

Volume 61 Number 3  
June/July 2015

# JIDA

Journal of the Irish Dental Association  
*Iris Cumainn Déadach na hÉireann*



irish dental association

## DON'T PANIC

Ebola virus disease: review and  
implications for dentistry in Ireland



Professional and practice  
development

**STEPPS™**



Digital planning

**SIMPLANT®**



Regenerative solutions

**SYMBIOS®**



Implants

**ANKYLOS®**

**ASTRA TECH  
IMPLANT SYSTEM**

**XiVE®**



Restorations

**ATLANTIS™**

# Comprehensive solutions for all phases of implant dentistry

**Deliver lasting patient-specific outcomes with premium solutions  
designed for long-term function and optimum aesthetics**

**Want to get started in implant dentistry?**  
Learn to restore dental implants through a  
local implant partner or a 'RELAX' event  
near you. Visit:



## Why not join us?

☎ UK: 0845 450 0586

☎ Ireland: 00 44 845 450 0586

🌐 [www.dentsplyimplants.co.uk](http://www.dentsplyimplants.co.uk)

✉ [implants.uk@dentsply.com](mailto:implants.uk@dentsply.com)





118



120

## 109 EDITORIAL

## 111 PRESIDENT'S NEWS

## 113 NEWS

## 118 QUIZ

## 120 FEATURE: New Code of Practice on infection prevention and control

## 124 FEATURE: IDA commentary on new codes

## 125 FEATURE: New Dental Council guidelines on CPD

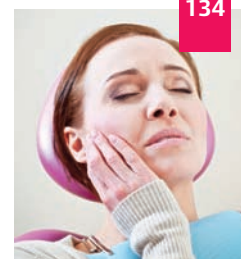
## 127 INTERVIEW: Former FDI President Dr Michèle Aerden

 129 MEMBERS ONLY | MEMBERS ONLY | MEMBERS ONLY  
 IDA advocates on behalf of members; Report on the IDA Annual Conference 2015; Managing and preventing underperformance


127



129



134

## 134 PRACTICE MANAGEMENT: Timing is everything

## 136 BUSINESS NEWS: Business in brief

## 138 PEER-REVIEWED

 138 A frontal swelling with a cautionary tale  
*M Connolly, I Siddique, M Nusrath*

 141 Ebola virus disease: review and implications for dentistry in Ireland  
*S Galvin, SR Flint, CM Healy*

 144 Mandibular implant-supported overdentures: attachment systems, and number and locations of implants – Part II  
*A Warreth, C Byrne, AF Alkadhimi, E Woods, A Sultan*

## 150 ABSTRACTS

## 152 CLASSIFIEDS

## 154 DATES FOR YOUR DIARY

 Independently audited by the  
 Audit Bureau of Circulation,  
 London.


## EDITOR

Professor Leo F.A. Stassen

## DEPUTY EDITOR

FRCS (I), FDSRCS, MA, FTCD, FFSEM, FFDRCSI, FICD  
Dr Dermot Canavan BDentSc, MGDSc(Edin), MS(UCalif)

## EDITORIAL BOARD

Dr Iseult Bouarroudj BDS NUI

Dr Michael Crowe BSc BDentSc DPDS (Bristol)

Tina Gorman RDN, FAETC, Cert Conscious Sed.

Dr Peter Harrison BDentSc MFD DChDent

Dr Mark Kelly BA BDentSc

Dr Christopher D. Lynch BDS PhD MFDRCSI

FDS (RestDent)RCSI FACD FHEA

Donna Paton RDH

Dr Ioannis Polyzois DMD, PhD, MDentCh, MMedSc

Dr Ciara Scott BDS MFD MDentCh MOrth FFD (RCSI)

Dr Seamus Sharkey BDS NUI FRACDS (Syd) MFDSRCS  
DChDent (Prosthodontics) FFDRCSI

Dr Simon Wolstencroft BDS FDSRCS MScD MOrth FDSOrth

Dr Alastair Woods BA BDentSc

## IDA PRESIDENT

Dr Anne Twomey

## IDA CHIEF EXECUTIVE

Fintan Hourihan

## CO-ORDINATOR

Fionnuala O'Brien

The *Journal of the Irish Dental Association* is the official publication of the Irish Dental Association. The opinions expressed in the Journal are, however, those of the authors and cannot be construed as reflecting the Association's views. The editor reserves the right to edit all copy submitted to the Journal. Publication of an advertisement does not necessarily imply that the IDA agrees with or supports the claims therein.

For advice to authors, please see: [www.dentist.ie/resources/jida/authors.jsp](http://www.dentist.ie/resources/jida/authors.jsp)

Published on behalf of the IDA by Think Media, 537 NCR, Dublin 1  
 T: +353 1 856 1166 [www.thinkmedia.ie](http://www.thinkmedia.ie)

## EDITORIAL

Ann-Marie Hardiman, Paul O'Grady

## DESIGN/LAYOUT

Tony Byrne, Tom Cullen, Ruth O'Sullivan

## ADVERTISING

Paul O'Grady [paul@thinkmedia.ie](mailto:paul@thinkmedia.ie)

Irish Dental Association Unit 2 Leopardstown Office Park, Sandyford, Dublin 18.

Tel: +353 1 295 0072 Fax: +353 1 295 0092 [www.dentist.ie](http://www.dentist.ie)

Follow us on Facebook (Irish Dental Association)  
 and Twitter (IrishDentists).



Total average net circulation 01/01/14 to 31/12/14: **3,383 copies** per issue.  
 Circulated to all registered dentists in the Republic of Ireland and Northern Ireland.



# The only† sensitivity toothpaste that delivers...

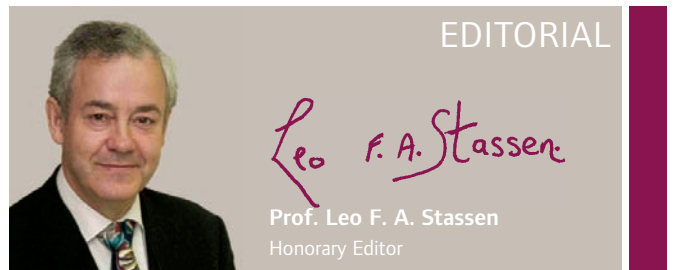


## Bring it on!

Now you can treat dentine hypersensitivity without compromise. Colgate® Sensitive Pro-Relief™ toothpaste works instantly for on the spot relief;\* delivers long-lasting results for ongoing sensitivity relief and contains 1450ppm fluoride for maintaining healthy teeth.

## Three benefits all at once





EDITORIAL

Leo F. A. Stassen

Prof. Leo F. A. Stassen  
Honorary Editor

## Building on solid ground

Two new codes of practice from the Dental Council and an interview with an international leader in our profession are among the highlights of this edition.

The new Codes of Practice from the Dental Council cover the vital areas of infection prevention and control, and continuing professional education. They are the product of significant work by colleagues with expert knowledge, and have also been subject to considerable consultation. The result of that consultation has been a noticeable improvement in the focus, and therefore the likely effectiveness, of the Codes. We are fortunate to have excellent articles relating to both new Codes of Practice in this edition of the *Journal*.

The President of the Dental Council, Dr Eamon Croke, has written a superb article describing the evolution of the new Code of Practice relating to: Infection Control and Prevention from the 2005 Code. In it, he summarises the contents and states: "The new Code is the ground on which a culture of patient safety can be built in every dental premises – a culture of shared attitudes, values and practices by all in dental healthcare. It is a culture that places patient and staff safety centrally; it is a culture that allows dentistry consistently to say "we care for you!"

Dr Marielle Blake gave an interview to the *Journal* on the other new Code launched by the Dental Council – that relating to the requirements for continuing professional development (CPD). The important point is that the Council has identified seven core areas of verifiable CPD, each with a recommended time allocation. Dr Blake is direct in her explanation of why the Council has moved in this direction: "In reviewing the Council's fitness to practise cases, certain areas were identified, which were causing difficulties with our registrants – these involved communication, record-keeping and conflict resolution. these topics are now included in the core subjects".

.....  
*The Council has identified seven core areas of verifiable CPD, each with a recommended time allocation.*

The Association is robust in its support of the Codes – having been concerned in its critique of the initial draft of the Code on infection prevention and control. Our Chief Executive Fintan Hourihan outlines that support in his article on the subject, noting that: "Setting out acceptable standards rather than unattainable doctrines will be shown to produce a better mitigation of risk in years to come, I have no doubt." These are wise words and show the extent to

which the profession is succeeding in listening to each other's representatives in the process of developing best practice. And he has committed the Association to support for members: "Again, we will be redoubling our efforts to assist dentists to meet their CPD requirements, taking account of the new guidance from the Dental Council".

### Notable coup for WiDEN

The Women in Dentistry Network (WiDEN) scored a notable coup by getting the first female President of the FDI, Dr Michèle Aerden, to address their recent meeting in Dublin. With their assistance, the *Journal* secured an interview with this outstanding leader of our profession. Dr Aerden's work at the World Health Organisation (WHO) to integrate oral health with overall health was recognised when the WHO passed a resolution acknowledging the intrinsic link between oral health, general health and quality of life. The fact that Dr Aerden came to dentistry a little later than normal in life only adds to the impressiveness of her achievements and her story is captured well by our colleague Ann-Marie Hardiman. It's the second major interview with an international leader in our profession in two editions, coming immediately after our interview last edition with the President of the ICD, Dr Joe Kenneally.

### Strong science

In our peer-reviewed section, we have a cautionary tale about a frontal swelling; a review of the implications of the Ebola virus outbreak for Ireland; and, the second part of the article on mandibular implant-supported overdentures. Our thanks as always to Dr Ioannis Polyzois for the excellent abstracts in the *Journal*.

### Other items

In the members only section, Fintan Hourihan reports on the recent stakeholders' consultation day on the National Oral Health Policy; there is a report and photographs from the Annual Conference; and, Sarah Gill writes on managing and preventing underperformance. Dr Martin Foster of DPL also gives us an interesting perspective on the importance of timing in responding to patients. Even if you read only one of the many articles in this edition, we hope that it will enhance your work and your knowledge – and if you manage to read several, that you will be very well informed on latest developments in dentistry in Ireland.

**CALL FOR PAPERS**

The Editorial Board of the *Journal* has decided to open its pages to interesting, successful or difficult case studies encountered by readers in their normal working life. Further details in the next edition.



DENTAL PROTECTION MORE THAN DEFENCE

Dental  
Protection



# DENTAL PROTECTION YOUR PROFESSIONAL PARTNER

Supporting you  
throughout your career



Advice through the  
largest worldwide team of  
dentolegal experts



Protection from  
the costs of clinical  
negligence claims



Support with CPD through  
events, workshops  
and publications

Peace of mind  
when you need it most

**DENTAL PROTECTION MORE THAN DEFENCE**

For membership information call 1800 509 441

[www.dentalprotection.org](http://www.dentalprotection.org)



## PRESIDENT'S NEWS



Dr Anne Twomey  
IDA President



# Change in the air

Our new IDA President sets out her priorities for the coming year.

Having only just recovered from the whirlwind that was the 2015 Annual Conference in Cork, let me begin by thanking you all for the honour you have bestowed on me by nominating me as President of the IDA. It truly is a wonderful privilege and I am grateful to everyone who has helped me in so many different ways throughout my time in the Association and indeed throughout my career as a dentist.

It would be remiss not to pay tribute to my predecessor Dr Peter Gannon, who was an outstanding President and who has left me with a tough act to follow. I know I can count on Peter's sage advice in the coming year. Likewise, there are many colleagues and friends in the Munster Branch, in my practice and throughout the profession and the Association as a whole to whom I owe a deep debt of gratitude.

I would like to congratulate all those who helped to make the Annual Conference such a great success, particularly our organising committee, who played such a huge role in preparing and for such a well-received conference. I know that our newly appointed Vice-president Dr PJ Byrne will make sure that the same high standard is maintained at the 2016 Conference in Galway.

I also want to thank the departing members of the Board of Directors, Drs Sean Malone and Nuala Carney, for their outstanding service to the Association, and to welcome our newly appointed members, including Drs Frances O'Callaghan and Gillian Smith.

### Media attention

A very positive feature of the Conference was the strong media interest shown in the concerns we voiced in regard to hidden sugars in sports drinks and this is an area I feel needs to be prioritised in the year ahead. I am keen to promote links with the sports governing bodies and all who have an interest in promoting oral health but who may not be fully aware of the extent of the hidden sugars in so many so-called energy drinks. It was truly shocking to learn that as many as 54 alternatives to sugar are listed on labelling for sports drinks and clearly there needs to be a huge investment in education and awareness.

### Winds of change

It has been notable that with a general election imminent there is a discernible change in the air as regards the interest of politicians in dental health. I have had a number of very encouraging discussions already with the Minister for Health Dr Varadkar, and with representatives from other political parties, which suggest to me that we really now have an opportunity to push the oral health agenda and to ensure that it receives its rightful place in the manifestos of the political parties in the coming months. As an Association we are taking steps to bolster our public affairs resources and I will be seeking the assistance of as many members as possible when election time nears.

### Representing the Association

One of my first official engagements was to attend the WIDEN seminar, where Dr Michèle Aerden was a compelling speaker who offered inspiration to us all. Soon after, I was on the road again to attend the stakeholders' consultative conference organised by the Department of Health in Thomond Park. It was a very stimulating and interesting day and it was certainly encouraging and refreshing to see members of the dental profession from so many different backgrounds involved and their views sought on the day. Obviously, we all want to see the fruits of the exercise and will continue to engage with the Chief Dental Office, Dr Kavanagh, and her advisers.

On a separate note, members will have received a letter encouraging their participation in a survey in relation to corporate governance. With a rapidly changing environment we need to ensure that our governance arrangements are fit for purpose and we should aspire to be best in class as regards the running of the organisation in a fair, transparent and effective manner.

Finally, I am looking forward to meeting plenty of members in the coming year and to representing the Association and the profession with many other interest groups. We are acutely aware of the benefit of building alliances with other organisations outside oral health and this will be very much a priority for the new Board of Directors and for myself as President.

# Xylitol explained: understanding its oral health benefits

By Michael Dodds, BDS, PhD

For more information, visit [wrigleyoralhealthcare.ie](http://wrigleyoralhealthcare.ie)

The prospect of a sugar substitute that actively helps to decrease the rate of dental caries seems almost too good to be true.<sup>i</sup> Interestingly, research suggests xylitol, one of the sugar alcohols collectively known as ‘polyols’, does exactly that and can be a powerful ingredient for oral health tools, such as sugar-free gum.

## What is xylitol?

Xylitol is a five-carbon sugar polyol approved for use in foods, pharmaceuticals, and oral health products. It occurs naturally and can also be manufactured, which is the predominant method to obtain xylitol today. Xylitol is bacteriostatic, inhibiting the growth of bacteria.<sup>ii</sup> The oral health benefits of xylitol relate to its impact on Mutans Streptococci (MS) in the plaque and saliva. Xylitol disrupts the energy production processes of MS, leading to cell death. Studies have shown that people who consumed clinically effective levels of xylitol demonstrated MS strains which had a reduced capacity to adhere to teeth and a reduction in other virulence properties.<sup>iii</sup> These benefits are particularly relevant in the context of modern eating habits, as people are eating more frequently throughout the day, putting teeth at higher risk of decay.<sup>iv, v</sup> Plaque pH falls due to bacterial acid production after eating or drinking fermentable carbohydrates. When used in oral care products such as sugar-free gum, xylitol can help change the bacterial environment in the mouth and help keep teeth healthy after eating and drinking

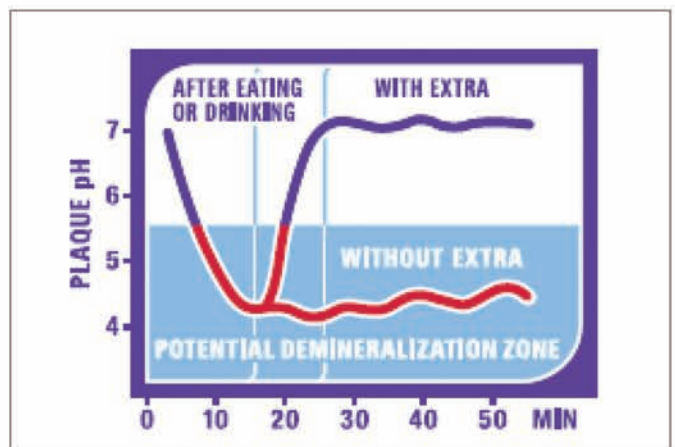
## Clinical evidence for xylitol

Clinical studies have demonstrated a decrease in both overall caries rates and the rate of progression of caries in children exposed to daily xylitol use for 12 to 40 months, and long-term benefits in caries reduction have been demonstrated up to five years after a person ceased consuming xylitol. Studies of sugar-free gum containing xylitol have consistently shown a significant reduction in the incidence of caries over time.<sup>iii</sup> In a review article published in the Journal of Dental Education which analysed

the evidence from xylitol studies involving gum between 1966 and 2001, the author concluded that “the highest caries reductions were observed in subjects using xylitol; these findings suggest that the replacement of sucrose with sorbitol and xylitol may significantly decrease the incidence of dental caries.”<sup>vi</sup>

## The link between xylitol and sugar-free gum

Studies demonstrating the oral health benefits of xylitol-containing sugar-free gum have not differentiated between precise benefits of chewing sugar-free gum and benefits of xylitol itself. This is because the ingredient and the mechanism of chewing sugar-free gum have both, independently, been proven to provide oral health benefits. Sugar-free gum is a convenient, accessible and enjoyable oral care tool which patients can use after eating and drinking while on the go. Chewing sugar-free gum promotes the natural protective mechanisms of saliva. Stimulated saliva enhances the mouth’s natural ability to fight dental disease by clearing the mouth of food debris, neutralizing plaque acids, and supporting tooth remineralisation. Sugar-free gum has the potential to play an important role alongside other oral hygiene behaviors, and the addition of xylitol to sugar-free gum is a promising way to deliver the proven oral health benefits to patients.



## About the author

Michael Dodds, BDS, PhD is Oral Health Lead Scientist at the Wrigley Company, based in Chicago, with responsibility for developing scientific support for the oral

health benefits of chewing sugarfree gum. He holds a dental degree from the University of Edinburgh and a PhD in Dental Science from the University of Liverpool.

i. Wäler SM, Rella G. [Xylitol, mechanisms of action and uses]. *Nor Tannlaegeforen Tid*. 1990;100:140-3.

ii. Nayak PA, Nayak UA, Khandelwal V. The effect of xylitol on dental caries and oral flora. *Clin Cosmet Investig Dent*. 2014;6:89-94.

iii. AAPD. Guideline on Xylitol Use in Caries Prevention. Available from: [http://www.aapd.org/media/Policies\\_Guidelines/G\\_XylitolUse.pdf](http://www.aapd.org/media/Policies_Guidelines/G_XylitolUse.pdf) Last accessed 3 February 2015.

iv. Euromonitor International. Home Cooking and Eating Habits: Global Survey Strategic Analysis, 30 April 2012. Available at: <http://blog.euromonitor.com/2012/04/home-cooking-and-eatinghabits-global-survey-strategic-analysis.html> Last accessed 3 February 2015.

v. ADHA. Diet and Nutrition Implications for Oral Health. Available from: <http://www.adha.org/ce-course-7#factors> Last accessed 3 February 2015.

vi. Hayes C. The effect of non-cariogenic sweeteners on the prevention of dental caries: a review of the evidence. *J Dent Educ*. 2001;65:1106-9.



