

EDITORIAL

Award winning papers. So what?

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In recent months, the *Journal of Orthodontics* has published another scientific paper which has subsequently won the prestigious FEO (European Federation of Orthodontics) award (Figures 1 and 2). The Journal has also awarded its own prize for a scientific paper (Figures 3 and 4), but what do such prizes actually mean to practising orthodontists? Indeed, do they mean anything at all to practising orthodontists, whether in the clinic or for those undertaking research?

Let us examine the FEO award-winning paper first. The FEO award was specifically created to recognize a scientific paper that has made a significant contribution in research and clinical investigation that has advanced orthodontics and dentofacial orthopaedics.

Manning N, Chadwick SM, Plunkett D, Macfarlane TV. A randomized clinical trial comparing 'one-step' and 'two-step' orthodontic bonding systems. *J Orthod* 2006; 33(4): 276–83

Clinicians constantly strive to seek quicker ways of bonding fixed appliances to the teeth. Among possible advantages, it would certainly make bonding more comfortable for the patient. Manufacturers are also keen to support clinicians' desires to improve what they do but this can lead to problems when multiple, superficially similar products arrive on the market at the same time. However, any new method must be at least as good as the method it replaces since otherwise (for example) constant breakages or damage to teeth will compromise patient care and treatment outcomes.

This study carried out a randomized, controlled, clinical trial to compare the standard two-stage etch and bond technique with a new, one-stage self-etch primer. This approach utilizes the 'gold standard' of evidence-based, clinical research.

In this study, the authors:

- obtained ethical approval and informed consent;
- undertook a power calculation to increase the likelihood of the results being meaningful and not ambiguous – for example, due to there being insufficient patient numbers;

- randomly allocated patients who were about to start orthodontic treatment into two groups: those having two-stage etch and bond technique and those having one-stage self-etch primer bonding technique.

In addition to this,

- two clinicians undertook all the treatment;
- procedures were standardized as far as was possible;
- blinding of operators and/or patients was not feasible.

The study concluded that there was no statistically significant difference found between the clinical bond failure rates for brackets bonded using a self-etching primer or a conventional acid-etch and resin technique. Both systems had low overall failure rates and the decision to use a particular adhesive system may come down to individual preference.

However, there is perhaps more to this paper than at first meets the eye and there are a number of aspects that make it stand out relative to other, seemingly similar papers. For example, this paper randomizes *patients* to one or other bonding technique, i.e. it does not utilize a split mouth design. This makes it far more relevant to actual clinical practice, since randomization cannot itself affect the technique being tested. Furthermore, this paper reports results to the *end of treatment* (not just six- or twelve-month results) and, significantly, demonstrates that in this case, failure rates changed (increased) over this time. This directly relates to recommendations made in a systematic review of bonding studies,^{1,2} so this is a demonstration of high-level evidence being used to directly enhance and influence the work undertaken.

In summary then, before this study was undertaken, clinicians would probably have opted to use self-etch primers based on manufacturers' claims, cost, or word of mouth. Now clinicians have some evidence that suggests that this specific type of self-etch primer can reasonably be used in their patients without risking increased debond rates. This is actual, evidence-based decision-making directly impacting patient care.

What about the Journal of Orthodontics Scientific Paper of the Year, sponsored by Maney Publishing?



Figure 1 (left to right) Dr Steve Chadwick and Dr David Plunkett receiving the FEO (European Federation of Orthodontists) Award from Dr Jeremy Hodgkins, President of the British Orthodontic Society (on behalf of the FEO). (The paper's other co-authors, Dr N. Manning and Dr T.V. MacFarlane, were unable to be present)



Figure 2 The authors being congratulated by Dr Friedy Luther (Editor-in-Chief, Journal of Orthodontics), Dr J. Hodgkins, and Caitlin Meadows (Managing Editor, Maney Publishing)



