Cochrane library, aimed to evaluate the effectiveness of different retention strategies following orthodontic treatment. I think this article is published at a particularly pertinent time, when many of us are questioning the traditional retention regimes that were taught during our training.

The study followed Cochrane guidelines and identified two randomized controlled trials (RCTs) and three controlled clinical trials (CCTs). A further paper had to be excluded due to insufficient data, despite the authors' best efforts to obtain the original data from the first named author of the publication. The primary outcome measure was the amount of relapse, but other important outcomes were also considered, including breakages, adverse effects on oral health and patients' satisfaction. The included studies looked at a variety of retention regimes including circumferential supracrestal fiberotomy (CSF) and full time removable retainer wear versus full time removable retainer wear; three types of fixed retainers vs. a removable retainer; CSF and a removable retainer at nights versus a removable retainer

only; a Hawley retainer versus a clear overlay removable retainer; and multistrand wire versus a polyethylene ribbon-reinforced resin composite for lingual retention.

As with many reviews of this type, the conclusions were that there is a shortage of high quality published research in this area, with current evidence being largely weak and unreliable. The authors stress the need for further research in this field, but they do acknowledge the difficulties involved in undertaking long-term studies of this type with the inherent problems of cost and loss of patients to follow-up.

However, there are certainly a number of good studies currently looking at orthodontic retention – indeed

anyone who attended the UTG presentations at the BOS day in Paris last September¹ will have heard the results of one of these studies presented by two of the graduate students from Bristol University. Maybe there is a light at the end of the tunnel?!

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Reference

1. British Orthodontic Society. UTG session abstracts. *J Orthod* 2006; **33**(2): 137–39.