## Restoring dental benefits

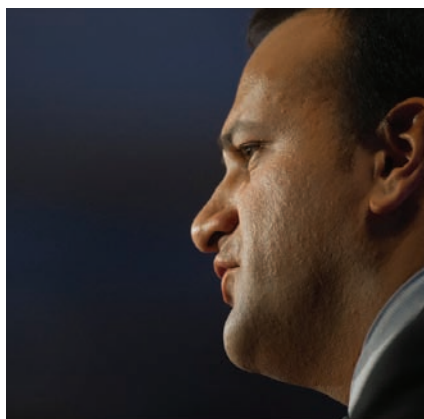
The CEO of the Irish Dental Association, Fintan Hourihan, recently wrote to the Minister for Health, Dr Leo Varadkar TD (right), to seek his support in the Association's call on the Government to reinstate benefits previously available under the PRSI and medical card schemes.

Mr Hourihan drew attention to new research indicating a notable rise in the number of people with severe dental infections requiring hospital admissions since the State made savage cuts to the PRSI dental scheme in 2010. The research shows a 38% increase in the number of patients admitted to hospital with severe infections in 2011 and 2012, and indications are that there has been a further 400% increase in the nine months since July 2014.

The letter emphasises that a focus on prevention and early treatment has always been critical to maintaining good oral health, and pleads once again for the restoration of essential treatments available under the DTBS.

### Patient safety

The letter also made reference to patient safety concerns related to dental treatment obtained outside this jurisdiction, or from dentists not registered to practise here. He stated the Association's concern that the Dental Council does not appear to have the powers to regulate and, if



necessary, sanction dentists where standards of care are far below those practised by the majority of the profession. He pointed out that these controversies add urgency to the call for early publication of new dental legislation.

### Minister's response

In his response to the Association, Dr Varadkar agreed that a restoration of the DTBS for people who pay PRSI would be desirable, stating that the DTBS for PRSI contributors is a form of universal health insurance, and thus is in keeping with Government policy. He undertook to discuss the issue with Minister Lynch in the Department of Health and Minister for Social Protection Joan Burton, as the Minister with responsibility for the scheme, to see what can be achieved in this matter.

## Huge savings for IDA members again as rise in indemnity costs slows

Dental Protection has announced increases of less than 3% in professional indemnity subs for dentists in Ireland from April 1, 2015.

DPL has also confirmed that significant discounts will be offered to dentists who can prove they hold membership of the Irish Dental Association. Furthermore, dentists who engage in DPL-approved CPD/risk management activities can also save a further 15% in their subscriptions.

For dentists in general practice for at least three years post graduation, annual savings of up to €1,700 are available to IDA members who avail of the full 15% discount available for risk credits. For dentists working in the HSE, where indemnity is provided by the Clinical Indemnity Scheme (CIS),

and in membership of the IDA, total savings can range from €124 to €268 per annum (for dentists who work up to 150 hours privately) and up to €663 where they also work between 150 and 500 hours in settings not covered by the State's CIS.

In response to concerns expressed by dentists, and indeed the IDA, a simplified claim form has been devised by DPL for dentists seeking to claim risk credits.

Meanwhile, we understand that DPL subscriptions for dentists in the UK are set to increase by around 21% on average.

The fact that there has been a stabilisation of the number of negligence claims in Ireland explains the smaller rate of increase here. Moreover, the success of the IDA Dental Complaints Resolution Service is seen as having made a significant contribution to the fall in claims and litigation, and ultimately in the rate of increase in subscriptions for Irish dentists.

no more  
compromises



The Tapered Internal family of dental implants provides excellent primary stability, maximum bone maintenance and soft tissue attachment for predictable results.

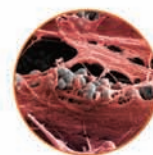
### restorative ease

45° conical internal hex connection creates a robust, biologic seal and is color-coded for quick identification and component matching



### connective tissue attachment

Laser-Lok uniquely creates a physical connective tissue attachment and biologic seal



### bone attachment

Laser-Lok® microchannels achieve superior osseointegration



### universal surgical kit



For more information, contact  
Telephone: +44 (0)1344 752560  
Email: [infouk@biohorizons.com](mailto:infouk@biohorizons.com)  
[www.biohorizons.com](http://www.biohorizons.com)

**BIOHORIZONS®**  
SCIENCE • INNOVATION • SERVICE

## Dr Gerry McKenna delivers Spring Invitational Lecture in Switzerland



Dr Gerry McKenna of Queen's University Belfast delivered the 2015 Spring Invitational Lecture at the University of Bern on May 28. He was invited by Prof. Martin Schimmel, Head of Gerodontology and Removable Prosthodontics, and Prof. Adrian Lussi, Director of the Faculty of Dentistry. The title of his presentation was 'Managing the Ageing Population: an Evidence-Based Approach to Gerodontology'. Gerry is current President of the European College of Gerodontology, and discussed a range of issues including dental management of older patients, nutritional outcomes and health economics.

## Dental care for Chernobyl children

The Dental Outreach Programme of Chernobyl Children International had a very successful trip to Vesnova Orphanage in Belarus during Easter this year. This project was started in 2006 by Kerry-based dentist Dr Marcas Mac Domhnaill and dental nurse Mary Sugrue. The project has gone from strength to strength, having included many volunteer dentists and dental nurses from Ireland in the past nine years. 2016 will mark the 30th anniversary of the Chernobyl nuclear accident and the 10th anniversary of the dental project. There is still a need for dental care in the institutions and orphanages in Belarus. The children and teenagers in these institutions are most grateful for the dental care provided to them by Irish volunteers. Indeed, every volunteer states that they receive much more themselves as volunteers, than they could ever give to these children. During the most recent dental trip, 180 children were treated within the orphanage. Priority was given to scaling teeth to improve oral hygiene, along with educating the carers and nurses. It is hoped that this will reduce the need for fillings and extractions in the future.

Dental volunteers are always welcome. For those interested in volunteering or in organising a fundraising event for the dental project, please contact Marcas Mac Domhnaill at [fiacloir@gmail.com](mailto:fiacloir@gmail.com), or Mary Sugrue, Tel: 087-373 3566.

## Public service pay talks update

Talks have commenced between the Government and public service unions on unwinding the severe pay cuts imposed following the collapse of the public finances in 2009.

The Irish Dental Union is representing members employed in the public service and also those contracted to provide services to the State as part of this process.

At their recent meeting, the IDU sought reversal of the pension levy and pay cuts imposed on our public service members. With specific reference to dental reforms, we highlighted the unacceptable delays and non-implementation of the agreement we reached with the HSE in 2011 as part of the movement from 32 community care areas to 17 integrated service areas. The 20% net reduction in dental staff positions and the absence of a job evaluation scheme to take account of the extra responsibilities assumed by members who took on significantly enhanced roles in recent years were also highlighted by the Union.

## FEMPI and Medical Card contractors

The Union has separately been representing the concerns of its members in general practice who were also adversely affected by cuts to their professional fees as part of the FEMPI process. We wrote to the Minister for Public Expenditure and Reform recently, insisting that our general practitioner members should also have the benefit of an unwinding of the FEMPI cuts on a basis no less favourable than that which emerges for public servants.

In response, we have been advised that "the intention is that the Department of Health will put in place a process involving the representatives of contracted professionals in the health sector who have been affected by FEMPI; following on from the DPER engagement with the public sector unions. A formal communication will follow in due course."

Further updates on the progress of talks for IDU members will issue in due course.







***Listerine® Advanced Defence Gum Treatment cuts gingival bleeding by 50.9% in just 4 weeks<sup>1</sup>***

Introducing the latest in the professional range from LISTERINE® – a twice-daily mouthwash **clinically proven to treat gum disease as an adjunct to mechanical cleaning.**

Advanced Defence Gum Treatment is an alternative to chlorhexidine-based remedies. It's formulated with unique LAE (Ethyl Lauroyl Arginate) technology that forms a physical coating on the pellicle to prevent bacteria attaching, and so interrupts biofilm formation.

When used after brushing it treats gum disease by reducing bleeding; 50.9% ( $p < 0.001$ ) in only 4 weeks.<sup>1</sup>

In addition, Advanced Defence Gum Treatment is **designed to not cause staining.**<sup>2</sup>

PART OF THE  
**LISTERINE®**  
ADVANCED DEFENCE RANGE



**References:**

1. Bleeding Index Reduction DOF 1 – 2013 (LAEBBA0001), 50.9% reduction in whole-mouth mean Bleeding Index at 4 weeks.
2. DOF 2 – 2013 (UNKPLT0006).

IRE/LI/15-1170

**Advanced Defence against gum disease**





## This year's Sensodyne Sensitive Dentist Awards to be held in the RDS

Sensodyne and the *Journal of the Irish Dental Association* are, once again and together with the Irish Dental Association, organising the Sensodyne Sensitive Dentist of the Year Awards. Last year for the first time, the Awards were

presented at a Gala Ball in December. It was such a success, with demand significantly greater than we could accommodate, that we are moving venue. The RDS in Ballsbridge can take a greater number of people and so that is where we – and we hope you – will be on Saturday, December 5. Put it in your diary today. The closing date for the Awards this year is a month earlier at September 30. You are encouraged to send back the postcard that is attached to the wrap around this edition of the *Journal* so that you can receive the necessary materials for your surgery.

### Will you still be smiling at the end of the year?

#### Make sure your practice is profitable in 2015

As Ireland's only specialist dental accountants we're here to help you control your practice costs

**QUARTERLY ACCOUNTS**

**PAYROLL SERVICES**

**TAX CONSULTANCY**

**COST OF TREATMENT**

Medaccount offer a full range of specialist dental accounting support and advisory services for Associates, Principals, Expense Sharing Partners and Hygienists.

#### MedAccount Services

96 Lower Georges Street

Dun Laoghaire

Co Dublin

Tel: 01 280 6414

Email: info@medaccount.ie

**FIRST  
CONSULTATION  
FREE**

First consultation FREE OF CHARGE with no obligation to engage



Host Collette Fitzpatrick interviews overall winner Dr James Turner.



Festive winners: (back, from left) Drs Anna Zwolinska, Vincent O'Connor, and Aidan Higgins with James Turner.

**December  
5  
Saturday**



**SENSODYNE**



journal of the irish dental association  
Iris Cumainn Déadach na hÉireann



# WILL YOU BE IRELAND'S MOST SENSITIVE DENTIST IN 2015?

The search for the 2015 Sensodyne  
Sensitive Dentist of the Year has commenced.

This awards programme showcases the marvellous work of Irish dentists  
– and all through the words that mean most: those of your patients.

There has been a huge entry in each of the recent years.

Please note the closing date of September 30 and the Gala Awards Ball is on  
December 5 this year. Send back the postcard from the wrap around this Journal  
and you will receive your Sensodyne Sensitive Dentist of the Year nomination pack.



For more information and for full terms and conditions visit  
[www.sensodynesensitivedentist.ie](http://www.sensodynesensitivedentist.ie)



## Getting Long in the Tooth

Friday October 2 will see our bi-annual Retirement Day Seminar take place at the Radisson Hotel, Dublin Airport. This is a very popular event with those members who are thinking of or intending to retire in the next while. The day, which is only open to IDA members, will cover topics such as 'Looking after your health in retirement', 'Selling on a dental practice', 'Legal requirements on retiring, including employment law and wills and property law', 'Planning your finances for retirement', and 'How will retirement change my life?' as well as the opportunity to meet with colleagues and experts on the day. Booking forms will be issued shortly. For further information, contact Elaine at IDA House.



## Taking the case to Europe

The Association is actively involved with the Council of European Dentists in organising an event in the European Parliament in June entitled Oral Cancer: Dentists Saving Lives. The success of Mouth Cancer Awareness Day is reflected in the fact that Dr Conor McAlister and mouth cancer survivor Lia Mills will be making contributions on their experiences and lessons that can be learned from increasing awareness of mouth cancer. The event will feature a number of other renowned speakers and will hopefully attract a significant number of MEPs and their representatives.

## WiDEN welcomes former FDI President



An enthusiastic group gathered in the DDUH to hear Dr Michèle Aerden, first female President of the FDI, address the Women in Dentistry Network. Pictured are Dr Nuala Carney, IDA CEO Fintan Hourihan, Dr Aerden, and IDA President Dr Anne Twomey. (See page 127 for an in-depth interview with Dr Aerden.)

## Quiz

Submitted by Dr Sheila Galvin.

### Photo 1

1. What is the diagnosis of these red patches with white borders on the tongue, which move around and are occasionally symptomatic?
2. Does this condition need any further investigation or treatment?
3. This condition is often associated with what other tongue changes?



### Questions (answers on page 151)

### Photo 2

1. What is the abnormality of the tongue shown?
2. What are the most common underlying causes?





# Compliance Begins with Good Planning

• Local Decontamination Unit (LDU) Design, Planning and Installation • Cabinetry

Visit one of our showrooms: **Dublin • Cork**

For details about Decontamination and The Code of Practice Education evenings please call your local office.

**DIRTY** → **CLEAN**

SCICAN Statim 2000 G4

SCICAN Hydrim C61WD64

FARO SK07

Melag Vacuklav 31B+

BA International DAC Universal

Miele G7881

From your first meeting with one of our decontamination specialists, Henry Schein Ireland will provide you with excellent service. Regardless of your budget or surgery size, we will assist and advise you on all your LDU (Local Decontamination Unit) Design requirements and also any compliant consumables.

**Decontamination Specialists:** Jim Way 086 8353812 Richard Kenny 086 6069628

• Software • Decontamination • Consumables • Equipment • DDX • Education • Implants • CAD/CAM • Lasers • Digital Imaging • Service & Repairs • Business IQ • Laboratory

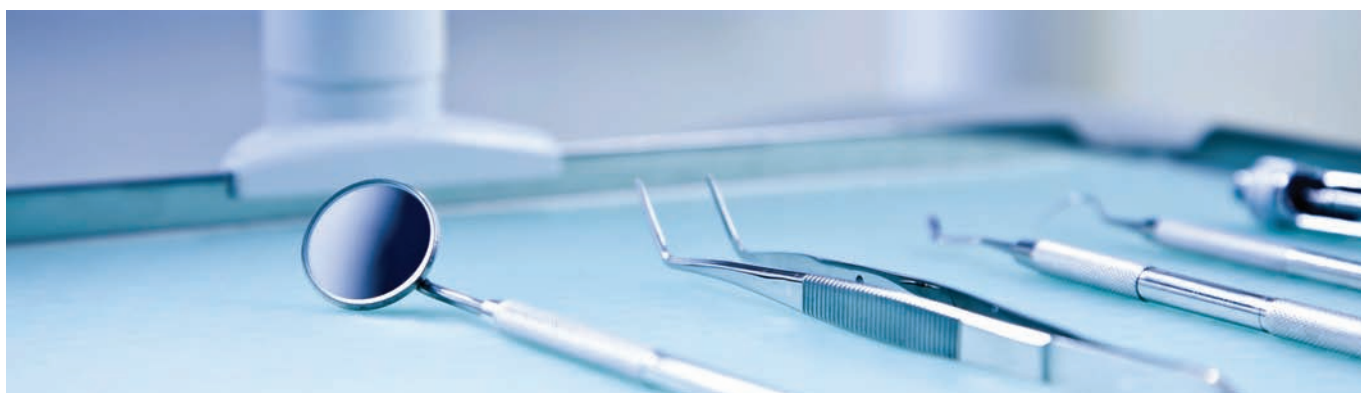
DUBLIN 01 456 5288  
CORK 021 429 7818

EMAIL [iesales@henryschein.ie](mailto:iesales@henryschein.ie)  
ONLINE [henryschein.ie](http://henryschein.ie)  
LIKE US [f](https://www.facebook.com/HenrySchein.ie) HenrySchein.ie  
FOLLOW US [t](https://twitter.com/HenryScheinIE) HenryScheinIE

**HENRY SCHEIN®**  
IRELAND LIMITED

## Protection for the profession

The Dental Council of Ireland has issued a new Code of Practice on infection prevention and control. This article, written especially for the *Journal*, summarises the essential points of the Code.



The Dental Council's primary role is to protect the public. It does this in many ways, including issuing codes and guidelines to the profession and the public. The new Code of Practice relating to: Infection Prevention and Control (April 2015) supersedes the 2005 Code. The new Code has evolved from the 2005 Code, recognising the changes that have occurred in scientific knowledge, and international and national regulation and laws. Inspection of the references will give an insight into the changes that have occurred since 2005.

The Dental Council sought to develop a code that was appropriate to the protection of the public and all those employed in dental practices. The development of an appropriate code provides everyone with recognisable standards, while promoting transparency and enhancing public confidence in the dental profession. It is a win-win situation for the public and profession alike.

### Evidence

The profession was very keen that any new Code should be evidence based, and this was also a strongly held aim of Council. The Dental Council asked Drs Christine McCreary, Martin Holohan, Nick Armstrong, Wil Coulter and Mary O'Donnell to examine the evidence and to help develop the new Code. The Council sought the views of 22 groups, including patient and professional representative groups, statutory bodies, Government bodies and indemnity societies who have a particular interest in this matter. The Council is indebted to all who took part in the process and is grateful for their help but, in particular, to the Infection Prevention and Control Sub-Group under the chairmanship of Dr Armstrong. It was a huge task to ask of volunteers but after

three years of research, diligence and hard work, the result is a balanced, evidence-informed Code.

The references and bibliography are testament to the roots of the new Code and provide the reader with sources pertinent to the requirements of the Code. Dental healthcare workers (DHCWs) should access these references to gain greater understanding of what is required in certain areas such as hand hygiene, the prevention of sharps injury or waste management.

### Evolution

The new Code has evolved from the 2005 Code sharing core information with the 2005 edition but, sometimes, with important changes.

- ▶ The layout is different. The new Code is gathered together in seven broad headings, which should allow all those working in a dental healthcare setting, both clinical and non-clinical personnel, to assess and understand their roles and responsibilities in infection prevention and control (IPC) in their workplace. The headings allow a sense of movement through the processes of IPC from our responsibility to ourselves and each other in the workplace (the Occupational Health section), to our responsibility to all those who attend our workplace (Standard Precautions and Decontamination of Dental Instruments sections) and then to the ensuing management of waste generated in the workplace (Healthcare Risk Waste and Non-Risk Waste Management section).

IPC requires training and education for all members of the team; team training underpinned by shared attitudes and values (Training and Education section). The new Code summarises the need for risk assessment/audit and standards; these practices are universally acknowledged as essential to quality assurance in all healthcare and will probably play an important role in future practice inspection (Risk Assessment/Audit and Standards section). These are new skills for many DHCWs but with support, they should not prove intimidating. The recently published Dental Council Guide to Continuing Professional Development requirements (April 2015) recommends audit and governance as core CPD competencies.



**Dr Eamon Croke**  
President of the Dental Council of Ireland



Governance requires the nomination of a Decontamination Lead from within the DHCWs in each workplace and the development of an IPC policy. The Decontamination Lead role carries great responsibility for the practice, as the Lead will establish safety procedures, document them, initiate, and then audit and ensure compliance with the established IPC system (Governance section). A procedure for adverse event reporting must be established also (see Code of Practice relating to: Professional Behaviour and Ethical Conduct (8.1 – 8.5) and Code of Practice relating to: Infection Prevention and Control (5.6)).

- ▶ Immune status – the employer is still responsible for recommending vaccinations to employees based on risk assessment, but now it is recommended that all staff know their own immune status with regard to diseases to which they may be occupationally exposed.
  - ▶ The advice to any DHCW who has the misfortune to be infected by blood-borne viruses to seek medical advice remains the same, but the new Code sets out the criteria by which they can continue clinical practice, if that is appropriate.
- The new Code does not have a section on the treatment of patients who are infected by blood-borne viruses, as this is covered in the Code of Practice relating to: Professional Behaviour and Ethical Conduct (3.1 – 3.3), as is practices' responsibility to protect patient confidentiality (10.1 – 10.3).