Figure 3 Dr Friedy Luther and Caitlin Meadows congratulating Dr Philip Benson on winning the Journal of Orthodontics Scientific Paper of the Year 2007, sponsored by Maney Publishing. (Dr Benson's co-author, Dr C.W.I. Douglas, was unable to be present)



Figure 4 (left to right) Juliet Moore (Marketing Executive, Maney Publishing), Lynne Medhurst (Head of Marketing and Promotions, Maney Publishing), Dr Friedy Luther, Dr Philip Benson, Alison Holgate (Marketing & PR Assistant, Maney Publishing), and Caitlin Meadows

**Benson PE, Douglas CWI.
Decontamination of orthodontic bands
following size determination and
cleaning. *J Orthod* 2007; 34(1): 18–24.**

This was a laboratory-based study but before you think, ‘not relevant to me,’ consider the importance of cross-infection matters. Also consider whether it is possible to assess all clinically relevant cross-infection matters purely on the clinic. I suspect you would conclude that it is not: one has to use laboratory techniques to assess the success or otherwise of cross-infection procedures.

This study is therefore directly relevant to clinicians, as it assesses decontamination procedures which are relevant to the health of patients, to the health of clinical staff and, may also influence practice costs and actual clinical practice. For example, as pointed out by the authors: ‘Preformed stainless steel bands of varying sizes are commonly placed around posterior teeth during fixed appliance treatment. It frequently takes several attempts to achieve the correct size. Orthodontic bands are expensive; therefore, it is not financially viable to consider these as single-use, disposable items if they have been tried in the mouth and found to be the wrong size. As a result, the practice of re-use and re-circulation is widely accepted and carried out ...’

This study aimed to answer the following questions:

- What is the level of contamination with blood and saliva of orthodontic molar bands following size determination in the mouth?
- Is ultrasonic cleaning of tried-in bands for 15 minutes sufficient to reduce or remove this level of contamination so that they can be re-used?

The authors indicate some limitations of their work but use careful laboratory techniques. The authors concluded that:

- ultrasonic cleaning for 15 minutes reduces, but does not eliminate, detectable salivary proteins (amylase) from tried-in bands;

- ultrasonic cleaning for 15 minutes is less effective at removing detectable serum protein (albumin) from orthodontic bands;
- there is a need to investigate effective means of cleaning organic material from orthodontic materials if they are to be adequately sterilized and re-used.

In other words, practising clinicians need to watch this space since such findings may well affect clinical practice in the future. For example, when the risks and benefits are weighed up, such work may influence whether bonding supersedes banding of teeth.

The *Journal of Orthodontics* aims to publish high quality, valuable research which will answer important clinical questions that really matter to patients, clinicians and researchers. I hope that such awards will encourage and inspire more authors, from around the world, to submit their work to the Journal. To answer the question then: award winning papers. So what? So good.

**In Memoriam: Thomas M. Graber, DMD,
MSD, PhD. 27 May 1917 – 26 June 2007**

It is with regret that we learned of the sad passing of Dr Tom Graber on 26 June 2007. Among his many achievements, he was former Editor-in-Chief of the *American Journal of Orthodontics and Dentofacial Orthopedics* and Editor-in-Chief of the *World Journal of Orthodontics*.

References

1. Mandall NA, Millett DT, Mattick CR, Hickman J, Worthington HV, Macfarlane TV. Orthodontic adhesives: a systematic review. *J Orthod* 2002; 29(3): 205–10.
2. Mandall NA, Millett DT, Mattick CR, Hickman J, Macfarlane TV, Worthington HV. Adhesives for fixed orthodontic brackets. *Cochrane Database Syst Rev* 2003; issue 2: CD002282.

The *Journal of Orthodontics* would like to thank all those who have given so freely of their time by reviewing papers in 2007. We could not have produced the Journal without this invaluable assistance from so many people. In the New Year, the Journal will be issuing CPD certificates for all reviews submitted in 2007.