

# Dental Review™

Making Education Easy

Issue 25 - 2011

## In this issue:

- > *Avulsed teeth*
- > *Prosthetic dogma*
- > *Oral contraceptives and periodontal health*
- > *Love Teeth Day*
- > *Root fractures*
- > *Virtual dental training*
- > *Disinfecting impressions*
- > *Inhaling orthodontic objects*
- > *Computerised skeletal age assessment*
- > *Nutritional knowledge*



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*

**Welcome.** Here is a thought for the beginning of the year. Our teachers taught us a lot of things which we use every day – but were they right? The second item in this issue discusses things we have largely accepted as 'gospel', but which are now being challenged on the basis of either a lack of evidence or some very recent research. I am pleased to report that my colleagues at the School of Dentistry are rather skeptical about almost everything, and are irritated on a regular basis by a lot of the material that comes across their desks. The future therefore bodes well for our current students!

Happy reading,

**Nick Chandler**

*Associate Professor*

**Department of Oral Rehabilitation, University of Otago**

[nickchandler@researchreview.co.nz](mailto:nickchandler@researchreview.co.nz)

## Treatment of avulsed teeth by oral and maxillofacial surgeons

**Author:** Krasner P

**Summary:** This review presents current thinking on replanting avulsed teeth, doing so from an oral surgeon's perspective; this is logical, as many accidents occur out of hours and present at hospital emergency departments. The paper considers prevention of cell crushing, maintaining periodontal ligament vitality and the best storage media to use. Treatment, including stabilisation, root canal treatment and monitoring are also covered.

**Comment:** This is an excellent and up-to-date review by an author who has clearly 'been there, done that'. He describes locating teeth retrieved from sports fields and presented in murky containers and the problems of fishing teeth out of milk cartons.

**Reference:** *Journal of Oral and Maxillofacial Surgery*. 2010;68(11):2888-2892.

<http://www.joms.org/article/S0278-2391%2810%2900583-5/abstract>



**NEW VENUE**

THE TRUSTS STADIUM,  
AUCKLAND

16th - 18th June 2011

[www.dentalexpo.co.nz](http://www.dentalexpo.co.nz)



## PLAQUE BIOFILM REMOVAL IS REQUIRED

### FROM HARD SURFACES

Regular mechanical cleaning provides "focused" or "targeted" energy to dislodge and remove the plaque biofilm from non-shedding hard surfaces.



### AND SOFT TISSUE

75% of the oral cavity is composed of soft tissue. Bacteria on these surfaces can quickly recolonise other dental surfaces.



Click here to read more clinical information on the adjunctive benefit of an essential oil-containing mouthrinse in reducing plaque and gingivitis in patients who brush and floss regularly.

**LISTERINE® REACH®**

Johnson & Johnson (New Zealand) Ltd, Auckland.  
DA999MT NZ6175/10

**As an adjunct to brushing and flossing, Listerine antiseptic Mouthwash penetrates and kills plaque biofilm**

Medicines have benefits and some may have risks. Always read the label and use only as directed. Listerine® Coolmint contains: Benzoic acid 0.12% w/v, Cineole (Eucalyptol) 0.0922% w/v, Ethanol 27.0% w/v, Thymol 0.064% w/v.

### Some dogmas related to prosthodontics, temporomandibular disorders and occlusion

**Author:** Carlsson GE

**Summary:** Many aspects of clinical dentistry are so well established they are called dogmas – beliefs or opinions considered to be true. This paper concentrates on several, searching for evidence from randomised controlled clinical trials (RCTs). The author points out huge gaps in the literature; for instance, there are no RCTs comparing a three-unit bridge to a single tooth implant to replace a missing tooth. Sections also consider situations where major simplification of procedures that save time and materials have no influence on quality or success of treatment.

**Comment:** The abstract states ‘Our lecturers at university taught us many useful things. But, as time goes by, what is still relevant?’ Do implants ‘solve’ all dental problems, is a facebow necessary for complete denture fabrication, and do patients need more than anterior and premolar teeth to have a functional dentition? Studies in medicine show that it takes an average of 17 years to implement the findings of clinical research studies into everyday practice. This paper is receiving a lot of interest across the dental literature.

**Reference:** *Acta Odontologica Scandinavica*. 2010;68(6):313-322.

<http://tinyurl.com/4zpeyn3>

### The impact of oral contraceptives on women’s periodontal health and the subgingival occurrence of aggressive periodontopathogens and *Candida* species

**Authors:** Brusca MI et al

**Summary:** Ninety-two females aged 19-40 years were divided into users and non-users of oral contraceptives (OCs) and then further subgrouped. Subgingival samples were cultured for *Candida* species and well-known periodontal pathogens. Patients taking OCs had deeper probing depths and significantly higher numbers of *Candida*. They also had a higher prevalence of *Prevotella gingivalis*, *P. intermedia* and *Actinomyces actinomycetemcomitans*.

