



Dental Review™

Merry Christmas from the team at Research Review

Making Education Easy

Issue 30 - 2011

In this issue:

- > *Third molar bony defects*
- > *Rubber dam systems*
- > *Teaching LA skills*
- > *Dentist's perception*
- > *Midline diastema*
- > *Whiplash*
- > *Toothbrush effectiveness*
- > *Hypochlorite on the pulp*
- > *Pulp stones and heart disease*
- > *Bleaching amalgam-pigmented teeth*

CLICK HERE

to read previous issues of
Dental Review

Welcome to the 30th edition of **Dental Review**, which has now been **humming along for five years**. Many thanks to all those subscribers who completed last month's survey about the publication. It is very pleasing to be involved with something that is well read, saved for future reference and often passed on to others to look at.

This issue has the usual very varied mix, from depth perception to whiplash, bleaching to toothbrushes, and pulp stones to local anaesthetics. I hope you find it interesting and that you will continue to follow Dental Review in 2012. In the meantime I have my Christmas hat on, so it must be time to send you all my best wishes for the season.

Nick Chandler

Associate Professor

Department of Oral Rehabilitation, University of Otago

nickchandler@researchreview.co.nz

Treatment of intrabony defects after impacted mandibular third molar removal with bioabsorbable and non-resorbable membranes

Authors: Corinaldesi G et al

Summary: Extracting impacted mandibular third molars may be indicated as part of the treatment of periodontal problems distal to the second molars, but it may not resolve issues and can even worsen the problem. Eleven patients with bilateral probing depths of at least 6 mm distal to the second molars had their third molars removed and a bioabsorbable collagen membrane placed on one side and a non-resorbable expanded polytetrafluoroethylene (ePTFE) membrane on the other. Nine months later both treatments were successful, with reductions in probing depth.

Comment: The small number of patients involved indicates the difficulty in finding appropriate patients – just finding the 11 people with two identical impactions mesio-angularly and horizontally (and matching other stringent inclusion criteria) took two years. The once-only surgical procedure technique using the resorbable membrane avoids damaging newly formed tissues and would appear to have advantages. However, there is much controversy on this topic, as indicated by the length of the discussion section in this paper and the number of related publications currently on library shelves.

Reference: *Journal of Periodontology* 2011;82:1404-1413

<http://www.joponline.org/doi/abs/10.1902/jop.2011.100466>

Tetric EvoCeram® Bulk Fill

The bulk composite without compromises

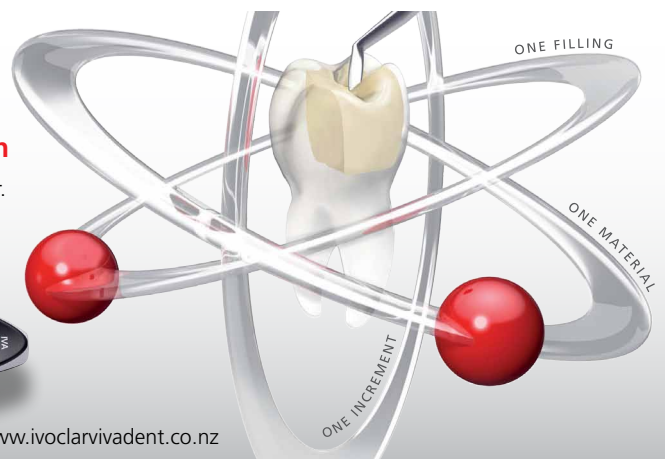
A new level of efficiency in posterior tooth restoration

- One filling** Teeth are filled and contoured without requiring a final layer.
- One material** The composite's smooth consistency enhances adaptation.
- One increment** The 4mm bulk increment technique streamlines filling procedures.

**ivoclar
vivadent:**
passion vision innovation



Freephone: 0508 IVOCLAR (486 252) | Website: www.ivoclarvivadent.co.nz



For more information, please go to <http://www.ivoclarvivadent.co.nz>

www.dentalreview.co.nz

a RESEARCH REVIEW publication

A comparison of conventional and new rubber dam systems in dental practice

Authors: Feierabend SA et al

Summary: Two hundred patients received at least one treatment with conventional rubber dam and one with a new system (OpraDam, Ivoclar Vivadent) introduced in 2005 and which requires no clamps or frame. Dental students, staff and patients completed questionnaires on the advantages and disadvantages of the systems and their preferences. The general preference of the patients was for the old system (52%). The insertion of both systems was considered easy, with the new dam needing clamps only 48% of the time. While the OpraDam outperformed the conventional system for anterior teeth, overall the preference was for the conventional dam.