- ▶ Risk management – DHCWs are expected by the public to have the required knowledge, as professionals, to minimise risk. The new Code, at the outset, sets squarely the responsibility of each DHCW to acquire the knowledge to be able to assess risk in the workplace and to be able to manage risk appropriately thereafter. The Code gives direction in that regard but it is not a step-by-step manual. Advice in the 2005 Code relating to laboratory and radiological procedures is still accurate but gets minimum space in the new Code, not because they have become less important (certainly not), but as part of the evolutionary process. This is previous knowledge that continues to withstand examination; it is not old but remains contemporaneous.
- ▶ There was some surprise expressed that amalgam should be included in an IPC document. However, amalgam is a hazardous material and waste amalgam from the mouth is clearly contaminated material, so it is appropriate and helpful that the Council should give guidance on its disposal in the risk waste section.
- ▶ The new Code gives guidance on the retention of records in keeping with advice the Dental Council received previously from the Office of the Data Protection Commissioner.
- ▶ Who or what is a Competent Person? A Competent Person is one who has been trained and is qualified to undertake a given procedure, whether it is the validation of decontamination equipment or pressure vessel checks.



Omega Financial Management

100%  
claims paid

## Day 1 Income Protection



### Longest paying claims:

1. Cancer
2. Depression
3. Pregnancy related complications
4. Fractured/broken bones
5. Viral/bacterial infections

Call 1850 260 261 to get your cover up to date.

[www.omegafinancial.ie](http://www.omegafinancial.ie)

OFM Financial Ltd trading as Omega Financial Management is regulated by the Central Bank of Ireland



DHCWs are trained to be responsible people. Part of those responsibilities include the need to be certain that anyone employed to carry out a task on the premises is trained and competent. It is an ethical requirement but, primarily and most clearly, common sense. Undoubtedly, the person who undertakes a pressure vessel check should not masquerade under false pretences. They are competent to fulfill their legal duty or they are not. Do not hesitate to seek proof of competency. Pressure vessels, compressors and autoclaves can cause great damage and harm if they malfunction; this danger is recognised in Safety, Health and Welfare at Work legislation (S.I. 445 of 2012).

- Validation relates to two distinct processes in the Codes: validation of the correct functioning of decontamination equipment; and, validation of procedures undertaken by DHCWs, for example the IPC system or healthcare risk waste management. Both types of validation are functions of governance; both require training, competence, audit and documentation.

### Expectation

The new Code will allow continued development of IPC practice from the IPC practices established by the 2005 Code. However, the Dental Council does recognise that the new Code will present challenges in implementation, and

has provided practice owners and DHCWs the time to develop their IPC practice and to plan to upgrade, and then to continue to upgrade, their practice to evolving standards. Any aspect of dental healthcare practice that fails the basic ("must do") standards of the Code today must be addressed immediately.

The Dental Council expects essential changes to occur around risk-riddled practice such as manual cleaning. Ideally, manual cleaning should only take place after diminution of the risk of infection following ultrasonic cleaning or, ideally, following the use of a washer-disinfector. It is the least acceptable of the three methods of cleaning instruments. This should be part of a co-ordinated plan to prevent sharps injuries and, simultaneously, allow clarity in the validation of an IPC system.

All current dental practices must have a suitable local decontamination area (LDA). The new Code supports the attainment of best practice. All registrants are advised that existing practices should, where not prevented by the physical restrictions of the premises, plan for the establishment of a local decontamination unit (LDU) and the installation of a washer-disinfector. The washer-disinfector is the preferred method of cleaning instruments.

The new Code will require review and renewal in the light of continued developments in the area and one can expect this to be done within the term (five years) of the next Council. The long-overdue Dental Act will hopefully have been enacted in that time. It is expected that it will contain provision for the licensing and inspection of dental premises.

### Start now

Irrespective, it would be very advisable for dental practice owners to plan for the development of their IPC system now. Not to do so may leave their employees and patients exposed to avoidable risk, leaving you, the dentist, open to civil or criminal challenge and fitness to practise proceedings. None of those risks are worth a gamble.

The Dental Council, in setting the essential standards of IPC, is also acknowledging best practice standards to which all DHCWs should aspire. To progress from the 2005 Code is manageable but will require careful planning prior to implementation. Assess, plan, implement, audit; it is an interlocking cycle and is worth the effort. Set your own timetable but today is the time to start.


### Encouragement

The Dental Council is greatly encouraged by the response of the profession to the new Code and the recognition that it is a constructive progression from the 2005 Code. The Council is further encouraged by the plans of professional groups to aid their members to make the required changes. This aid will require both training and the development of governance structures and audits. These are tasks that are regularly rewarded by community spirit.

It is intended that all information provided on the new Code, including this article, are adjuncts to reading the Code.

The new Code is the ground on which a culture of patient safety can be built in every dental premises – a culture of shared attitudes, values and practices by all in dental healthcare. It is a culture that places patient and staff safety centrally; it is a culture that allows dentistry consistently to say "we care for you!"

The Dental Council wishes the profession and everyone working in dental healthcare settings well in their endeavours to fulfill their responsibilities in IPC.



**BKRM**  
Accountants  
Auditors, Tax Advisers  
and Business Consultants  
81/82 North Strand Road  
Dublin 3  
[www.bkrm.ie](http://www.bkrm.ie)

**MANAGEMENT ACCOUNTING  
FULL BOOK-KEEPING AND PAYROLL  
TAXATION ADVICE AND PLANNING  
COST MANAGEMENT  
ANNUAL ACCOUNTING**

At BKRM we have extensive experience servicing the specific needs of the dental profession. We offer advice for general practitioners, orthodontists, periodontists, and other specialists. We can offer advice and support in relation to cost cutting, lab costs, remuneration and sliding scales for hygienists and associates, IDA best practice, the latest updates from Revenue with regard to the dental sector and any other issues specific to the dental sector. We pride ourselves on a customer centred approach and believe in delivering real savings to our clients.

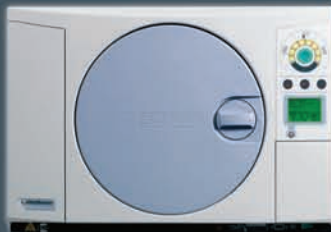
**CONTACT US FOR A FREE, NO OBLIGATION CONSULTATION**  
[info@bkrm.ie](mailto:info@bkrm.ie) | 01-836 5522



TEKNO SURGICAL



Little Sister



## 10% discount when purchasing a Washer and Sterilisation machine

### ADVANCED INSTRUMENT WASHING & DISINFECTION

#### Little Sister IWD51htm:

- Washing and disinfection in only 40 minutes
- Rapid wash option in only 19 minutes
- Twin high pressure spray arms
- Integrated water softener
- All-in-one ICPS solution cleans and protects instruments
- Proof of delivery detergent monitoring
- Active warm air drying as standard
- RO Water ready, for future requirements
- Simple touch screen control
- Optional Cycle Printer or Cycle Logger
- Fully compatible with Hands Free instrument Transfer 'HFit' cassettes

### ADVANCED STERILISATION

**One touch simplicity** is quick, easy and avoids the potential for user error. PIN protected cycle options are available for enhanced functionality.

**Self Checking Cycles**, with advanced Air Detection technology on vacuum models, provide the assurance that every successful cycle meets the specification required to sterilise your instruments.

**Advanced water system** with twin reservoirs uses just 350ml of clean fresh water for each cycle. A Direct Drain option is also available.

**Direct Data Download** is included as standard allowing all cycle data to be kept on a PC or laptop for reference.

An optional Cycle Printer or Cycle Logger is available for keeping paper records or, electronic data transfer to a remote PC or Laptop.

Offer ends August 31st

For more information contact:  
[emma@tekno-surgical.com](mailto:emma@tekno-surgical.com)  
M: 086 021 5167



ESCHMANN

## Codes deserve careful examination

The Irish Dental Association welcomes the Dental Council's new Codes of Practice on infection prevention and control and continuing professional development.



The Dental Council's new guidance regarding infection prevention and control (IPC) and continuing professional development CPD deserve careful and critical examination by all dentists.

In our rush to judgment, we can often lose sight of the fact that this is guidance for the profession that is intended to reflect best practice and scientific progress. We can argue whether guidance ought to be evidence based or evidence informed, but at the very least dentists should be satisfied that regard has been had to known risk and to a lesser extent there has been some anticipation of possible risk.

This was very much the concern reflected in the searing and lengthy IDA critique of the initial November 2013 draft IPC code of practice circulated by the Dental Council. And while reservations remain, today we must acknowledge that the Dental Council has responded to many of our chief concerns. These include the provisions relating to decontamination units, the use of washer-disinfectors, autoclaves, and changes as regards infected staff receiving treatment. Setting out acceptable standards rather than unattainable doctrines will be shown to produce a better mitigation of risk in years to come, I have no doubt.

### Highest standards

We make no apology for supporting regulation of the highest standards of dental care where such standards are appropriate, proportionate and where due account is taken of the cost of implementation as against the likely level of risk. It is also vital that the Dental Council takes seriously its responsibility to pursue those who seek to sell the profession and our patients short at the expense of the overwhelming majority of the profession who are committed to bearing the

cost associated with regulation. That is why new legislation is required to give the Council powers to tackle the small number who tarnish the good name of dentistry in Ireland.

*"Setting out acceptable standards rather than unattainable doctrines will be shown to produce a better mitigation of risk in years to come..."*

### Support warranted

Equally, the State must be brought to task for affording no assistance to dentists who comply with standards set by the Dental Council. Why, for example, will the HSE arrange to collect clinical waste from a doctor in general practice but not the dentist treating medical card patients next door? We will be seeking financial support towards the cost of implementation from the State in forthcoming discussions.

### CPD imperative

As an Association, we will assist members through the dissemination of best practice and the provision of appropriate education and training. The new guidance on CPD from the Dental Council should also be studied closely, given that all dentists are obliged to engage in CPD and this will be the subject of further new legislation shortly. The new core competencies are appropriate and, in fact, members who have been attending IDA programmes in recent years have been provided with support in most if not all these areas prior to their formal recognition by the Council. Again, we will be redoubling our efforts to assist dentists to meet their CPD requirements, taking account of the new guidance from the Dental Council.

Our Board and Council will be studying the new guidance from the Dental Council, and members should expect to receive further updates and news of more assistance being made available to IDA members in the coming months.



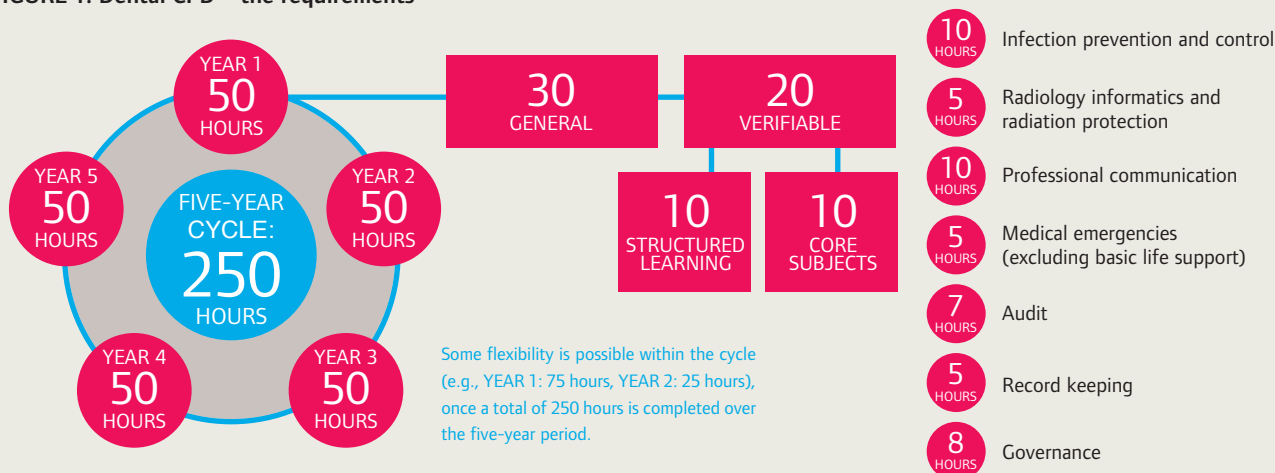
**Fintan Hourihan**  
Chief Executive, Irish Dental Association



# Moving towards a mandate

Dr Marielle Blake of the Dental Council outlines what's new about the Council's new guide to CPD requirements.

FIGURE 1: Dental CPD – the requirements



By now, every dentist registered to practise in Ireland should have received a copy of the Dental Council's document, Your guide to the Dental Council's Continuing Professional Development requirements. While the new Dental Act is still awaited by the profession, it is expected that the Act will make continuing professional development (CPD) mandatory for continued registration. In order to prepare dentists for this change, the Council has been engaged in an ongoing process of updating guidelines and setting out what dentists should be doing now, and what they will be expected to do to maintain registration in the future. Dr Marielle Blake is Chairperson of the Council's Education and Training Committee, and she explains the thinking behind the document. "At present, all dentists are ethically obliged to maintain their skills. CPD is currently obligatory rather than mandatory, as dentists are obliged to maintain their skills under the Council's ethics guidelines. Within the new Dental Act, it is likely that mandatory CPD will be in place. The Council formulated an introductory CPD document five years ago. The current Education Committee has been working on the principles and the consequential categorisation of required CPD, which is outlined in the new document."

## The hours

The new document sets out the CPD requirement in some detail. Over a five-year cycle, dentists will be expected to complete 250 hours of CPD (approximately 50 hours each year). Of these 50 hours, 20 should be verifiable and 30 general CPD.

What is perhaps most significant about these updated guidelines is that the Council has now identified seven 'core' areas of verifiable CPD, each with a recommended time allocation, which together make up 50% of the required verifiable hours (Figure 1). The other 50% is structured learning CPD, which can cover any area of specific (reasonable) interest to the dentist.

Dr Blake explains the rationale behind this decision:

"In reviewing the Council's fitness to practise cases over the last few years, certain areas were identified, which were causing difficulties with our registrants – these involved communication, record-keeping and conflict resolution. These topics are now included in the core subjects.

"The area of communication, in particular, was generating frequent complaints and is therefore weighted in the new system." (Dentists must complete 10 hours of CPD on communications over a five-year cycle.)

Obviously, these guidelines are a starting point, and will change over time, with the allocated hours increasing or decreasing as the Council deems appropriate. Other core areas that Dr Blake identifies as crucial are record keeping and governance.

"The governance of dentistry has changed and clinicians are now expected to have all the necessary practice documentation to hand. A lot of people may not know the level expected of them. The requirements just for radiology and infection prevention and control alone are significant and have changed greatly in recent years. We need to compile a sample folder and say to people: 'This is what you need to have: your health and safety documents, your fire safety, employee contracts, training records, record-keeping in relation to decontamination, etc.'"

In addition to the CPD requirements, dentists are required to maintain CPR

## Ann-Marie Hardiman

Journalist and sub-editor with Think Media, with an interest in further education and CPD.





*Dr Marielle Blake, Chairperson of the Council's Education and Training Committee.*

certification to BLS (Basic Life Support) level. The time taken to maintain this certification is not included in the 50 hours per year, and it is likely in the future that ongoing Dental Council registration may require proof of CPR certification.

The 30 general hours can include, for example, journal reading, attending a trade show or study club, or any other activity that adds to a dentist's knowledge or skills, but does not meet the criteria for verification.

### Course planners

The Council has also tightened its approach to approving verifiable CPD courses. Course organisers will need to apply to the Council three months in advance and, to be deemed verifiable, programmes must meet four specific criteria:

1. Concise educational aims and activities.
2. Clear anticipated outcomes.
3. Quality control (e.g., opportunity for feedback).
4. Proof of attendance and participation.

Dr Blake draws particular attention to the need for clear and realistic outcomes. "An example of an unrealistic outcome would be the statement that participants in a four-hour introductory course in implant dentistry would be proficient in placement of implants following the course."

Those who are planning courses will now have a strong incentive to target the seven core areas.

"These are the areas that every single dentist in Ireland has to cover on an annual basis so, presumably, course organisers will now identify courses specifically related to these core subjects. Specific training in some of the core courses is not currently available. There is definitely a market for people to come in and deliver this sort of training."

Dr Blake mentions the new infection prevention and control guidelines (see page 120) as an area that will require specific training. She acknowledges that the protection societies are addressing elements of communication and record keeping in their CPD courses, but says that there is scope for a lot more specific training, particularly in the area of governance.

### Monitoring

Obviously, in the absence of a mandatory requirement, there will be no formal monitoring of dentists' CPD as yet, but that doesn't mean that there is no need for dentists to keep their own records.

"At the moment the dentist is obliged to keep the records themselves," says Dr Blake.

"There's a simple pro-forma document that can be downloaded from the Dental Council website. As practitioners attend a course, or go to a conference, the details should be filled in. Two different folders are recommended – one for verifiable CPD and one for general CPD."

Once CPD becomes mandatory, the issue of audit and monitoring will have to be placed on a more formal footing, perhaps as part of renewal of registration. Dr Blake draws comparisons to the Medical Council, which already has systems in place.

"Medical CPD is managed through the various Colleges, for example the ICGP,

College of Physicians, etc. These have specific CPD websites and part of their annual fee goes to the maintenance of that website. It's all centrally stored so from an audit point of view it's much easier to identify clinicians who are falling behind in their CPD requirements.

"Once the new Dental Act is passed, appropriate funding and staffing will be necessary to put equivalent dental CPD structures and monitoring in place."

### Planning

The other key message that the Dental Council wishes dentists to take on board is that from now on they will need to plan their CPD as a five-year cycle, with specific requirements and objectives.

"Dentists need to plan their CPD over the five-year period, and address the core areas within that. To date there were fewer specific areas to be covered, so dentists could choose to complete the verifiable hours in any other areas they wished. The new recommendations specify seven core subjects with defined times over the five-year period."

There are no exceptions – dentists who are working part-time, or who are not working but wish to remain on the dental register, must still complete the full five-year cycle. There is flexibility in when a dentist may engage in CPD, which may help, for example, a dentist on maternity leave, but everyone must complete 250 hours over five years.

The new document offers advice on how to do this in three steps:

**Step 1** Make sure you understand the time requirement in hours.

**Step 2** Plan your CPD activities to fulfil your anticipated professional requirements.

**Step 3** Record your CPD.

Dr Blake reiterates that these core requirements have been developed on foot of identifying deficits in dentists' knowledge, which have led in some cases to Fitness to Practise hearings, or to cases going to the Dental Complaints Resolution Service. "We would anticipate significant benefits to dentists from increasing their skills in these areas. People who keep up with their CPD do not tend to appear in front of Fitness to Practise hearings. Training and education and furthering yourself are hugely important. If a dentist was called to attend Fitness to Practise proceedings, the fact that they were not up to date with CPD would count against them."

While the Dental Act may still be some way off, Dr Blake feels that these guidelines give dentists a strong starting point to begin to fulfill their CPD requirements and to record them accurately.

"Lots of people are probably doing a lot of CPD, but in their areas of interest, so now they will have to plan to cover the core areas as well."



### IDA launches online CPD management system

The IDA launched a new CPD Online Learning Management System at the recent AGM in Cork. This will mean that IDA members will be able to book and pay for CPD courses online, record their own CPD activities, and read and record IDA *Journal* articles. Non-IDA events can also be recorded by members onto the system. To access the system, just log on to the members' section of [www.dentist.ie](http://www.dentist.ie) and click on CPD. A full, detailed 'How to Use' instruction manual will be forwarded to all members in the coming weeks.