**Comment:** This paper has significance, as the National Health and Nutrition Survey data suggested in 2005 that hormonal contraceptives were not a potential risk factor for periodontal disease. Seven *Candida* species were isolated in the study.

**Reference:** *Journal of Periodontology*. 2010;81(7):1010-1018.

<http://www.joponline.org/doi/abs/10.1902/jop.2010.090575?journalCode=jop>

### ‘Love Teeth Day’ campaign in China and its impact on oral public health – the twentieth anniversary

**Authors:** Dai J et al

**Summary:** Since 1989, the 20<sup>th</sup> of September has been designated Love Teeth Day across the whole of China, with the first campaign initiated two years before that. At that time, the ratio of dental professionals to the Chinese population was 1 to 50,000. The main activities are planned by a national committee for oral health, and community counselling of various types is the main activity. A questionnaire investigates the effect of the campaign, with remarkable improvements in the level of public knowledge of oral hygiene a feature. Tooth cleaning, toothbrush use and use of fluoride toothpastes have all markedly increased. Nearly half the population knows the exact date of Love Teeth Day.

**Comment:** A fascinating look at how oral health can be made part of everyday life across a massive population. The different themes and slogans used each year are relevant the world over.

**Reference:** *British Dental Journal*. 2010;209(10):523-526.

<http://www.nature.com/bdj/journal/v209/n10/abs/sj.bdj.2010.1039.html>

We'll take your business' pulse, before we prescribe.

bnz partners

UNIVERSITY OF OTAGO  
Te Whare Wānanga o Ōtago

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

Research Review publications are intended for New Zealand health professionals



28-29 May 2011  
Rydges Lakeland Resort, Queenstown

Visit: [www.oralhealthconference.com](http://www.oralhealthconference.com)  
to REGISTER NOW – The website contains a current programme and speaker information.

Earlybird Registration closes 1 March 2011.

For further information contact:  
The Conference Company  
Email: [nzdt11@tcc.co.nz](mailto:nzdt11@tcc.co.nz)  
Telephone: +64 3 365 2217

## Fracture necrosis: Diagnosis, prognosis assessment, and treatment recommendations

**Authors:** Berman LH et al

**Summary:** A 'dead' tooth with either no restorations or a small restoration and no history of trauma can be puzzling. In these cases, pulp necrosis may be the result of a longitudinal crack that extends from the occlusal surface to the pulp. In this study, 27 teeth with nonvital pulps were extracted and evaluated for presence and depth of fracture using an operating microscope and with micro-CT imaging. All the teeth had a fracture from the pulp chamber leading to an external surface.

**Comment:** The authors propose the term 'fracture necrosis' for this condition and the teeth they examined were molars and premolars. It is likely that many teeth like this are root canal treated and restored without the realisation that a crack is the problem. Their investigation suggests that the prognosis for these teeth is hopeless, and with bone loss evident, extraction must be considered. Their point that success must be measured not in months or years but in decades is a good one.

**Reference:** *Journal of Endodontics* 2010;36(3):442-446.

<http://www.jendodon.com/article/S0099-2399%2809%2901070-X/abstract>

## Virtual dental surgery as a new educational tool in dental school

**Authors:** Pohlenz P et al

**Summary:** Careful removal of bone without damaging adjacent hard and soft tissue structures is a feature of many minor oral surgical procedures. The student needs to know the concepts of the procedure and to have the dexterity to perform it. In this experiment the Voxel-Man simulator, originally designed for virtual middle ear surgery, was used to expose a mandibular tooth root apex without damaging adjacent teeth or the inferior dental nerve. Fifty-three dental students were involved and had observed an apicectomy beforehand. Almost all recommended the virtual simulation, with most considering the simulated force feedback good or very good.

**Comment:** Considerably different to the plastic and rubber of the familiar 'phantom' head, the students controlled a simulated drill in a stereoscopic mode with a virtual skull made from computed tomography data gathered from real skulls. With no previous experience of performing surgery the students were enthusiastic about this simulator and wanted more surgical procedures to try.

**Reference:** *Journal of Cranio-Maxillofacial Surgery.* 2010;38(8):560-564.

<http://tinyurl.com/4n9zvwg>

**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.

Search over **700 healthcare roles**



[www.trademe.co.nz/jobs](http://www.trademe.co.nz/jobs)

## Disinfection of dental impressions – compliance to accepted standards

**Authors:** Almortadi N et al

**Summary:** In this UK study an anonymous postal questionnaire about disinfecting impressions was sent to 200 dentists and 200 dental technicians, with return rates of 42% and 31%, respectively. Almost one-quarter of the dentists did not inform the laboratory about disinfection, with half of the technicians disinfecting the impressions. Almost all of the technicians had received blood-contaminated impressions, and 15% had found blood-filled voids when trimming the peripheries of impressions.