Comment: The first published attempts at moisture control in the mouth were made in 1835, followed by Barnum's introduction of dams in 1869. Rubber dam use is still considered difficult and time consuming, so efforts to modify it to change these perceptions are laudable. Patients in this experiment rarely reported discomfort, and there are several publications reporting the excellent patient acceptance of dams. Repeating this experiment outside the confines of a dental school would be interesting.

Reference: *Operative Dentistry* 2011;36:243-250

<http://www.jopdentonline.org/doi/abs/10.2341/09-283-C?journalCode=odnt>

Teaching local anesthesia in dental schools: opinions about the student-to-student administration model

Author: Hossaini M

Summary: This study was an online survey to gather opinions on teaching of local anaesthesia. It involved 152 respondents from three dental schools. While respondents mostly agreed that they should practice on one another, almost 16% thought it was unethical to inject solely for the purpose of practice and training, and the majority thought opting out of the exercise should be an option. The results suggested that while it is desirable to learn a variety of injections, few are performed on a day-to-day basis. It may be realistic to teach just inferior dental blocks, and allow trainees to use their cognitive and clinical skills from this to apply other techniques.

Comment: Administering local anaesthetic injections to student colleagues (usually friends!) and being on the receiving end are probably enduring memories of the beginning of our clinical dental training. It is exciting but safe and is very much a rite of passage in undergraduate courses. We are reminded that there is a lack of affordable and practical simulation models available for this aspect of dental training.

Reference: *Journal of Dental Education* 2011;75:1263-1267

<http://www.jdentaled.org/content/75/9/1263.abstract>

Depth and distance perception of dentists and dental students

Authors: Dimitrijevic T et al

Summary: One hundred and sixty three undergraduates from three class year groups and 20 experienced dentists performed three tasks. These involved depth perception, distance estimation and writing. Stereopsis and visual acuity were also measured. The results were dramatic, with many having great difficulty gauging depths and distances.

Comment: This lengthy paper alerts us to the difficulties many have in assessing depths and distances. One student had poor visual acuity and also performed poorly on a cutting exercise; perhaps routine testing of new students to detect visual and perceptual problems would be worthwhile? Fortunately, a reduction in absolute error was noted with greater clinical experience.

Reference: *Operative Dentistry* 2011;36:467-477

<http://www.jopdentonline.org/doi/abs/10.2341/10-290-L>

Treating a maxillary midline diastema in adult patients: a general dentist's perspective

Authors: Chu CH et al

Summary: An account is given of the maxillary midline diastema and how it may or may not constitute an aesthetic problem. Five cases are then described, with treatment involving composite buildup, porcelain veneers and three with orthodontic components in their management.

Comment: A very clear, evidence-based account of managing the situation with a flowchart to help with decisions. The benefits of study models, diagnostic wax-ups and silicone stents/indexes are emphasised. Much more comprehensive than your average 'case report'.

Reference: *Journal of the American Dental Association* 2011;142:1258-1264

<http://jada.ada.org/content/142/11/1258.abstract>



New Zealand Dental Therapists' Association
(Incorporated)

Dental Review is also made available to Dental Therapists through the kind support of the New Zealand Dental Therapists' Association

Find healthcare jobs in your area

trademe
JOBS



www.trademe.co.nz/jobs

Frequent jaw-face pain in chronic whiplash-associated disorders

Authors: Häggman-Henrikson B et al

Summary: This experiment aimed to investigate the frequency of jaw-face pain in patients with chronic whiplash associated disorders (WAD). It involved a questionnaire given to 50 patients with chronic WAD and a similar group of healthy subjects (mean age 39 years). The main finding was that discomfort in the jaw and face was almost as frequent as neck pain and pain in the head and shoulders in the WAD group.

Comment: Whiplash is most commonly associated with traffic accidents but is also seen after some falls. Most (88%) reported pain in the jaw-face and also reported stiffness/numbness in the jaw-face. The high frequency of facial numbness found in this study has not been reported before, and suggests some degree of disturbed trigeminal nerve function.

Reference: *Swedish Dental Journal* 2011;35:123-131

<http://tinyurl.com/whiplash-related-discomfort>



Independent commentary by Associate Professor Nick Chandler of the Department of Oral Rehabilitation, University of Otago.

For full bio [CLICK HERE](#)

Research Review publications are intended for New Zealand health professionals

You're welcome to pick our brains.

Ask us about financial solutions today.