## From haute couture to the FDI

DR MICHÈLE AERDEN, the first female President of the FDI, recently visited Dublin to address the WiDEN group, and spoke to Ann-Marie Hardiman about her career, her views on women in dentistry and her work in developing countries.



*At the recent WiDEN meeting were (from left): Dr Clodagh McAllister; Dr Michèle Aerden; Dr Doireann Ridge; Professor June Nunn, Dean of the Dublin Dental University Hospital; and, Dr Nuala Carney.*

‘From haute couture to President of the FDI’ was the intriguing title of Dr Michèle Aerden’s recent lecture to the Women in Dentistry Network and is, in fact, an accurate description of her fascinating career trajectory. After quitting her science degree to get married, Michèle started a successful fashion business in her native Brussels, before selling up to spend time with her children. It was only when she reached her 30s that she decided to return to her first love and embark on a more science-based career. Even then, she felt that dentistry had the potential to be an ideal career for a woman.

“I had a younger sister who became a dentist. I saw the flexibility of the job, and I like science so I decided to go for that. You can fit it with your schedule. You can decrease [your hours] when you have little children and increase when they grow up.”

She studied while the children were at school, and after graduation she joined a group practice, before setting up on her own. A GDP with an interest in aesthetic dentistry, she still practises, fitting a core group of loyal patients around her travels.

“I will never give it up because I think [it helps] you to keep contact with reality – keep your feet on the ground. And because I practise I have to do continuing education – otherwise I would lose my licence.”

### Getting involved

Worried that, as a comparatively late starter, she needed to learn more about her new profession, Michèle got involved in her national scientific association almost immediately, attending CPD courses at every opportunity. This led to involvement at committee level in first the scientific, and then the national, association. Her commercial experience was a big part in her progression, and she became the first female President of the Belgian Dental Association. Her

knowledge of languages, in turn, led to her being asked to represent the Association at the CED and FDI.

At the FDI, Michèle sat on the committees for ethics and for developing countries, and was eventually invited to apply for a place on the Council. Two Council terms made her eligible to run for President. However, her first attempt to be elected was unsuccessful. She persevered, running again two years later, and became the first female President in the 105-year history of the FDI in 2005. The FDI is a huge organisation, representing over one million dentists in 134 countries, and politics inevitably plays a major role at election time, so Michèle’s achievement as a woman from a small country with only one vote cannot be overstated. She relishes the challenges, however.

“I work very hard but I get results – and that gives you a lot of energy.”

### A role model for women in dentistry

Michèle felt that her first defeat was related to her gender, and her determination to try again two years later was very much influenced by her conviction that women in dentistry must advance themselves in the profession. “I felt that at least if I lost again it would make it harder for them to defeat another female candidate next time.”

A strong believer in the power of information, of “facts and figures”, Michèle’s conviction was based on research she had already carried out in 1996 into the growing feminisation of the dental profession. The results were telling: women, despite making up an increasing number of the profession, held a maximum of 12% of leadership positions, such as committee memberships, etc., within professional organisations. This led her to establish the Working Group on Women in Dentistry to try to address this deficit. The Working Group became Women Dentists Worldwide in 2001, and is now a full section of the FDI.

Michèle’s message is simple but powerful: “Only by taking a leadership position can you achieve sustainable change”.

She cites as an example the struggle she had as President of the Belgian Association to change the days when CPD was held. CPD was always held on Saturdays, and female dentists were not attending due to family commitments. Thanks to Michèle’s efforts, the association began to hold CPD on Thursdays, during school hours, to address this.

“This was a little thing that showed me that you have to be where decisions are made.”

These ‘little’ things made Michèle feel all the more strongly the need to run for President again.

“I had those facts and figures showing that you had no women at a decision-making level. That gave me more legitimacy to apply. I thought: ‘You have to do it’ – I felt I had a duty.”

Given that female members of the profession have the same education, and the same competence as their male colleagues, the question arises as to why more women do not take up these leadership positions. Michèle feels that lack of confidence is a huge part of this.

"In FDI I tried many times to encourage women [to join] committees (I was always the only woman), so I would call them and invite them to apply and they would always say 'do you think that I can do it?'" Male colleagues, on the other hand, were always happy to accept immediately.

Asked how we solve this problem of lack of confidence, her answer is short and to the point: "Role models! Showing that we can do it. That is why I speak on these issues – it's not about ego, or about social status – it's a tool that you can use to change things".

### Having it all

Michèle also feels very strongly that the traditional barriers to women's participation and progression in their careers – specifically time spent away while they have their families – should not prevent them from achieving great things. "There's no excuse for women not to be there. Take your time. Invest in your children, particularly for the first three years of their life. You can still do it. I began in my thirties and became President of the FDI. Women are organised, and you can do this!"

*"It is best not to have an association outside of your national association. Act as a section within the association; otherwise, you will never be part of the decision-making."*

The research carried out by Women Dentists Worldwide has also made some fascinating discoveries about the pay gap between male and female members of the profession. Despite having the same qualifications and opportunities, and working just as hard, women consistently earn 20-25% less than their male colleagues, and Michèle's research had some interesting findings about this.

"When we did the surveys in Europe we saw that women have a different approach to care. We tend to do more conservative dentistry, and more paediatrics."

This kind of care takes more time and involves fewer of the higher fee items such as implants or bridges. It's more about caring and prevention, and Michèle feels that this is a fundamental difference of approach between the genders.

Michèle is very supportive of the WiDEN group, and has some words of advice for the members.

"It is best not to have an association outside of your national association. Act as a section within the association; otherwise, you will never be part of the decision-making. You need to be there to introduce sustainable change."

### Developing world

Michèle's involvement in the FDI's Committee of Developing Countries made this an area in which she took a particular interest during her presidency.

"When I became President, there were seven projects in developing countries; when I left there were 42."

One project, with which she is still very much involved, began as a pilot project in Manila in the Philippines with the aim of improving the health and educational attainment of young children. The President of FDI could attend meetings of the board of the World Health Organisation, and this project is a collaboration with the WHO's public health arm, the OMS. Michèle explains: "We looked at

## A noble resolution

One of Michèle's main priorities as FDI President was the integration of dental health with overall medical health, and one of her proudest achievements was to lobby successfully at the WHO General Assembly for a resolution to recognise this. The resolution, which was adopted on May 23, 2007, acknowledges the intrinsic link between oral health, general health and quality of life, and emphasises the need to incorporate programmes for the promotion of oral health and prevention of oral diseases into programmes for the integrated prevention and treatment of chronic diseases. Michèle feels this is another tool in her armoury as she travels.

"I can say to the Ministers 'you voted in Geneva – I am here now for the implementation'!"

what influenced the under-development of children under 10 years of age, and the three pillars we identified were: infection, such as diarrhoea and respiratory infection; oral disease – if a child has caries, or an abscess, he doesn't eat, he doesn't sleep, and he doesn't go to school; and, terrible living conditions, which had led to chronic worm infections".

The project has come up with a remarkable programme of simple, cheap and effective solutions. To combat infection, the children are taught to wash their hands before eating and after using the toilet. This small measure has led to a 40% reduction in diarrhoea and a 30% reduction in respiratory infections. The children also receive education about diet, and are supervised while brushing their teeth with fluoride toothpaste once a day at school. This measure has reduced the risk of cavities and oral infection by 30%. Finally, the children receive a twice-yearly dose of worm treatment, which has improved their general health.

Michèle is understandably delighted with the results: "Just with these measures, cognitive capacity increased by 30% – it's unbelievable".

And the cost of this intervention? 50c per child per year.

"It's easy, low cost, and evidence based," says Michèle. "The three-year evaluation was so good that the Philippines Government has taken over the scheme and it will now be rolled out to over eight million children."

Michèle has taken this project to Africa, and the three-year evaluation phase of a pilot in Kinshasa in the Democratic Republic of Congo is about to come to an end.

"This year I will go with my facts and figures to the Government. We know it works – so do it!"

Michèle points out that she can achieve all of this because of the power of an organisation of the size and influence of the FDI, which gives her direct contact with the government, and with the national dental association, in each of 134 member countries.

"I have 134 telephone numbers, and all of these projects take place with the national association of each country. Whatever I obtain from governments, it is up to the national association to follow up – that is crucial."

Michèle has always worked to use that influence – and her beloved facts and figures – as much as possible as a tool to create the sustainable change that is so important to her.

"Sometimes I come away from a country and think I haven't done anything, but you are just the trigger. The national association does the work before and after, and the results are there. We are the spark, but they have to prepare and they have to continue after."



# NEW REGULATIONS ON NEEDLE INJURIES

## GET COVERED



COMPLIANT  
WITH NEW  
REGULATIONS !!

## ULTRA SAFETY PLUS THE SAFE INJECTION SYSTEM.



As the world leader in dental pain control <sup>2</sup>, Septodont solves the increased need for safe simple solutions to meet new safety regulations.

Over the years Ultra Safety Plus has proven its efficacy and ease of use becoming the standard for needle stick protection on all dental local anesthetic procedures. In the United Kingdom, Ultra Safety Plus already represents over 45% of the injection systems used in the dental groups and hospitals <sup>3</sup>.

Ultra Safety Plus is offered in an assortment of needle lengths and you can choose the sterile single-use handle or an autoclavable handle.

**Ultra Safety Plus. Get Covered.**



<sup>1</sup>Council Directive 2013/32/EU of May 2013

<sup>2</sup>Septodont is the only company producing 500 million dental cartridges per year

<sup>3</sup>Source SDM data, YTD Q3 2012

Tel: +44 (0)1622 695520

[www.septodont.ie](http://www.septodont.ie)

To arrange a demonstration contact  
Gerry Lavery on: +44 (0)7836255274

# Timing is everything

Leaving a patient in discomfort while they wait for an appointment can carry risks.

A dentist had treated an adult patient for almost a year. Recently the patient had attended with pain when biting on the right side of her mouth. No caries or fractured restorations were evident, and the radiographs didn't allow the clinician to make a definitive diagnosis.

A provisional diagnosis of localised periodontitis was made and the dentist proceeded to treat the patient on this basis, with root surface debridement under local anaesthetic. This treatment was undertaken two weeks after the initial appointment. Two weeks after the second visit, the patient returned, having had no resolution of the symptoms and reporting that she had been in pain for a month. Indeed, the pain was increasing in severity to the point where it was described as excruciating, and she was unhappy.

After a further review it was discovered that a premolar had suffered a vertical fracture and needed to be removed. The dentist decided that the extraction was potentially difficult and advised the patient that he could not carry out the extraction the same day and that a longer appointment would be needed.

Unfortunately, the dentist's appointment list was full and the next available "long appointment" was two weeks away. The receptionist explained this to the patient, who reluctantly agreed to wait a further two weeks for an appointment of the right length. The patient had now been in discomfort for several weeks but, as she trusted the dentist, she accepted that the wait was unavoidable. The situation deteriorated and a few days later the patient called the practice in severe pain. She was seen by a colleague of the original dentist, who removed the fractured tooth the same day, without any difficulty.

## The complaint

The patient was relieved that her tooth had been successfully removed and that her toothache had resolved. However, she was unhappy about the delay in receiving treatment, particularly as her dentist had advised that the extraction

would be difficult and would need a long appointment, and this had proved not to be the case.

The patient wrote to the dentist complaining that she had been left in pain for more than a month and that he was uncaring.

With Dental Protection's assistance, the dentist apologised to the patient and thanked her for making him aware of her concern. Having investigated the situation, he established that there had been a lack of communication between the receptionist and himself, which, in turn, left him unaware of the patient's long wait for a further appointment.

He also explained the potential difficulty with the extraction and his reasons for seeking a longer appointment slot. He explained that he fully understood the patient's concerns and that he would take steps to ensure that such a situation would not arise again. The patient accepted the apology and explanation, and this concluded the complaint.

She was particularly happy that her complaint had been taken seriously and that changes would be made at the practice, which meant that another patient would not have the same unsatisfactory experience.

## Taking control of arrangements

The dentist in this case had been unaware that the patient would have to wait so long for an appropriate appointment slot, and when her letter of complaint drew this to his attention he was disappointed by the level of service that his practice had provided to the patient.

It was clear that the receptionist had not realised that the patient was in pain, and the dentist had not realised that his next available appointment was a matter of weeks away. There had certainly been a communication gap, and a conversation with his dental nurse and receptionist produced the necessary changes in the way that patients were prioritised.

## Learning point

Patients in pain who are treated as soon as possible are inevitably very grateful and can become amazing ambassadors for your practice. Patients who appear to be left in pain are never grateful and often feel the need to tell their story to other people.

A patient who has their complaint resolved can often go on to become one of the dentist's greatest supporters. A patient is often looking for an explanation and, where appropriate, an apology. The "wow" factor can be created by feeding back to the patient any changes that have been made as a result of the complaint.



**Dr Martin Foster** BDS MPH DipHSM

Martin is a dento-legal adviser for Dental Protection and is part of the team supporting members in Ireland.



# 10 Reasons to choose us.

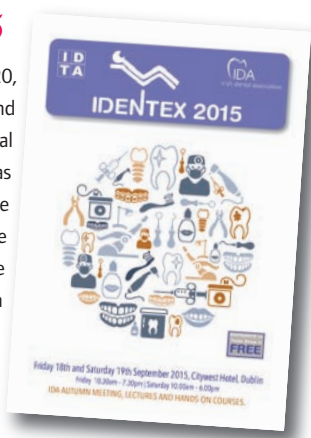
- 1. We know your needs.** Established by dentists for dentists.
- 2. Experience makes all the difference.** Deep industry knowledge and specialisation.
- 3. Assistance, when you need it.** We offer peer-to-peer support.
- 4. Straight to your door.** Enjoy complimentary collection and delivery, nationwide.
- 5. Loyalty pays.** Credit on your account with Horizon loyalty program.
- 6. Anytime, anywhere.** MySCD is your dedicated online portal, available 24/7.
- 7. Nothing but the best.** Reliable service and product that offers real value.
- 8. Guaranteed quality.** Certified and globally recognised products.
- 9. Always switched on.** Track your patient cases in real-time.
- 10. Smart technology.** With digital workflows that streamline processes.

**Experience something extra. Get 10% off your first 10 cases.**

T&C: 1. Offer applies to Dentists who do not currently hold a Southern Cross Dental Account. 2. Reference: 10REASONS must be quoted at the time of opening an account and/or stated clearly on the first laboratory sheet in order for the discount to be applied. 3 Offer expires 30/06/2015. Any new accounts opened after that date will not be afforded a discount.

## Don't miss Identex 2015

Friday and Saturday, September 19 and 20, are the dates for this year's Identex 2015 and the Autumn Meeting of the Irish Dental Association. Entry to Identex is free and as always, there will be a strong display of the latest products and technology from the members of the Irish Dental Trade Association (IDTA). The IDA's Autumn Meeting will be a comprehensive lecture programme, with lecturers discussing employment law, communication, oral radiology and infection control.



## World Dental Hygienist Awards

The World Dental Hygienist Awards, sponsored by the Sunstar Foundation, recognise dental hygienists who have made significant contributions to the dental and dental hygiene communities, their profession, or to the general public. Licensed/certified dental hygienists and students of dental hygiene are eligible to enter. Winners receive cash prizes ranging from \$5,000 to \$2,000 and a commemorative trophy, as well as travel to the 2016 International Symposium on Dental Hygiene. Further details are on [www.sunstarawards.com](http://www.sunstarawards.com).

The award ceremony will take place at the 20th Symposium of the International Federation of Dental Hygienists (IFDH), June 23-25, 2016, in Basel, Switzerland.

## Income protection payments



John O'Connor, Managing Director of Omega Financial Management.

For the fifth year running, Omega Financial Management has announced a 100% payment record on claims made under its Day 1 income protection product from DG Mutual for 2014.

Overall there was a significant increase in both the number of claims and the amount paid to each member in the year. There was a wide range of claims – from cancer claims, one of which continued for the whole year – to injuries from sporting accidents, to shorter claims for viral and bacterial infections.

The majority of dentists who are covered have a Day 1 policy, meaning that they can claim for anything that keeps them out of work from the very first day of illness. The average weekly amount that dentists are covered for is just over €1,100 per week. Currently, the

longest claim has been payment for over two years and unlike many plans that are only written to age 60 (particularly for dentists), this will be paid out to age 65 or until the client is fit enough to return to work.

Announcing the claims details, Omega's Managing Director John O'Connor said that the 100% claims record that DG Mutual has in Ireland emphasises its commitment to their mutuality and their members. "We deal with all income protection providers in the Irish market and in our experience, DG Mutual is the quickest and easiest in terms of making payments to clients when they need it. As DG Mutual underwrites all new members so well, when it comes to them claiming, they pay people very promptly and usually without discussion."



LEFT: The PRDBA's first meeting was held in the Distillery Building on May 22.

RIGHT: Patrick Leonard SC addresses the PRDBA Annual Conference, while speaker Simon Mills BL, Chairman Nicholas Butler SC and Ciara McGoldrick BL look on.



## Barristers demonstrate regulatory zeal

The Professional, Regulatory and Disciplinary Bar Association of Ireland (PRDBA) held its first annual conference recently at the Distillery Building in Dublin 7. The PRDBA is a specialist bar association for Irish barristers who practice before professional regulatory tribunals (such as Fitness to Practise Committees of the Medical and Dental Councils) and who are interested in professional regulatory and disciplinary law. The association was officially launched by the Hon. Mr Justice Nicholas Kearns, President of the High Court,

in November 2014, and now has over 40 members drawn from the Law Library of Ireland.

The conference featured fascinating presentations from a number of speakers with particular expertise in the area of professional regulatory and disciplinary procedures. Topics included 'Reflections on the role of the legal assessor to professional regulatory tribunals', 'Publicity and the role of the media in professional regulatory tribunals', and Differences between various professional regulatory schemes in the health sector and the UK proposals for reform'.

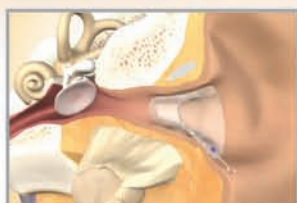




Removable Hollow Ear Canal Inserts

## A Breakthrough in TMJD Treatment

Now you can offer your patients the latest technology in Temporomandibular Joint Disorder treatment. The Cerezen™ device is a safe and effective aid in reducing TMJD pain and associated symptoms such as grinding of teeth and headaches.

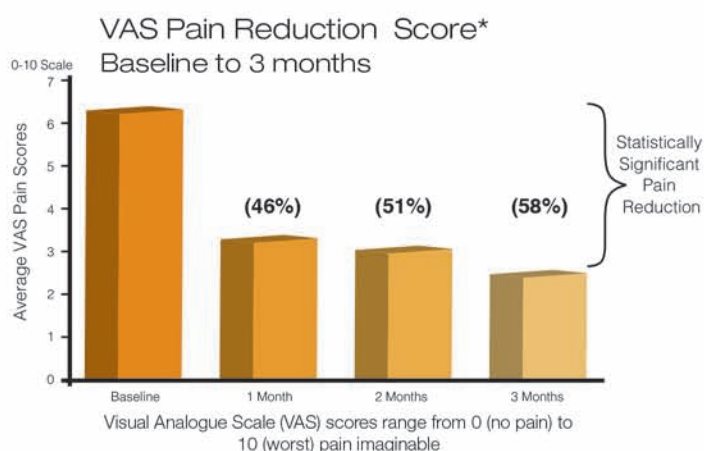


### A New Approach

The Cerezen™ devices are custom ear canal inserts that support the temporomandibular joint and reduce pain. They also provide a "cognitive awareness" to the patient that discourages grinding, clenching and other para-functional behaviour.