**Comment:** The British Dental Association produced advice sheets on this topic in 2003 and 2009 and sadly it seems that compliance has not improved; there is a need for good communication between the two professional groups. Another point to note is that some dentists identified impressions from patients known to be carriers of blood-borne viruses. This should be unnecessary if proper cross-infection procedures are followed, and it also raises ethical issues if the impressions are not anonymised. The response rates were disappointing, and the Discussion contains some valuable information about response rates and bias in dental surveys.

**Reference:** *British Dental Journal.* 2010;209(12):607-611.

<http://tinyurl.com/4drkymy>

**NEW ~ OUT NOW**

# Bone Health

Research Review

 **Click here to subscribe**



# Empress® Direct

Direct Aesthetic Composite

**NOW AVAILABLE!**

## The aesthetics of a ceramic ...with the convenience of composite

- Exceptional handling
- True-to-nature shades
- Simplified application
- Superior polish

Phone today for a FREE demonstration 0508 486 252

**ivoclar vivadent**  
passion vision innovation

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

## Medical emergencies in the dental office. Inhalation and ingestion of orthodontic objects

**Authors:** Bilder L et al

**Summary:** These authors searched the literature to find 18 reports of 24 cases of inhalation and ingestion of orthodontic appliances. Most objects were ingested and most patients were female. The majority (85%) happened outside the orthodontists' premises. Seven patients were seen in a hospital emergency department. One horror case involved perforation of the oesophagus while trying to see the missing object, followed by a thoracotomy.

**Comment:** Orthodontic work involves small components (often subject to force) and saliva. The lack of data seems unusual in the light of the volume of literature on bonding and failure of orthodontic brackets. A rubber dam may be used for some specific treatments or cases. The emergency protocol flowchart for inhalation/ingestion is relevant to all aspects of dentistry.

**Reference:** *Journal of the American Dental Association.* 2011;142(1):45-52.

<http://jada.ada.org/cgi/content/abstract/142/1/45>

## Computerized skeletal age assessment

**Authors:** Pavan Kumar M et al

**Summary:** Orthodontic treatment planning involves assessment of skeletal age and this may also be useful for forensic purposes. Radiography of the hand and wrist bones and cervical vertebrae may be used. These authors report a computer algorithm based on a mathematical formula derived from widths and heights of the 3<sup>rd</sup> and 4<sup>th</sup> cervical vertebrae as seen on a lateral cephalogram.

**Comment:** The program is free to download, and a three-dimensional alternative is under development. The method is reported to be more objective, more reproducible and faster and simpler than manual methods.

**Reference:** *Journal of Clinical Orthodontics.* 2010;44(10):598-601.

<http://216.24.153.198/archive/article-view.aspx?year=2010&month=10&articlenum=598>

## A comparison of the nutritional knowledge of dental, dietetic and nutritional students

**Authors:** Shah K et al

**Summary:** This study analysed completed questionnaires from 124 dental, dietetic and nutrition students in Cardiff. Their recommendations on between meal snacks were significantly different. Dental students were concerned with oral problems including acid erosion while dietetic students were more concerned with obesity and other general health problems. A little over a third of the dental students considered they had sufficient training in the dietary management of patients.

**Comment:** A survey in 1995 of the dental knowledge of nutritionists found that only half recognised dental caries as a bacterial infection and 66% incorrectly linked caries to the total sugar concentration of foods. This new survey suggests consistent guidelines on nutrition would be helpful; dentists may need more general health information and the nutritionists more advice about oral health.

**Reference:** *British Dental Journal.* 2011;210(1):33-38.

<http://www.nature.com/bdj/journal/v210/n1/full/sj.bdj.2010.1184.html>

**Trust in Prevention**  
NZDHA Conference 2011

**17-18th June 2011**  
The Trusts Stadium Auckland

Principle Speakers  
Nick Cole  
Prof John Tagg  
Dr David Dalley

**NZDHA** [www.nzdha.co.nz](http://www.nzdha.co.nz)

**Subscribing to Research Review**  
To subscribe or download previous editions of Research Review publications go to [www.researchreview.co.nz](http://www.researchreview.co.nz)

**NEW ~ OUT NOW**

**Smoking Cessation Research Review™**

Click here to subscribe

**ALSO AVAILABLE...**

**Oral Health Research Review**

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

**Click here to subscribe**