0800 273 916 > bnz.co.nz/medical



Laboratory efficacy of three compact toothbrushes to reduce artificial plaque in hard to reach areas

Authors: Yankell SL et al

Summary: There are hundreds of toothbrush designs available, with their most challenging task reaching the gingival, subgingival and interproximal regions. All aim to help patients who are sub-optimal with their brushing. This paper describes a model with simulated anterior and posterior teeth, which was used to test the ability of three brushes in removing artificial plaque.

Comment: The main reasons why we are poor at plaque removal are our poor techniques and brushing for too short a time. We need all the help we can get with brushes and other devices. This paper provides an interesting insight into how these things can be researched. The artificial plaque used was developed in 1995 and is pressure-sensitive, and the toothbrushing machine provides results that predict clinical performance.

Reference: *American Journal of Dentistry* 2011;24:195-199

<http://www.amjdent.com/Archive/Abstracts/2011/August%202011%20Abstracts.html>

Effect of sodium hypochlorite on human pulp cells: an in vitro study

Authors: Essner MD et al

Summary: This study used cultured human pulp cells obtained from extracted third molars and subjected them to sodium hypochlorite (NaOCl) concentrations from 0.04 to 0.33%. The lowest concentration did not affect the viability of the cells.

Comment: Pulp regeneration studies commenced in the 1960s, and today's treatment protocols vary greatly but may include full-strength (5.25%) NaOCl followed by antibiotic pastes. Research on much lower concentrations is now indicated. Nevertheless, full-strength solutions of hypochlorite have shown clinical success in revascularisation cases and also remain the most effective way to achieve haemostasis when treating an exposed pulp when reversible pulpitis is the diagnosis.

Reference: *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontics* 2011;112:662-666

<http://tinyurl.com/treating-exposed-pulp>

Subscribing to Research Review

To subscribe or download previous editions of Research Review publications go to

www.researchreview.co.nz

Privacy Policy: Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time.

Disclaimer: This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Association of pulp stones with coronary artery stenosis

Authors: Ezoddini-Ardakani F et al

Summary: Researchers have proposed that the pathogenesis of pulp stones is similar to that of calcified atheromas found in cardiovascular diseases. Sixty-one patients aged up to 55 years undergoing X-ray coronary angiography were invited to have panoramic dental radiographs taken. These films were viewed with a 4.5x magnifier. Pulp stones were counted and were present in 82% of patients who had at least one significant coronary artery stenosis. They were found in 48% of patients with normal coronary arteries.

Comment: Pulp stones were comprehensively reviewed by Wellington-based endodontist Radu Goga and his co-authors in 2008 (International Endodontic Journal 41:457-468). Stones are a somewhat forgotten subject until you are faced with being unable to see and access the orifices of root canals because they are in the way. The statistically significant findings in this paper raise the possibility that dental radiographs could be a screening method for some heart diseases.

Reference: Community Dental Health 2011;28:305-307

http://www.cdjournal.org/view.php?article_id=386&journal_id=40

Modified technique for vital bleaching of teeth pigmented by amalgam: a case report

Authors: Calazans FS, Miranda MS

Summary: A patient presented with a shallow amalgam occlusal restoration that had darkened a maxillary premolar. The tooth was isolated and bleached three times for 15 minutes with a 35% hydrogen peroxide gel, with a thorough wash with water between applications. The patient was then seen a week later for the same procedure. Opaque and translucent composite resins were then placed a further week later, giving a brighter tooth, the colour change being satisfactory two years later.

Comment: The potential adverse effects of this treatment are outlined, the key one of which is sensitivity, which was not a problem for this patient. Recommendations are made regarding the most appropriate provisional (temporary) restorations for use between visits, but the report does not reveal the material used for the patient described. The paper advises that teeth treated in this way cannot be permanently restored directly after the bleach procedure, as oxygen release may interfere with adhesion.

Reference: Operative Dentistry 2011;36:678-682

<http://www.jopdentonline.org/doi/abs/10.2341/11-061-T>

Congratulations

to Dr Jo Milne, Dentist from Milford, Auckland who is the winner of a Garmin nuvi GPS unit from our recent Dental Review subscriber survey.



Research Review FINE WINE CHRISTMAS OFFER

Choose from an exclusive mixed case of whites or pinot noirs

[CLICK HERE TO VIEW OFFER](#)

ALSO AVAILABLE...

Oral Health Research Review

Another useful summary from Research Review takes a closer look at general oral health. This quarterly publication is ideal for those working as hygienists or dental therapists or for anyone with a keen interest in evidence based oral health management. Expert commentary supplied by Dr Jonathan Leichter, DMD, Cert Perio (Harvard), University of Otago.



[Click here to subscribe](#)