### Patient Outcomes

In a clinical trial, subjects experienced statistically significant pain reduction while using Cerezen™ devices. Visual Analogue Scale scores showed a 58 percent pain reduction after three months of use. At the end of the trial, 100 percent of subjects reported good to excellent results.\*



### Benefits of the Cerezen™ Device

|  | Cerezen™ Device |
|--|-----------------|
| • Designed to be worn comfortably 24/7   | ✓               |
| • No interference with eating or talking | ✓               |
| • Barely visible                         | ✓               |
| • No night-time discomfort               | ✓               |
| • No negative effect on the bite         | ✓               |

info@Cerezen.eu • www.cerezen.eu

Freephone: +800 19431965



# A frontal swelling with a cautionary tale

## Précis

A frontal swelling with a cautionary tale – a case report highlighting the importance of a careful working diagnosis and management of patients presenting with neurological symptoms with an associated frontal swelling.

## Abstract

Frontal sinus mucocoeles are the most common paranasal mucocoeles. They consist of sterile mucus and shed cells and form due to inflammatory changes or chronic nasofrontal duct obstruction. Coincident infection and expansile growth can lead to specific clinical features dependent upon the location of the lesion and the degree of spread. We present a case of a 56-year-old lady with a radiological diagnosis of a frontal sinus mucocoele causing anterior dehiscence of her frontal cortex. She underwent incision and drainage of a frontal swelling misdiagnosed as an infected sebaceous cyst. The case emphasises the importance of correlating features in the patient history and previous investigations with presenting findings.

Journal of the Irish Dental Association 2015; 61 (3): 138-140.

## Introduction

A mucocoele is “a cystic cavity with mucoperiosteal walls, which are in turn lined with cuboid respiratory epithelium exhibiting chronic inflammatory alterations”.<sup>1</sup>

Paranasal mucocoeles most commonly develop in the frontal sinus and consist of sterile mucus and shed cells. They are chronically expanding lesions, which develop after inflammatory changes or nasofrontal duct obstruction secondary to traumatic or post-interventional scarring. Gradual expansion can cause thinning and destruction of the enclosing bony walls of the frontal sinus.<sup>1</sup> Concurrent infection may occur and lead to acute exacerbations of symptoms, including headache. Most paranasal sinus mucocoeles develop in the frontal sinus (77%), followed by fronto-anterior ethmoidal (14%), anterior ethmoidal (5%), maxillary (3%) and posterior ethmoidal (1%) sinuses.<sup>2</sup>

## Case report

A 56-year-old previously medically fit and well lady was referred by her general medical practitioner for an outpatient ear, nose and throat (ENT) assessment due to intermittent frontal headaches and dizziness. There was no history of previous surgery or trauma to the head but the patient revealed a history of chronic sinusitis. Initial otolaryngological and neurological examination was normal. Medical management for her intermittent dizziness with betahistamine therapy was unsuccessful and a magnetic resonance imaging (MRI) scan was requested to help exclude any central nervous system pathology. Her contrast enhanced MRI scan at this point showed complete opacification of both frontal sinuses with a mucocoele evident on the right (**Figure 1**). A superimposed fungal sinusitis was included within the differential diagnosis and she was prescribed oral doxycycline and a nasal decongestant. On a subsequent ENT review, a



**Michelle Connolly**  
BDS (NUI) MJDF (RCS Eng)

**Ibraz Siddique**  
MRCS MBBS MFDSRCS BDS PGC (Health Research)

**Muzzammil Nusrath**  
MBChB ECFMG CERT BDS MDS(Hons) FDSRCS (Eng) FDSRCP(SGlasg) FRCS (Glasg-MAX FAX)  
University Hospitals of Nottingham, UK

**Corresponding author:**  
**Muzzammil Nusrath**, Oral & Maxillofacial Consultant/Head and Neck Oncology-Reconstructive Surgeon  
Oral & Maxillofacial Surgery Department, NUH Hospitals NHS Trust,  
Queen's Medical Centre, Derby Road, Nottingham, United Kingdom NG7 2UH  
T: 0115-9249924 – main switch E: manusrath@yahoo.com

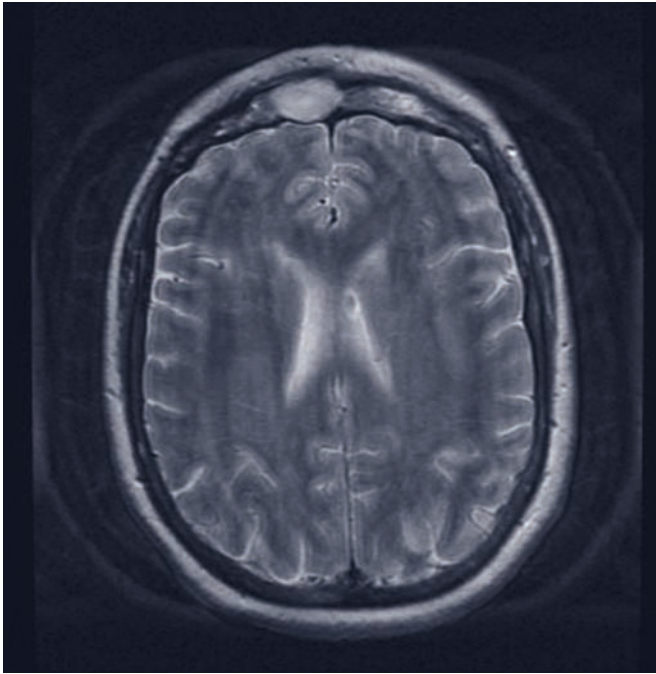


FIGURE 1: MRI head. Complete opacification of frontal sinuses with evidence of early right frontal mucocoele.



FIGURE 2: Axial CT. Expansion of frontal sinus and involvement of the anterior and posterior cortices.

computed tomography (CT) scan was requested due to persistence of her symptoms. This demonstrated expansion of the right frontal sinus and bony erosion of the anterior and posterior cortices. A right frontal mucocoele was evident expanding inferiorly into the orbit, posteriorly into the anterior cranial fossa and anteriorly into the soft tissues of the forehead (Figure 2). However, before she attended her planned ENT outpatient review appointment with the results of her CT scan, she presented to an emergency department at another hospital complaining of a constant throbbing frontal headache and an associated tender swelling on her forehead (Figure 3). The swelling was clinically diagnosed as an infected sebaceous cyst and immediately incised and drained under local anaesthetic. Pus discharge was noted with no subsequent microbiological growth. On her subsequent scheduled ENT clinic review, the frontal cortex dehiscence caused by the frontal sinus mucocoele was noted on her CT scan. The incision and drainage previously carried out effectively converted the condition from a mucocoele to a fistula. An endoscopic procedure was planned to establish drainage of the frontal sinus.

Surgical intervention was offered to the patient; however, she declined surgery and is therefore under regular clinical review.

### Discussion

The frontal sinus is funnel shaped with a central septum. Its floor slopes inferiorly to the midline where the ostium is located. An hourglass shaped narrowing called the frontal recess is located between the frontal sinus and anterior middle meatus. Obstruction at this narrowing results in loss of ventilation and mucus drainage from the frontal sinus. Obstruction can be caused by congenital abnormalities, allergy, infections, trauma, previous surgery and neoplasms.<sup>3</sup>

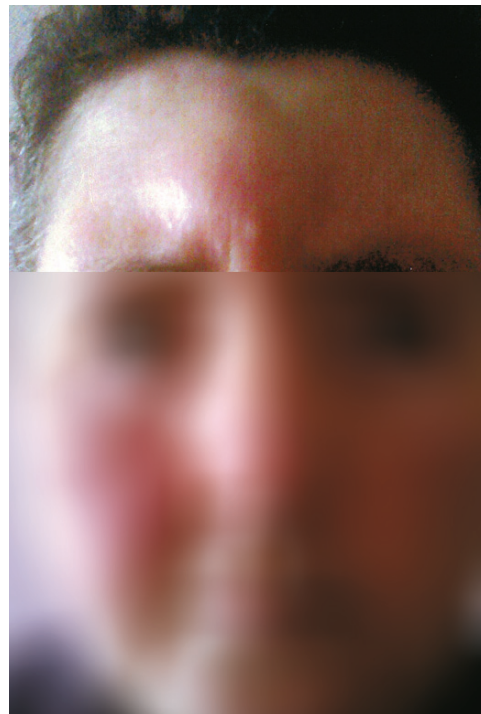


FIGURE 3: A 4cm smooth, localised tender swelling on the central forehead with a pointing centre.

Frontal sinus mucocoeles are the most common paranasal mucocoeles. Expansion of the frontal mucocoele can be inferior (into the paranasal sinuses, nose and orbits), posterior (into the anterior cranial fossa) or anterior (into the forehead skin). Therefore, in some instances, an infected frontal mucocoele may present as a localised tender forehead swelling masquerading as an infected sebaceous cyst.

In this case, a 56-year-old lady with radiological evidence of a frontal sinus mucocoele involving both the inner and outer tables of the frontal cortex presented to another hospital where clinicians were unfamiliar with her primary diagnosis. A misdiagnosis of an infected sebaceous cyst was reached and a surgical intervention was carried out, which could have been potentially harmful to the patient. In this case, however, the intervention was therapeutic to the patient and she was relieved of her constant throbbing headache with no untoward neurological sequelae.

It is important to be cautious when presented with swellings involving the midline of the forehead, lateral canthus or over the cranium near the suture lines. These may represent swellings with intracranial extension, or dehiscence of the brain or its surrounding structures. Clinicians need to be aware of this and need to investigate this further, either with an MRI or a CT scan before a biopsy.

Clinical features of frontal sinus mucocoeles depend upon the specific location and growth behaviour. Visual disturbances represent the most common complaint.<sup>3</sup> Pain is suggestive of an infection (mucopyocoele).<sup>4</sup> Inferior extension into the orbits can lead to ocular disturbances including diplopia, proptosis and ophthalmoplegia. Posterior extension into the anterior cranial fossa can lead to neurological complications, including a cerebrospinal leak, meningoencephalitis and pneumocephalus.<sup>5</sup>

The diagnosis of mucocoeles is aided with CT scanning<sup>6</sup> combined with MRI.<sup>7</sup> CT scanning is utilised to define the regional anatomy and presence of bony erosion. This allows accurate lesion localisation and degree of extension to be determined. Bone erosion can be detected and the surgeon gains invaluable insight on frontal sinus anatomy required for surgical planning. MRI scanning is useful for differentiating mucocoeles from tumours. It also aids in demarcating mucocoeles from other soft tissue structures in cases with intracranial or intraorbital spread.<sup>7</sup>

The primary management of mucocoeles is surgery, which ranges from functional endoscopic sinus surgery to open procedures.<sup>8</sup> As surgical instrumentation has developed, the surgical treatment of mucocoeles has developed into less invasive procedures with emphasis on drainage over ablation. This is less invasive, preserves sinus architecture and leaves no facial scarring.<sup>9</sup> Complex cases with intracranial or orbital extension require an open procedure involving a craniotomy in order to remove the entire cyst lining and establish a drainage pathway to prevent recurrence.<sup>10</sup> Recurrence rates have been variably reported as between 0.9 and 23%.<sup>11</sup>

We highlight the importance of evaluating patient symptoms with the clinical presentation, and the need to review previous related investigations to be aware of potential pitfalls in the differential diagnosis. This allows the condition to be treated in the most appropriate manner, and encourages safer and more effective practice.

## References

1. McHenry, L.C., Sullivan, J.F., Ryan, H.J., Miller, D. Mucocoele of sphenoid sinus. A benign lesion simulating a malignant process. *N Engl J Med* 1960; 262: 549-551.
2. Natvig, K., Larsen, T. Mucocoele of the paranasal sinuses: retrospective clinical and histological study. *J Laryngol Otol* 1978; 92: 1075-82.
3. Stiernberg, C.M., Bailey, B.J., Calhoun, K.H., Quinn, F.B. Management of invasive frontoethmoidal sinus mucocoeles. *Arch Otolaryngol Head Neck Surg* 1986; 112: 1060-1063.
4. Lund, V.J., Henderson, B., Song, Y. Involvement of cytokines and vascular adhesion receptors in the pathology of fronto-ethmoidal mucocoeles. *Acta Otolaryngol (Stockh)* 1993; 113: 540-546.
5. Koike, Y., Tokoro, K., Chiba, Y., Susuki, S., Murai, M., Ito, H. Intracranial extension of paranasal sinus mucocoele: two case reports. *Surg Neurol* 1996; 45: 44-48.
6. Mafee, M.F., Valvassori, G.E., Becker, M. *Imaging of the Head and Neck*. George Thieme Verlag, 2004, ISBN:1588900096.
7. Van tassel, P., Lee, Y.Y., Jing, B.S., et al. Mucocoeles of the paranasal sinuses: MR imaging with CT correlation. *AJR Am J Roentgenol* 1989; 153 (2): 407-412.
8. Galie, M., Mandrioli, S., Tieghi, R., Clauser, L.J. Giant mucocoele of the frontal sinus. *J Craniofac Surg* 2005; 16 (5): 933-935.
9. Kuhn, F.A., Javer, A.R. Primary endoscopic management of the frontal sinus. *Otolaryngol Clin North Am* 2001; 34 (1): 59-75.
10. Delini, R., Missori, P., Lanetti, G., Ciapetta, P., Cantore, G. Mucocoeles of the paranasal sinuses with intracranial and intraorbital extension: report of 28 cases. *Neurosurgery* 1993; 32 (6): 901-906.
11. Devars du Mayne, M., Moya-Plana, A., Malinvaud, D., Laccourreye, O., Bonfils, P. Sinus mucocoele: a natural history and long-term recurrence rate. *Eur Ann Otorhinolaryngol Head Neck Dis* 2012; 129 (3): 125-130.



# Ebola virus disease: review and implications for dentistry in Ireland

**Précis:** The current Ebola virus outbreak has attracted worldwide attention. This article will cover the oral manifestations and dental implications of Ebola virus infection.

**Abstract:** The current Ebola outbreak in West Africa is a global health emergency with implications for all healthcare professionals. This article will review the clinical features, transmission and oral manifestations of Ebola virus infection, and discuss the implications of the current outbreak for dental practices in Ireland. Guidance for managing suspected cases and contacts is also provided.

**Conclusions:** Although Ebola is an alarming disease with a very high mortality rate, it is extremely unlikely that the dental team will encounter a new presentation of Ebola or that it will pose a significant transmission risk. The dental team should be aware of the Health Protection Surveillance Centre (HPSC) Algorithm for Ebola Virus Disease Risk Assessment, and it should be followed as necessary. It is advised to defer dental treatment for 21 days after possible exposure to the Ebola virus.

Journal of the Irish Dental Association 2015; 61 (3): 141-143.

## Introduction

The current Ebola outbreak in West Africa has developed into a global healthcare emergency with implications for all healthcare professionals. This article will review the clinical features, transmission and oral manifestations of Ebola virus infection, and discuss the implications of the current outbreak for dental practices in Ireland.

The Ebola virus is an RNA virus belonging to the *Filoviridae* family that was first recognised after two outbreaks of viral haemorrhagic fever in the Democratic Republic of Congo (previously Zaire) and Southern Sudan in 1976.<sup>1</sup> The former occurred in a village near the Ebola River, after which the virus was named. Five

different species of Ebola virus are now recognised: Bundibugyo, Sudan, Zaire, Reston and Tai Forest. The Zaire strain remains the most lethal, with a mortality rate of 76%, and is the cause of the current, twenty-fifth Ebola epidemic.<sup>1,2</sup> The current outbreak in West Africa, which began in Guinea in March 2014, is the largest and most complex since the virus was first recognised, involving more infections and deaths than all previous outbreaks combined, and involving capital cities and major urban centres for the first time. To date, there have been 25,855 cases and 10,717 deaths<sup>3,4</sup> (correct on April 17, 2015), with the vast majority of cases in Guinea, Liberia and Sierra Leone. There have also been cases in Nigeria, Senegal, Mali, Spain, the United States and United Kingdom.



**Sheila Galvin**  
BDentSc MFDS MB BAO BCh MRCPI  
Dublin Dental University Hospital

### Stephen R Flint

MA PhD BDS FDS RCSEng FFD RCSI MBBS (Hons) FICD FTCD  
Dublin Dental University Hospital

### Claire M Healy

MB BCh BDentSc FDS RCSEng (OM) FFD RCSI (OM) PhD  
Dublin Dental University Hospital

### Corresponding author:

**Sheila Galvin**, Department of Oral Medicine,  
Dublin Dental University Hospital, Lincoln Place, Dublin 2.  
T: 01-612 7314 F: 01-612 7296  
E: sheila.galvin@dental.tcd.ie

Fruit bats of the *Pteropodidae* family are thought to be the natural Ebola virus hosts.<sup>5</sup> Animal to human transmission occurs through close contact with the blood, secretions, organs or other bodily fluids of infected animals. Human-to-human transmission occurs through direct contact with the bodily fluids of infected individuals and through contact with contaminated materials and surfaces. Traditional burial and funeral ceremonies in West Africa, where mourners have direct contact with the bodies of the deceased, are thought to have contributed to the rapid spread of disease in this outbreak. Large numbers of healthcare workers, in a part of Africa unaccustomed to dealing with Ebola, have also been affected.<sup>5</sup>

### Clinical features

The incubation period for Ebola is two to 21 days, although typically symptoms appear eight to ten days after infection.<sup>1,2</sup> First symptoms include sudden onset of high fever, fatigue, myalgia, headache and sore throat. These are then followed by vomiting, diarrhoea and abdominal pain. Around the fifth to seventh day of illness, patients develop thrombocytopaenia leading to severe bleeding from many sites including nose, gingiva, gastrointestinal and genital tracts, and conjunctiva.<sup>5,6</sup> Treatment involves good supportive clinical care, including rehydration and treatment of organ dysfunction. There is no proven



FIGURE 1: Colourised transmission electron micrograph of Ebola virus.

effective treatment available for Ebola as yet, although a wide range of treatments and vaccines are currently being tested.<sup>1</sup>

The virus is only detected in blood after the onset of symptoms. Diagnostic tests include antigen-capture enzyme-linked immunosorbent assay (ELISA)

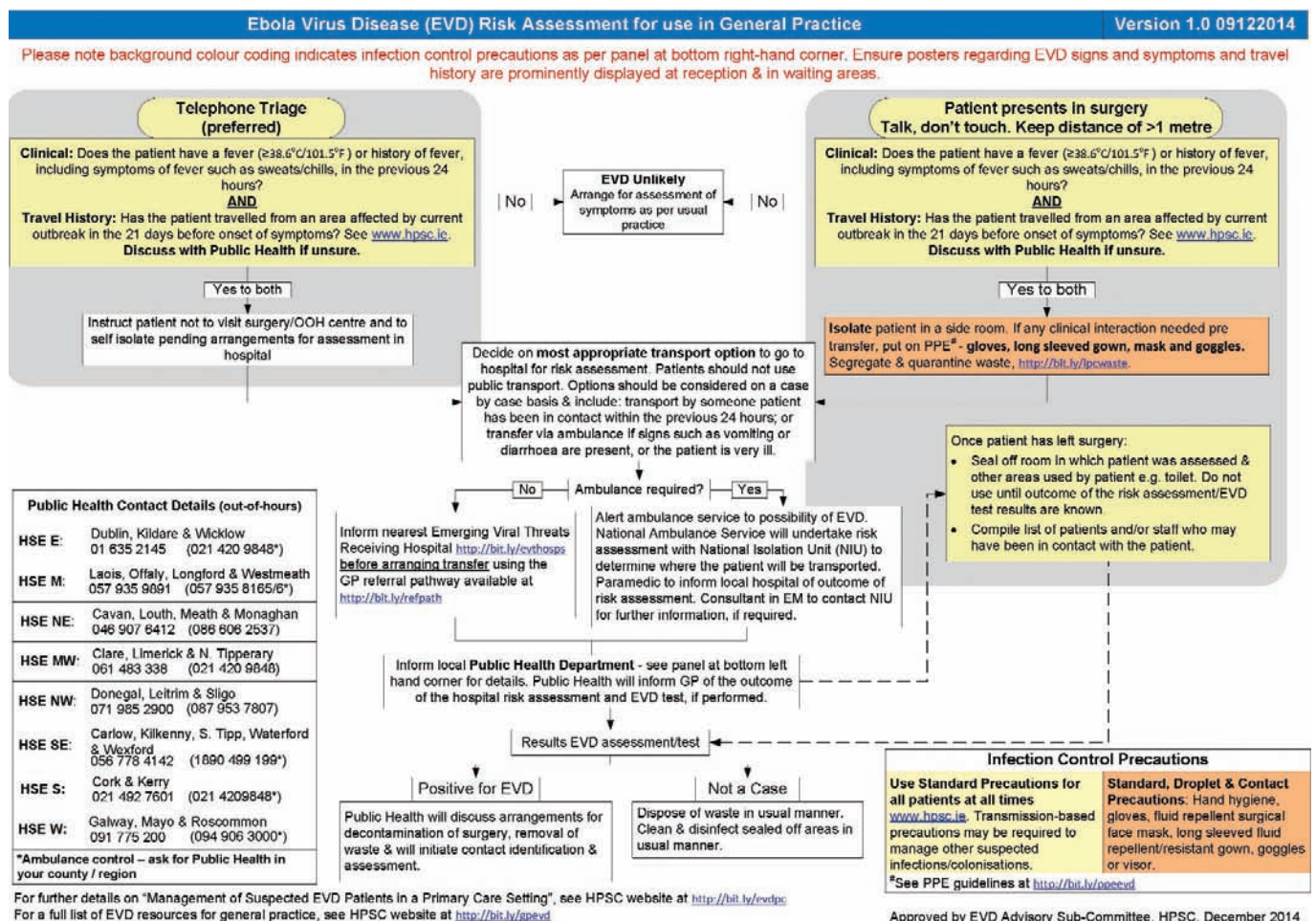


FIGURE 2: HSPC Algorithm for Ebola Virus Disease Risk Assessment for use in General Practice: <http://www.hpsc.ie/A-Z/Vectorborne/ViralHaemorrhagicFever/Ebola/EbolaInformationforGeneralPractitioners/File,14977,en.pdf>.

testing, electron microscopy, IgM ELISA, reverse transcriptase polymerase chain reaction (PCR) assay and virus isolation by cell culture.<sup>1,2</sup>

### Transmission

It is generally accepted that individuals only become infectious once they have developed symptoms, as individuals with asymptomatic Ebola virus infection harbour such low levels of virus that transmission to others is very unlikely.<sup>1,2,7,9</sup> Current evidence shows that direct physical contact and exposure to infected body fluids are the primary modes of transmission.<sup>9</sup> Airborne transmission was not thought to occur; however, there is some controversy emerging, with increasing data supporting the roles of airborne and droplet transmission.<sup>9</sup>

The Ebola virus can be found on the skin and in the saliva, sweat, tears, breast milk, semen, urine, stool and vomit of infected patients. Direct contact, therefore, through broken skin or mucous membranes, with an infected person, or with any of these fluids from an infected person displaying symptoms of Ebola, can lead to transmission of the virus. This includes contact with contaminated clothing, bed linen, medical equipment and other items (fomite transmission), although the virus is readily inactivated by soap and water, and by alcohol.<sup>7</sup> The role of airborne and droplet transmission remains unclear. There is evidence that diarrhoea, vomiting and coughing, particularly in the late stages of the disease, can generate virus-laden infectious aerosols, which would make droplet and airborne transmission from Ebola cases to uninfected persons in close proximity possible.<sup>9</sup> The epidemiological impact of this has yet to be established but it is likely that some degree of aerosol transmission currently occurs. Larger scale airborne transmission is currently felt to be improbable without phenotypic changes in the virus.<sup>9</sup>

### Oral manifestations

The oral manifestations of Ebola include gingival bleeding and odynophagia. Non-specific mucosal lesions, including white and red patches and aphthous-like ulceration, have also been reported. Bleeding is typically a late feature of the disease and is concomitant with bleeding from other sites.<sup>2,6</sup> It is therefore very unlikely that gingival bleeding would be a presenting feature.

### Dental implications

It is extremely unlikely that the dental team will diagnose or treat patients with overt Ebola virus disease as these patients are too unwell to seek dental care. However, it is possible that asymptomatic patients and those in the early stage of disease with non-specific symptoms may undergo dental therapy. It is also possible that the dental team may encounter patients who have recently travelled from areas affected by Ebola. Individuals who have visited an Ebola-affected area but have had no direct contact with the disease are considered very low risk and no restrictions to medical or dental care are required. However, individuals who may have had contact with Ebola should have any non-essential treatment deferred for 21 days after the possible exposure.<sup>7</sup> If the patient's treatment cannot be delayed or managed with pharmaceutical methods then the regional Health Service Executive (HSE) Department of Public Health should be contacted.

The Health Protection Surveillance Centre (HPSC) advises the following risk assessment for general medical practice, which is also applicable to dental practice:<sup>8</sup> Ebola should be suspected in patients who have a fever  $\geq 38.6^{\circ}\text{C}$  or a history of fever in the past 24 hours and have recently visited an Ebola-affected area. Telephone triage is preferred and if the patient is considered a risk then

they should be advised to self-isolate and the regional HSE Department of Public Health should be contacted. In the unlikely event that a patient presents to the surgery and falls into the 'at-risk' category, then they should be isolated in a side room, physical contact avoided and a distance of more than one metre kept between them and any staff. Transfer to an appropriate centre should be arranged. The patient should not use public transport. Ambulance or transport by someone with whom the patient has been in contact in the previous 24 hours is preferable. If the patient tests positively for Ebola, then Public Health will arrange decontamination of the surgery and removal of waste.

### Summary

Although Ebola is an alarming disease with a very high mortality rate, it is extremely unlikely that it will pose a significant risk of transmission in dental practice in Ireland. Gingival bleeding is a late feature occurring concurrently with bleeding from other sites, and so these patients would be too unwell to present for dental treatment. If a patient of concern does present to or contact a dental practice, then the HPSC Algorithm for Ebola Virus Disease Risk Assessment for use in General Practice should be followed. In those who may have been exposed to the virus, it is advised to defer dental treatment for 21 days after the possible exposure.

### Take home messages

- The dental team is very unlikely to encounter a new presentation of Ebola.
- Treatment should be deferred for 21 days in those who may have been exposed to the virus.

### Acknowledgements

We wish to thank Dr Lelia Thornton, Specialist in Public Health Medicine, HSPC, and Gillian Cullen, Surveillance Scientist, HSPC, for their assistance in preparing this manuscript.

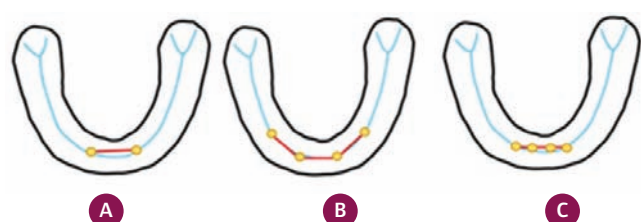
### References

1. **World Health Organisation.** Ebola virus disease, WHO factsheet – <http://www.who.int/elib.tcd.ie/mediacentre/factsheets/fs103/en/>.
2. **Samaranayake, L., Scully, C., Nair, R.G., Petti, S.** Viral haemorrhagic fevers with emphasis on Ebola virus disease and oro-dental healthcare. *Oral Dis* 2015; 21; 1-6.
3. **Centres for Disease Control and Prevention.** 2014 Ebola Outbreak in West Africa – Case counts – <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>.
4. **World Health Organisation.** Ebola situation reports – <http://apps.who.int/ebola/en/ebola-situation-reports>.
5. **World Health Organisation.** Ebola in West Africa: 12-months on – <http://apps.who.int/elib.tcd.ie/ebola/en/news/news/ebola-west-africa-12-months>.
6. **Samaranayake, L., Peiris, J.S.M., Scully, C.** Ebola virus infection: an overview. *Br Dent J* 1996; 180: 264-266.
7. **Public Health England.** Ebola Guidance for Dental Care Teams. PHE publications gateway number 2014616 – <https://www.gov.uk/government/collections/ebola-virus-disease-clinical-management-and-guidance>.
8. **Health Protection Surveillance Centre.** Management of suspected EVD patients in a primary care setting – <http://www.hpsc.ie/A-Z/Vectorborne/ViralHaemorrhagicFever/Ebola/>.
9. **Osterholm, M.T., et al.** Transmission of Ebola Viruses: What we know and what we do not know – <http://mbio.asm.org/content/6/2/e00137-15.full/>.

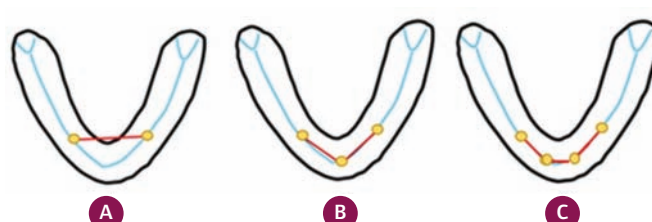


# Mandibular implant-supported overdentures: attachment systems, and number and locations of implants – Part II

Journal of the Irish Dental Association 2015; 61 (3): 144-148.



**FIGURE 1:** A schematic representation of U-shaped mandibular edentulous ridges. Two implants are splinted with a single bar (A) around which a rotational movement of the overdenture may occur. In (B), four implants are placed in the anterior region of the mandible and connected with a bar of three segments. In this case, the bar can be cantilevered on both sides distal to the terminal abutments. In (C), four implants are placed on the same line. The spaces between the implants are limited; therefore, a clip with an adequate length that provides the required retention is not achievable (modified from Mericske-Stern et al.).<sup>12</sup>



**FIGURE 2:** A schematic representation of v-shaped (narrow) mandibular edentulous ridges. A bar attachment on two implants (splinted) is not always indicated as it may encroach on the tongue space and interfere with function (A). Three implants connected with two bar segments is indicated when good retention and stability are not possible with two non-splinted implants (B). Four splinted implants with three segments can also be used with an RISO and a fixed prosthesis (modified from Mericske-Stern et al.).<sup>12</sup>

## Factors to be considered when selecting an attachment type

Selection of an attachment system that is suitable for a specific clinical situation is sometimes difficult. A good knowledge of the different systems and their mechanical properties, and the way in which they distribute load, is important. For instance, when short implants are used resilient attachments should be applied to ensure a degree of relief on the supporting implants. This allows denture movements to occur and enables the edentulous ridge to absorb the masticatory forces. Consequently, a significant amount of masticatory force is dissipated by the edentulous ridge. Some factors that should be identified and considered in order to obtain the best treatment option with the use of RISOs include the following:

## 1. Quantity and quality of available residual ridge

When the alveolar residual ridge is severely resorbed, a bar attachment and a telescopic attachment provide better horizontal stability, and most occlusal loads are dissipated through the supporting implants as previously stated. However, the potential risk for mechanical failure of the implant or its components is a concern if an adequate number, size and length of the implants are not appreciated.

On the other hand, when bone resorption is minimal, individual attachments such as a Locator, ball or magnet can be used. In this case the denture is mainly tissue supported and the attachments may just be used to retain the denture.



**Abdulhadi Warreth**

BDentSc MDentSc MFDRC SI PhD  
Trinity College Dublin

**Abdulhadi Warreth**  
BDentSc MDentSc MFDRC SI PhD  
Trinity College Dublin

**Caroline Byrne**  
BA PhD  
Trinity College Dublin

**Aslam Fadel Alkadhimi**  
BA BDentSc  
Trinity College Dublin

**Edel Woods**  
BCL LLM  
Trinity College Dublin

**Ahmed Sultan**  
BA BDentSc  
Brigham and Women's Hospital,  
Boston, MA, USA  
and  
Harvard School of Dental Medicine,  
Boston, MA, USA

## Corresponding author:

Dr Abdulhadi Warreth, Division of Restorative Dentistry and Periodontology,  
Dublin Dental University Hospital, Lincoln Place, Dublin 2  
E: warrethab@dental.tcd.ie

## 2. Shape of the dental arch

When the residual alveolar ridge is narrow and has a v-shape, the use of two splinted implants is not recommended because the bar may encroach upon tongue space and interfere with function and speech (**Figure 2**). If the bar is placed more labially, it may interfere with the lower lip and also affect the denture stability, and may have a negative impact on the aesthetic outcome. Therefore, individual attachments are ideal for such clinical problems when an adequate space between the implants can be granted. Three splinted implants may also provide a good alternative (**Figure 2B**). With three splinted implants, biomechanical risk may be increased, particularly when the implants are short and narrow. In such a situation, the denture should be totally tissue supported whenever possible.

A U-shaped residual ridge with adequate bone permits placement of four implants that are connected with three bar segments (**Figure 1**). However, the inter-implant distances should be wide enough to accommodate the bar and the clips in order to avoid distortion and unsatisfactory retention. The distance between the most anterior implants and the most posterior implant (antero-posterior spread) dictates the cantilever extension if required.

## 3. Angle between implants

There is general agreement that when individual (non-splinted) attachments, such as a ball system, are used, implants should be installed parallel to each other to gain the best retention and to reduce the wear rate of the matrices. If this is not possible, other options such as the use of angled abutments or bars may provide an alternative solution. Furthermore, Locators and magnet attachments may also provide a solution when the implants are not parallel.

## 4. Amount of required retention

Bar attachments usually provide more retention than individual attachments. Thus, in patients who require maximum retention, bar attachments may fulfil this requirement and represent the most ideal option. A bar that has multiple segments can be combined with individual attachments in order to maximise the degree of retention, support and stability. Also, an FISO may be an alternative.

When a single bar is used with two implants, its length should be between 20 and 22mm to obtain good retention and stability. In this case, one or two clips can be used to gain the optimal retention. When the bar is too short, stability and retention are not achievable. If the bar is too long, it may bend when it is loaded and consequently is distorted and may be broken.

## 5. Restorative space

Restorative space is a three-dimensional space that is available to accommodate various parts of the overdenture and its attachment system. This space is surrounded bucco-lingually by cheek, lips and tongue, and vertically by the edentulous ridge and the occlusal plane of the prospective overdenture. Therefore, it should be appreciated in vertical and horizontal dimensions. Hence, room for the attachment, the superstructure, the acrylic and the teeth is required. If this room is not available, the outcome is negatively affected and, for example, mechanical failure of the denture is a possibility.

The aesthetic requirement of the final restoration (overdenture) is significantly influenced by the available restorative space, as well as by the used attachment system. As an example, when vertical space is limited, the use of a bar attachment may violate the inter-occlusal (free-way) space to accommodate

the restoration, which results in an inferior aesthetic outcome of the overdenture, as well as possibly leading to other complications that arise as a result of this error. In such a case the attachments with a low profile are the best option; however, other factors should also be considered.

A minimum of 12mm of vertical restorative space from the crest of the ridge to the incisal edge is usually required with the bar system. This distance consists of 4mm for the bar, at least 1mm for the space between the inferior surface of the bar and the ridge, and 7mm for the teeth, the acrylic and the clip. A space between the bar and the tissue is required to facilitate oral hygiene, and reduce the possibility of plaque and calculus deposition. When the Locator attachment is used, a minimum of 8.5mm is required, while the ball attachment requires 10–12mm.

The horizontal restorative space in the bucco-lingual direction should also be considered, and the attachment should be placed on the crest of the ridge to achieve the best biomechanical advantages of the attachment. As well as this, the horizontal space in the mesio-distal direction should also be considered. Thus, a good distance between the adjacent implants, which provides a good biomechanical advantage and facilitates oral hygiene, should be considered.

## 6. Treatment costs

Treatment and repair costs should be considered when the treatment plan is made, and the patient should be made aware of these costs. For instance, a bar or telescopic attachment is more expensive when compared with other attachment systems. Furthermore, when bar repair or replacement is required, they cannot be carried out clinically and, therefore, laboratory work will be needed. This is a lengthy and expensive process. Also, the denture will be held for some time and the patient may have to leave without the denture. Also, when an implant tissue-supported overdenture is considered, bone resorption of the tissue-borne regions will continue. Therefore, relining and occlusal adjustments are needed on a regular basis.

The cost of treatment and its inter-relationship with other factors should be investigated and considered. However, the treatment cost may compromise and interfere with providing the best treatment option.

## 7. Other factors

Factors such as the patient's expectations of the prosthetic, personal choice, and knowledge and skills of the dentist and laboratory technicians, as well as opposing (maxillary) arch, may play a role in the selection of a specific attachment system and type of overdenture. All of these factors are interrelated, and their individual and combined effects should be considered and appreciated when the treatment plan is made.

## The anterior region of the mandible is an ideal site for implants

There is strong evidence indicating that implant success is highly reliant on the volume and quality of the peri-implant bone. Bone quality in the anterior area of the mandible is much better than that in the posterior region,<sup>15</sup> and implant failure rate in this site is lower than in any other site in the mandible, as well as in the maxilla.<sup>23</sup> Implant placement in the inter-foraminal area is less critical than in other areas of the mandible, and a success rate of ≥95% was reported for implants placed in this region.<sup>10</sup> Furthermore, after tooth extraction, bone resorption in this area is usually less than that in the posterior region, which gives an opportunity for installing the implants without the need for other surgical methods such as ridge augmentation and the use of graft materials.

Therefore, the mandibular anterior area represents an ideal site for placement of dental implants in the edentulous mandible with a high success rate.

### Two-implant RISOs as a first choice standard of care for the edentulous mandible

The decision on the number of implants that suits a particular clinical situation is to some extent subjective and depends on the clinician's knowledge and experience, as well as on many other factors. However, two consensus statements on the number of implants to be used with RISOs were published in 2002 and 2009, respectively. Both consensus statements recommended that RISOs with two implants should be considered as the first-choice standard of care for an edentulous mandible.<sup>24,25</sup> A more recent survey was carried out by an expert panel of 16 representatives of academic prosthodontists to investigate if there was agreement on the gold standard for an edentulous mandible between the two-implant-supported mandibular overdentures and a conventional mandibular complete denture.<sup>26</sup> The survey results concurred with the two consensus statements of 2002 and 2009.

Even though the RISO with two implants is a reliable clinical decision and is considered as the minimum standard that should be appropriate for most patients, it does not suit all patients and the abovementioned factors should be taken into account when planning for mandibular RISOs.<sup>24,25</sup>

As a general guide, two implants of 4mm diameter and a minimum of 8mm length are sufficient in order to obtain satisfactory retention and stability. The two implants are preferably located in the lateral incisor areas and not in the canine region.<sup>27-29</sup> This location is regarded as the best site for installation of the implants for several reasons. For instance, if a removable RISO is supported by two implants that are placed in the canine regions, and the RISO then needs to be altered into a fixed one where five implants are considered essential, placement of three additional implants between the two existing implants may not be possible as the space would be insufficient. Additionally, it has been suggested that the anterior mandibular area should be divided into five equal spaces, in which prospective implants may be positioned.<sup>15</sup> By this strategy, more implants may be installed if the overdenture needs to be changed from a two-implant-supported overdenture to a four-implant-supported overdenture. Furthermore, if four implants were installed with an equal distance between each, placement of an additional implant when it is required is not possible, as there will be insufficient space to accommodate the fifth implant.

### Splinted versus non-splinted implants

In general, when two or more implants are used to retain an RISO, two basic techniques are described and widely used: connecting the implants to each other (splinted); or, using them individually (non-splinted) (Figures 1, 2 and 3). For example, two implants may be joined together with a straight bar that has an ovoid/circle cross-section, which permits denture movement vertically; thus, the implants as well as the mucosa will be involved in the dissipation of the occlusal force.<sup>5,15</sup> Two implants can also be used individually in a non-splinted fashion with a ball, Locator, magnetic or telescopic attachment (see later). However, patient satisfaction regarding retention and stability of the RISO declined significantly with the use of the two non-splinted ball attachments, while patient satisfaction with single-bar and triple-bar (two and four implants) attachments did not change with time.<sup>30</sup>

When two implants are used in the construction of the RISO and to reduce mechanical failures of the prosthesis and/or implants, the overdenture should

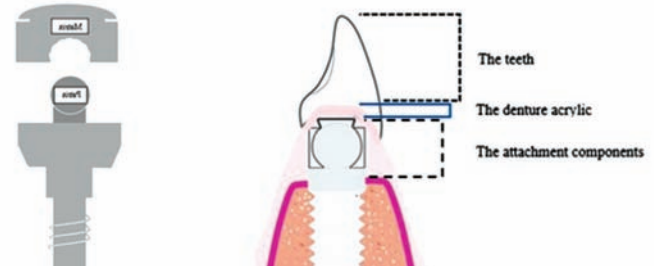


FIGURE 3: A schematic representation of the ball attachment system showing the vertical restorative space required when a ball attachment system is used. Room for the attachment components, denture acrylic base and the denture teeth is needed.

have a single axis of rotation during function. This rotation will allow the alveolar ridge to take part in dissipation of the occlusal loadings. This design requires that the denture base be extended in a similar fashion, as in the case of a conventional complete denture. This allows a maximum area of tissue to support the denture. However, when a bar with multiple axes is used, the denture is exposed to torque that consequently leads to damage of the attachment and the denture, in addition to overloading of the implants.<sup>11,31</sup>

### Single-implant-retained RISOs

In an attempt to simplify the technique while still maintaining denture stability, retention, and patient comfort and satisfaction, a single implant mandibular complete overdenture can be used.<sup>32</sup> In this case only one implant was installed in the midline of the mandible with a ball, a Locator or a magnet attachment. However, because of a limited number of well-controlled clinical studies, it is difficult to draw a sound conclusion regarding the viability of one-implant-supported overdentures.<sup>33</sup>

### Use of mini-implants in RISOs

Mini dental implants (MDIs) are one-piece implants with a diameter of less than 3mm (range from 1.8mm to 3mm). They may be used as an alternative option when a conventional implant is not possible, as when the alveolar ridge is severely resorbed or in systemically compromised patients. The advantages of using mini-implants include relatively low cost, simplicity of placement, minimally invasive surgery and significantly shorter healing periods than those for conventional implants.<sup>34</sup> However, mini-implants have a reduced diameter and surface area; therefore, they are subjected to greater occlusal loading, which may lead to mechanical failure, such as deformation and fracture. Nevertheless, when four mini-implants were used to support and retain the RISO for three years, high survival rates were reported irrespective of whether mini-implants were immediately or early loaded (91.7% and 96.7%, respectively).<sup>35</sup> Nevertheless, well-controlled randomised clinical studies are required.

### Complications and attachment failure

RISO failure is most commonly of a mechanical nature.<sup>18</sup> Types of failure include: fracture of the acrylic base, teeth and retentive clip; reduction of retention as a result of wear of the retentive elements or loosening of matrices and screws; fracture or wear of the clip and matrix; fracture of solder joints; and, dislodgement of the attachments. Complications as a result of plaque



**TABLE 3: A summary of the results of several laboratory studies on attachment systems.**

1. Irrespective of the material used (with the exception of magnetic attachments), the majority of attachment systems show a degree of wear with use.
2. As a result of the wearing process, a decrease or complete loss of retention is usually seen after use; the exception is telescopic systems.
3. The telescopic crown attachment system shows an increase in retention with use, which is explained as a result of wear. This leads to an increase in the mechanical adaptation between the matrix and the patrix.
4. The magnetic system shows the lowest retention capacity but the least wear.
5. The magnetic system shows a low percentage of retention loss after use.
6. A high percentage of retention loss was seen with ball, Locator and Extra-coronal Resilient Attachment (ERA) systems.
7. When one attachment element is made of plastic and the other is made of metal, such as in the Locator and ERA systems, the decrease in retention seen is a result of distortion of the plastic patrix, as insignificant wear was detected in the metal matrix.
8. The decrease in retention that is seen with the other attachment systems is believed to be due to wear of the matrix or patrix, or both attachment parts.
9. Clinical performance of the Locators and ERAs are similar, as both consist of plastic patrices and metal matrices.

accumulation, such as mucosal enlargement and peri-implantitis, are also reported.<sup>34,36</sup> Relining of the denture is also required regularly and may need to be carried out every four years<sup>37</sup> to compensate for the changes in the alveolar ridge that may occur. A summary of several laboratory studies on attachment systems is presented in **Table 3**.

### Conclusion

There is a general consensus that RISOs provide significantly greater patient satisfaction than conventional complete dentures. The use of two implants to support a mandibular complete denture is a reliable solution to resolve problems that are associated with conventional complete dentures. A comprehensive and careful treatment plan, which begins with the construction of a complete denture even before placement of the implant, is a wise approach to obtain the greatest benefit from the attachment systems.

As maintenance and aftercare are more frequently required in RISO wearers than in patients with conventional complete dentures, and elderly patients are more susceptible to oral diseases, the possibility of detecting oral disease in its early stages would be an additional important advantage in the use of RISOs.

### Acknowledgement

The authors would like to thank Dr Osama Omar for **Figures 4** and **5**.

### References

1. Vecchia, M.P., Regis, R.R., Cunha, T.R., de Andrade, I.M., da Matta, J.C., de Souza, R.F. A randomized trial on simplified and conventional methods for complete denture fabrication: cost analysis. *J Prosthodont* 2014; 23 (3): 182-191.
2. Carlsson, G.E., Omar, R. The future of complete dentures in oral rehabilitation. A critical review. *J Oral Rehabil* 2010; 37 (2): 143-156.
3. Sohrabi, K., Mushantat, A., Esfandiari, S., Feine, J. How successful are small-diameter implants? A literature review. *Clin Oral Implants Res* 2012; 23 (5): 515-525.
4. Massad, J.J., Ahuja, S., Cagna, D. Implant overdentures: selections for attachment systems. *Dent Today* 2013; 32 (2): 128, 130-132.
5. Burns, D.R. Mandibular implant overdenture treatment: consensus and controversy. *J Prosthodont* 2000; 9 (1): 37-46.
6. Hillerup, S. Preprosthetic mandibular vestibuloplasty with buccal mucosal graft. A 2-year follow-up study. *Int J Oral Surg* 1982; 11 (2): 81-88.
7. Hochstedler, J.L., Finger, I.M. Preprosthetic surgery. *Gen Dent* 1998; 46 (6): 626-630.
8. Matras, H. A review of surgical procedures designed to increase the functional height of the resorbed alveolar ridge. *Int Dent J* 1983; 33 (4): 332-338.
9. Doundoulakis, J.H., Eckert, S.E., Lindquist, C.C., Jeffcoat, M.K. The implant-supported overdenture as an alternative to the complete mandibular denture. *J Am Dent Assoc* 2003; 134 (11): 1455-1458.
10. Chee, W., Jivrai, S. Treatment planning of the edentulous mandible. *Br Dent J* 2006; 201: 337-347.
11. Hoffmann, O., Beaumont, C., Tatakis, D.N., Zafiropoulos, G.G. Telescopic crowns as attachments for implant supported restorations: A case series. *J Oral Implantol* 2006; 32 (6): 291-299.
12. Mericske-Stern, R. Prosthodontic management of maxillary and mandibular overdentures. In: Feine, J.S., Carlsson, G.E. *Implant Overdentures: The standard of care for edentulous patients* (1st ed.). Quintessence Publishing, 2003: 83-98.
13. Simon, H., Yanase, T.R. Terminology for implant prostheses. *Int J Oral Maxillofac implants* 2003; 18 (4): 539-543.
14. Tomasi, C., Idmyr, B.O., Wennström, J.L. Patient satisfaction with mini-implant stabilised full dentures. A 1-year prospective study. *J Oral Rehabil* 2013; 40 (7): 526-534.
15. Misch, C.E. An organised approach to implant-support overdenture. In: Misch, C.E. *Contemporary Implant Dentistry* (3rd ed.). St Louis, Mo: CV Mosby; 2008: 293-313.
16. Naert, I., Alsaadi, G., Quirynen, M. Prosthetic aspects and patient satisfaction with two-implant-retained mandibular overdentures: a 10-year randomized clinical study. *Int J Prosthodont* 2004; 17 (4): 401-410.
17. Lee, J.Y., Kim, H.Y., Shin, S.W., Bryant, S.R. Number of implants for mandibular implant overdentures: a systematic review. *J Adv Prosthodont* 2012; 4 (4): 204-209.
18. Alsabeeha, N.H., Payne, A.G., Swain, M.V. Attachment systems for mandibular two-implant overdentures: a review of *in vitro* investigations on retention and wear features. *Int J Prosthodont* 2009 (5); 22: 429-440.
19. Kleis, W.K., Kämmerer, P.W., Hartmann, S., Al-Nawas, B., Wagner, W. A comparison of three different attachment systems for mandibular two-implant overdentures: one-year report. *Clin Implant Dent Relat Res* 2010; 12 (3): 209-218.
20. Riley, M.A., Williams, A.J., Speight, J.D., Walmsley, A.D., Harris, I.R. Investigations into the failure of dental magnets. *Int J Prosthodont* 1999; 12 (3): 249-254.
21. Allen, P.F., Ulhuq, A., Kearney, J. Strategic use of a new dental magnet system to

- retain partial and complete overdentures. *Eur J Prosthodont Restor Dent*.2005; 13 (2): 81-86.
22. Heckmann, S.M., Schrott, A., Graef, F., Wichmann, M.G., Weber, H.P. Mandibular two-implant telescopic overdentures. *Clin Oral Implants Res* 2004; 15 (5): 560-569.
23. Gokcen-Rohlig, B., Yaltirik, M., Ozer, S., Tuncer, E.D., Evlioglu, G. Survival and success of ITI implants and prostheses: retrospective study of cases with 5-year follow-up. *Eur J Dent* 2009; 3 (1): 42-49.
24. Feine, J.S., Carlsson, G.E., Awad, M.A., Chehade, A., Duncan, W.J., *et al*. The McGill consensus statement on overdentures. Mandibular two-implant overdentures as first choice standard of care for edentulous patients. Montreal, Quebec, May 24-25, 2002. *Int J Oral Maxillofac Implants* 2002; 17 (4): 601-602.
25. British Society for the Study of Prosthetic Dentistry. The York consensus statement on implant-supported overdentures. *Eur J Prosthodont Restor Dent* 2009; 17 (4): 164-165.
26. Das, K.P., Jahangiri, L., Katz, R.V. The first-choice standard of care for an edentulous mandible: a Delphi method survey of academic prosthodontists in the United States. *J Am Dent Assoc* 2012; 143 (8): 881-889.
27. Scherer, M.D., McGlumphy, E.A., Seghi, R.R., Campagni, W.V. Comparison of retention and stability of two implant-retained overdentures based on implant location. *J Prosthet Dent* 2014; 112: 515-521.
28. Hong, H.R., Pae, A., Kim, Y., Paek, J., Kim, H.S., Kwon, K.R. Effect of implant position, angulation, and attachment height on peri-implant bone stress associated with mandibular two-implant overdentures: a finite element analysis. *Int J Oral Maxillofac Implants* 2012; 27 (5): e69-76.
29. Al-Ansari, A. No difference between splinted and unsplinted implants to support overdentures. *Evid Based Dent* 2012; 13 (2): 54-55.
30. Timmerman, R., Stoker, G.T., Wismeijer, D., Oosterveld, P., Vermeeren, J.I., van Waas, M.A. An eight-year follow-up to a randomized clinical trial of participant satisfaction with three types of mandibular implant-retained overdentures. *J Dent Res* 2004; 83 (8): 630-633.
31. Bryant, S.R., Walton, J.N., MacEntee, M.I. A 5-year randomized trial to compare 1 or 2 implants for implant overdentures. *J Dent Res* 2015; 94: 36-43.
32. Cordioli, G., Majzoub, Z., Castagna, S. Mandibular overdentures anchored to single implants: a five-year prospective study. *J Prosthet Dent* 1997; 78 (2): 159-165.
33. Alsabeeha, N., Payne, A.C., De Silva, R.K., Swain, M.V. Mandibular single-implant overdentures: a review with surgical and prosthodontic perspectives of a novel approach. *Clin Oral Implants Res* 2009; 20 (4): 356-365.
34. Steffen, R.P., White, V., Markowitz, N.R. The use of ball-clip attachments with an implant-supported primary-secondary bar overdenture. *J Oral Implantol* 2004; 30: 234-239.
35. Maryod, W.H., Ali, S.M., Shawky, A.F. Immediate versus early loading of min-implants supporting mandibular over dentures: A preliminary 3-year clinical outcome report. *Int J Prosthodont* 2014; 27: 553-560.
36. Kuoppala, R., Närpänkangas, R., Raustia, A. Outcome of implant-supported overdenture treatment – a survey of 58 patients. *Gerodontology* 2012; 29 (2): e577-584.
37. Attard, N.J., Zarb, G.A. Long-term treatment outcomes in edentulous patients with implant overdentures: the Toronto study. *Int J Prosthodont* 2004; 17 (4): 425-433.



# More effective caries prevention than a regular fluoride toothpaste

**76% reduction in root carious lesions<sup>1</sup>**  
Prescribe Colgate® Duraphat® Fluoride Toothpaste

**Colgate Duraphat®** Proven caries protection

**Colgate**

YOUR PARTNER IN ORAL HEALTH

[www.colgateprofessional.ie](http://www.colgateprofessional.ie)

**Name of the medicinal product:** Duraphat® 5000 ppm Fluoride Toothpaste.  
**Active ingredient:** Sodium Fluoride 1.1 %w/w (5000ppm F). **Indications:** For the prevention of dental caries in adolescents and adults, particularly amongst patients at risk from multiple caries (coronal and/or root caries). **Dosage and administration:** Brush carefully on a daily basis applying a 2 cm ribbon onto the toothbrush for each brushing, 3 times daily, after each meal. **Contraindications:** This medicinal product must not be used in cases of hypersensitivity to the active substance or to any of the excipients. **Special warnings and precautions for use:** An increased number of potential fluoride sources may lead to fluorosis. Before using fluoride medicines such as Duraphat, an assessment of overall

fluoride intake (i.e. drinking water, fluoridated salt, other fluoride medicines - tablets, drops, gum or toothpaste) should be done. Fluoride tablets, drops, chewing gum, gels or varnishes and fluoridated water or salt should be avoided during use of Duraphat Toothpaste. When carrying out overall calculations of the recommended fluoride ion intake, which is 0.05 mg/kg per day from all sources, not exceeding 1 mg per day, allowance must be made for possible ingestion of toothpaste (each tube of Duraphat 500 mg/100 g Toothpaste contains 255 mg of fluoride ions). This product contains Sodium Benzoate. Sodium Benzoate is a mild irritant to the skin, eyes and mucous membrane. **Undesirable effects:** Gastrointestinal disorders: Frequency not known (cannot be estimated from the

available data); burning oral sensation. Immune system disorders: Rare ( $\geq 1/10,000$  to  $<1/1,000$ ): Hypersensitivity reactions. **Legal classification:** POM. **Marketing authorisation number:** PA 0320/008/002. **Marketing authorisation holder:** Colgate-Palmolive (U.K.) Ltd. Guildford Business Park, Middleton Road, Guildford, Surrey, GU2 8JZ. **Recommended retail price:** €8.99 (51g tube). **Date of revision of text:** July 2012.

**Reference:** 1. Baysan A, Lynch E, Ellwood R et al. Caries Res 2001;35:41-46.



## Periodontal plastic surgery

Zucchelli, G., Mounssif, I.

The aim of the present article is to summarise current knowledge in terms of the aetiology, diagnosis, prognosis and surgical treatment of gingival recession. While the main aetiological factors (i.e., toothbrushing trauma and bacterial plaque) are well established, challenges still remain to be solved in the diagnostic, prognostic and classification processes of gingival recession, especially when the main reference parameter – the cemento-enamel junction – is no longer detectable on the affected tooth, or when there is a slight loss of periodontal interdental attachment. Root coverage in single type gingival recession defects is a very predictable outcome following the use of various surgical techniques. The coronally advanced flap, with or without connective tissue grafting, is the technique of choice. The adjunctive use of connective tissue grafts improves the probability of achieving complete root coverage. Surgical coverage of multiple gingival recessions is also predictable with the coronally advanced flap and the coronally advanced flap plus the connective tissue graft, but no data are available indicating which, and how many, gingival recessions should be treated adjunctively with connective tissue grafting in order to limit patient morbidity and improve the aesthetic outcome. None of

the allograft materials currently available can be considered as a full substitute for the connective tissue graft, even if some recent results are encouraging. The need for future studies with patient-based outcomes (i.e., aesthetics and morbidity) as primary objectives is emphasised in this review.

*Periodontology* 2000; 68 (1): 333-368.

## The effect of lifetime fluoridation exposure on dental caries experience of younger rural adults

Croccombe, L.A., Brennan, D.S., Slade, G.D., Stewart, J.F., Spencer, A.J.

**Background:** The aim of this study was to confirm whether the level of lifetime fluoridation exposure is associated with lower dental caries experience in younger adults (15-46 years).

**Methods:** Data of the cohort born between 1960 and 1990 residing outside Australia's capital cities from the 2004-2006 Australian National Survey of Adult Oral Health were analysed. Residential history questionnaires were used to determine the percentage of each person's lifetime exposure to fluoridated water (<50%/50+%). Examiners recorded decayed, missing and filled permanent teeth (DMFT). Socio-demographic variables, periodontal risk factors and access to dental care were included in multivariable least-squares regression models.

**Results:** In bivariate analysis, the higher level of fluoridation category had significantly lower DMFT (mean 6.01 [SE = 0.62]) than the lower level of fluoridation group (9.14 [SE = 0.73],  $p < 0.01$ ), and lower numbers of filled teeth (4.08 [SE = 0.43], 7.06 [SE = 0.62],  $p < 0.01$ ). In multivariate analysis, the higher number of full-time equivalent dentists per 100,000 people was associated with a lower mean number of missing teeth (regression coefficient estimate = -1.75,  $p = 0.03$ ), and the higher level of water fluoridation with a lower mean DMFT (-2.45,  $p < 0.01$ ) and mean number of filled teeth (-2.52,  $p < 0.01$ ).

**Conclusions:** The higher level of lifetime fluoridation exposure was associated with substantially lower caries experience in younger rural adults, largely due to a lower number of filled teeth.

*Australian Dental Journal* 2015; 60 (1): 30-37.

## A randomised clinical trial on the use of intermediate bonding on the retention of fissure sealants in children

McCafferty, J., O'Connell, A.C.

**Objective:** To assess whether an adhesive bonding agent increases the retention of resin fissure sealants on first permanent molars (FPMs) and to determine any difference in sealant retention on occlusal, buccal or palatal surfaces. The effect of the child's behaviour on the retention of the sealants was also assessed.

**Methods:** One hundred and twelve children were recruited (age range five to 15 years). One operator placed sealants (Helioseal, Ivoclar Vivadent) on 390 FPMs using a split-mouth design. The study group ( $n = 195$ ) had an ethanol-

■ **UK ASSOCIATE OPPORTUNITIES**

Rodericks are a dynamic group of NHS/mixed dental practices across the UK. A company for dentists, led by dentists.

With the skills and knowledge we have gathered over many years, we ensure your care remains at the heart of everything we do.

We are recruiting Associates for some of our busy, established practices across the country. Our positions are suitable for both experienced and current foundation dentists.

Our modern practices are computerised, have digital radiography, radio endo and premium materials. Foundation dentists have the reassurance of a 'buddy' in the practice.

|                   |                    |                |
|-------------------|--------------------|----------------|
| • Aldershot       | • Derbyshire       | • Nottingham   |
| • Buckingham      | • Milton Keynes    | • Oundle,      |
| • Burton-on-Trent | • Newcastle-       | • Peterborough |
| • Somerset        | • under-Lyme       | • Oxfordshire  |
| • Cheltenham      | • Northamptonshire |                |

**'The Corporate with a Difference'**

The above locations are a selection of opportunities available. We are also recruiting for 'REGIONAL DENTISTS' Nationwide.

For more information and to see our full list, please visit:

**[www.rodericksdentistjobs.co.uk](http://www.rodericksdentistjobs.co.uk)**

Or contact Karen Butt, Assistant Recruitment Manager on 00 44 1604 602491 (from R.O.I.) or 01 604 602491 (from N.I.)  
CV's to: [opportunity@rodericksdental.co.uk](mailto:opportunity@rodericksdental.co.uk)

**Rodericks Ltd is an equal opportunities employer**

DC260110

**Rodericks Ltd**

based adhesive bond (ExciteF, Ivoclar Vivadent) placed prior to sealant application, and no bond was used in the control group ( $n = 195$ ). The sealants were reviewed after 12 months and analysed using Fisher's exact test.

**Results:** The addition of a bonding agent significantly increased sealant retention ( $P = 0.0005$ ). Retention of bonded sealants on occlusal surfaces was higher (98%) than non-bonded sealants (93%) ( $P = 0.08$ ). Bonded sealants placed on buccal/palatal surfaces were retained (92%) more successfully than non-bonded sealants (82%) ( $P = 0.0005$ ). The behaviour of the patient significantly affected the retention of fissure sealants ( $P = 0.0001$ ).

**Conclusions:** The addition of an ethanol-based bonding agent significantly increased the retention of sealants at 12 months, particularly on palatal fissures of maxillary first permanent molar teeth.

*Int J Paediatr Dent* 2015; Apr 10. doi: 10.1111/ipd.12165. [Epub ahead of print].

### Diagnostic accuracy of conventional and digital radiography for detecting misfit between the tooth and restoration in metal-restored teeth

Liedke, G.S., Spin-Neto, R., Boessio Vizzotto, M., Da Silveira, P.F., Dias Silveira, H.E., Wenzel, A.

**Statement of problem:** Although the postprocessing of digital images with enhancement filters could lead to the presence of artifacts and result in false positive diagnoses, no study has analysed whether the use of digital

radiographs and/or postprocessing of digital images interferes with the diagnosis of marginal adaptation in metal-restored teeth.

**Purpose:** The purpose of this study was to compare the diagnostic accuracy of conventional and digital radiographic images with and without filters for detecting a misfit between the tooth and restoration in metal-restored teeth.

**Material and methods:** Forty teeth with mesial-occlusal-distal inlays and 40 with complete crowns (each with a perfect fit, 20 with a 0.2mm gap and 20 with a 0.4mm gap) were imaged with conventional film and digital phosphor plate systems. Digital radiographs were exported as original images and with edge enhancement (high and low), inversion, and pseudo-three-dimensional filters. Four examiners assessed the presence of gaps by using a categorical scale (fit, misfit, cannot decide). Sensitivity, specificity and overall accuracy were calculated for each variable. In addition, time spent scoring the images was recorded. A multivariate logistic regression was performed with accuracy as the dependent variable.

**Results:** Of the images, 6.2% received the score "cannot decide", most of them with a high edge enhancement filter and in the crown group. A tendency for higher sensitivity (range 0.67-0.83), specificity (range 0.81-0.92) and accuracy (range 0.73-0.86) values was found in conventional and digital original images. Results of a logistic regression found that restoration type, gap size, and high enhancement and inversion filters had a statistically significant impact on accuracy ( $P < 0.05$ ).

**Conclusions:** Original non-filtered images should be used to assess teeth with metal restorations. High enhancement filters and image inversion should be avoided, especially when metal crowns are present.

*J Prosthet Dent* 2015; 113: 39-47.

## Quiz

Submitted by Dr Sheila Galvin.

**Answers** (questions on page 118)

### Photo 1

1. Geographic tongue/erythema migrans.
2. No, it is a benign variant of normal.
3. Fissured tongue.



### Photo 2

1. Depapillated tongue.
2. Haematinic deficiency (B12, folate, ferritin); anaemia (any cause); or, longstanding dry mouth (multiple causes – poorly controlled or undiagnosed diabetes, medication, Sjogren's syndrome, etc.).



**SITUATIONS WANTED**

Professional, friendly recent UCC graduate seeks Monday and/or Friday position in Kilkenny, Carlow, Waterford or South Kildare. Email dentalgrad14@gmail.com.

Dublin-based specialist orthodontist available to work in general or specialist practice from July 2015. Email orthospecialist67@gmail.com.

Experienced dentist seeks part-time/locum position in Cork City/County. Available from mid-May. Enquiries to associatecork@gmail.com.

**SITUATIONS VACANT**

Associate dentist required for a busy practice in Cavan, with a minimum of five years' experience. Initially three days per week with a view to full-time. Please forward your CV to rmccorry1@hotmail.com.

Full-time associate required for busy two-surgery practice 30 minutes from Dublin to take over from retiring principal. Would suit an enthusiastic, hardworking dentist with a longer term view. Please reply with CV to conw31@gmail.com.

Full-time associate required, Galway area. Experience is essential to be considered for interview. This is a demanding role in a private practice with a focus on patient care. Applications (cover letter and CV) to galwayjob2015@gmail.com.

Associate dentist required. Dedicated, friendly, enthusiastic, flexible, hard-working. Busy, established private practice, D15. Experience essential (>5 yrs). CV required. Email d15dentistry@gmail.com.

Galway. Experienced associate required to take over established full-time book from retiring associate in long-established award-winning practice. Contact charles@irishdentist.com.

Advertisements will only be accepted in writing via fax (01- 295 0092), letter or email (fionnuala@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than Friday, July 10, 2015, by cheque made payable to the Irish Dental Association. If a box number is required, please indicate this at the end of the ad (replies to box number X). Classified ads placed in the Journal are also published on our website www.dentist.ie for 12 weeks.

| Advert size    | Members | Non-members |
|----------------|---------|-------------|
| up to 25 words | €75     | €150        |
| 26 to 40 words | €90     | €180        |

The maximum number of words for classified ads is 40.

If the advert exceeds 40 words, then please contact:

Think Media, The Malthouse, 537 North Circular Road, Dublin 1.

Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

Please note that all classified adverts MUST come under one of the following headings:

- |                             |                    |
|-----------------------------|--------------------|
| ▶ Positions Wanted          | ▶ Positions Vacant |
| ▶ Practices for Sale/To Let | ▶ Practices Wanted |
| ▶ Equipment for Sale/To Let |                    |

Classified adverts must not be of a commercial nature. Commercial adverts can be arranged by contacting Paul O'Grady at Think Media.

Full/part-time associate required for practice in north-eastern region. Seven-surgery practice with visiting consultant orthodontist and specialist oral surgeon. Full-time hygienist and excellent support staff. Excellent opportunity to work in a long-established multidisciplinary practice. Email drcolmsmith@gmail.com.

Experienced associate required, County Galway, replacing departing excellent, caring and patient-focused associate in technologically advanced, multi-surgery practice, with great team support. CV and application letter to efficient.ethical.dentist@gmail.com.

Associate dentist required for cover in Dublin 15. Wednesdays – May 20 to September 2. Please Email leelendil@gmail.com to apply.

Experienced [min. two years] full-time associate required in multidisciplinary mixed practice, southeast region – one hour from Dublin – to replace departing colleague. Please send CV to southeastdental46@gmail.com.

Full-time associate required for busy Waterford practice. Candidate must be experienced, warm, friendly with good people skills. Modern facilities, fully computerised and excellently equipped. Candidate must have strong general private and public experience. Email waterforddentist@hotmail.com.

Ambitious, motivated associate required for state-of-the-art expanding private D4 practice. Three years' experience minimum. Candidate must have ability to practice on their own. Initially part-time with view to building a five days a week book. Long-term view preferable. Email d4dentalclinic@gmail.com.

Galway: full-time associate position available from July 2015. Experience, quality-driven, great communication skills essential. Full book, mainly private, well-equipped incl. microscope. Please send cover letter and CV to maeve@oranmoredentalcare.com.

Experienced associate required for busy two-surgery practice in the surfing beachside town of Tramore, Co. Waterford. Part-time, extending to full-time from mid July. Private, PRSI and MC. OPG, digital radiography, rotary endo, RA and glorious sea views! Email sorchawhite@hotmail.com.

Experienced, committed associate required to join award-winning multidisciplinary practice in Carlow – excellent staff and facilities – implants, oral surgery, RA, rotary, orthodontist, computerised, digital x-ray/OPG. Good people skills and excellent dentistry essential. Long-term view required. Email southeastdental46@gmail.com.

Experienced associate required for a part-time position in a busy two-surgery practice in South Dublin. Fully computerised and excellently equipped practice treating private, PRSI and MC. Starting mid June. Please email CV to laurasoshea@yahoo.co.uk.

Friendly part-time associate required, two to three days, in busy, computerised, North Dublin practice. OPG, hygienist, Medical card, PRSI, private. Email Cannydentist@yahoo.com.

Full-time associate required, Wexford. New, modern surgery. Contact rfoyle@eircom.net.

Galway – full-time associate required for busy, modern practice 30 minutes from Galway City. Please send CV to info@loughreadental.com.

Associate required for busy surgery in Limerick. Part-time initially, increasing if required. Modern computerised practice with OPG. CV to racefielddentalsurgery@gmail.com.

Associate required for busy practice, approximately 40 minutes from Cork. Minimum two days a week. Reply with CV to dentalvacancy2015@gmail.com.

Full-time associate wanted for busy mixed practice one hour from Dublin. Experience preferred. July start. CV please to dentalassociate15@gmail.com.



Associate dentist required Dublin area. Two to three days weekly, Friday and Saturday are included. Busy modern practice, Ratoath, Co. Meath. Fully computerised. Friendly, experienced staff. Great place to work! References/CV essential. Experience preferred. Start from June. Email [ratoathdental@gmail.com](mailto:ratoathdental@gmail.com).

Associate dentist required two to three days per week. Busy, modern practice with digital x-ray, 25 minutes from M50 on M1. Experience preferred. Start in June. Reply with CV to [meathdentist@gmail.com](mailto:meathdentist@gmail.com).

Associate dentist required part-time with a view to extend to full-time for busy Cork dental practice. Candidate must have at least three years' experience. Computerised practice with private and PRSI. Email CV to [info@cantydenal.ie](mailto:info@cantydenal.ie).

Friendly, experienced general dentist sought for part-time position in sw London private expanding practice, minimum five years' experience. CVs and letter to this email please: [Aoifeboland@hotmail.co.uk](mailto:Aoifeboland@hotmail.co.uk).

Exciting opportunity for a strong, enthusiastic general dentist to join our new, state-of-the-art Smiles Balbriggan practice in Co. Dublin. Full-time basis. Candidates must have strong general private and public experience and be IDC registered. Email [joanne.bonfield@smiles.co.uk](mailto:joanne.bonfield@smiles.co.uk).

Exciting opportunity for a strong, enthusiastic general dentist to join our busy, modern Smiles Swords practice in Co. Dublin. Full-time basis five days per week. Candidates must have strong general private and public experience and be IDC registered. Email: [joanne.bonfield@smiles.co.uk](mailto:joanne.bonfield@smiles.co.uk).

Busy South Dublin multi-surgery practice looking for a warm friendly dentist to join our team. Full-time position available from September. Minimum five years' experience required. Please send CV and cover letter to [info@elitedental.ie](mailto:info@elitedental.ie).

Dentist required for busy specialist practice 30 minutes from Dublin. Two days per week, immediate start. Please send CV to [behan36@hotmail.com](mailto:behan36@hotmail.com).

Exciting opportunity for a strong, enthusiastic, general dentist to join our busy Smiles O'Connell Street practice in Dublin 1. Full-time basis five days per week. Candidates must have strong general private and public experience and be IDC registered. Email [joanne.bonfield@smiles.co.uk](mailto:joanne.bonfield@smiles.co.uk).

Smiles Dental are looking for an enthusiastic, passionate dentist to join our well-established Smiles Dundalk practice. Candidates must have general private and public experience and be IDC registered. Position offered on a full-time basis. Email [joanne.bonfield@smiles.co.uk](mailto:joanne.bonfield@smiles.co.uk).

Busy multidisciplinary practice seeks GDP with 10 years' plus experience. Part-time initially, increasing if required. Modern, fully private practice in central Belfast. Please contact Adam Jaffa, Managing Partner, Tel: 028-9032 6795, or Email [adam@gdconline.co.uk](mailto:adam@gdconline.co.uk).

South-East. Experienced, enthusiastic, friendly dentist required full time. Very busy practice, full book. Modern practice, new equipment. self-employed contract/great earning potential. Immediate interview available. Email application to [southeastdentaljob@gmail.com](mailto:southeastdentaljob@gmail.com).

Dentist wanted for two weeks from June 8 to cover holiday leave. Practice is in the south east one hour from Dublin, can do three days a week if suits. Very busy mixed practice. Tel: 087-278 7053, or email [rollywoods@hotmail.com](mailto:rollywoods@hotmail.com).

Limerick. Locum dentist wanted for busy, modern, mixed practice, with excellent support staff. Full-time ideally, part-time considered, to cover maternity leave for three months, with view to long-term position. Starting July. Experience essential. For information, Tel: 087-278 1984, or Email [toomeydee@hotmail.com](mailto:toomeydee@hotmail.com).

Part-time dentist required in busy practice in Athlone. Great communication skills and minimum three years' experience necessary. Fridays, Tuesday mornings and some Saturdays available. OPG, digital x-ray, intra-oral camera, etc. Email CV to [dentalvacancy@hotmail.com](mailto:dentalvacancy@hotmail.com).

June 8-19. North Dublin single dentist general practice seeks locum dentist to cover leave. Friendly and enthusiastic is best, and must be IDC registered. Email [mbarry@meridianclinic.ie](mailto:mbarry@meridianclinic.ie).

Locum dentist required July 2015, Co. Waterford. For four to six weeks to cover parental leave. Modern, two-surgery mixed practice. Computerised, OPG, hygienist. Minimum two years' experience. Email [bridcantwelldental@gmail.com](mailto:bridcantwelldental@gmail.com).

Locum dentist required for three-month maternity leave (one hour north of Dublin), July-October 2015. Potential for permanent position. Please Tel: 083-174 0845, or send CV to [Kingscourtdentalpractice@gmail.com](mailto:Kingscourtdentalpractice@gmail.com).

We are looking for a part-time, experienced and qualified locum dentist based in Dublin with some restorative skills for an immediate start. Please Email your CV to [mala.ambwani@smartdentalcare.co.uk](mailto:mala.ambwani@smartdentalcare.co.uk).

Locum required for immediate start one to two days per week in Cork. Mixed private state-of-the-art practice. Application with CV to [Dentist4careers@gmail.com](mailto:Dentist4careers@gmail.com).

Locum dentist required for six months in busy Dublin 2 practice. Three days per week, starting mid July. Please email CV to [jobsdental2@gmail.com](mailto:jobsdental2@gmail.com).

Orthodontist required, West Cork, part-time. Existing patient list, full clinical support, digitised OPG/CEPH. Excellent opportunity for suitable applicant to work in fabulous location. Commuting a possibility. CV and references required. Email [orthoapplications479@gmail.com](mailto:orthoapplications479@gmail.com).

Enthusiastic orthodontist needed to replace departing colleague in private general dental practice, Dublin 3. In-house orthodontist since 2006. Experienced staff. Great potential. Please contact Margaret, Tel: 01-833 8985, or Email [reception@fairviewdentalclinic.ie](mailto:reception@fairviewdentalclinic.ie).

Busy Dundalk specialist orthodontic practice has a vacancy for a part-time orthodontist – [www.ortho.ie](http://www.ortho.ie). Email Hugh at [hughbradley@gmail.com](mailto:hughbradley@gmail.com).

Orthodontist required to take over existing book in a busy practice in South East. OPG/Ceph in multi-chair ortho surgery and experienced chairside assistance provided. Email: [orthodontistPosition@outlook.com](mailto:orthodontistPosition@outlook.com).

Busy South Dublin multi-surgery practice looking for a warm, friendly, qualified clinical dental technician. Full-time position available from August. Please send CV and cover letter to [info@elitedental.ie](mailto:info@elitedental.ie).

Exciting opportunity for a dental assistant in a new south Dublin practice. No experience necessary. Full training provided. Ortho, Cerec, Implants, Endo, etc. Please Email CV to [careers@deansgrangedental.ie](mailto:careers@deansgrangedental.ie).

Qualified dental nurse needed for Thursdays and one Saturday morning per month. Experience with Exact would be useful but is not essential. Dorset Dental Practice. Email: [fmokane@hotmail.com](mailto:fmokane@hotmail.com).

Northern Cross Dental is a busy, friendly, specialist dental practice that requires a motivated, enthusiastic dental nurse to join our team. Please send your CV to [mags@ncdental.ie](mailto:mags@ncdental.ie).

Part-time qualified dental nurse required for busy Southside practice – 20-25 hours per week, to include Saturdays. Tel: 01-496 7526, or Email CV to [peter@beechwooddental.ie](mailto:peter@beechwooddental.ie).

Part-time, experienced nurse required for modern, busy practice in Co. Cavan. Available Immediately. Tel: 083-174 0845, or send CV including relevant experience to [Kingscourtdentalpractice@gmail.com](mailto:Kingscourtdentalpractice@gmail.com).

Maternity cover required for dental nurse position. April/May start. Please send CV and cover letter to [reception@roseairdental.ie](mailto:reception@roseairdental.ie).

Dental nurse required for friendly and modern dental practice in Kilkenny. We require a self-motivated and enthusiastic nurse with a friendly and caring personality. Email [kilkennydentist@hotmail.com](mailto:kilkennydentist@hotmail.com).

Dental nurse required for part-time maternity cover starting in June in Mallow. Experience necessary. Tel: 086-393 4060, or Email [mallowdentist@gmail.com](mailto:mallowdentist@gmail.com).

Part-time dental nurse required for busy, modern dental practice in Navan, Co. Meath. We are looking for a highly motivated individual to join our young, professional team. Contact [don@navandental.com](mailto:don@navandental.com).

We are looking for a full-time, experienced, qualified and highly motivated dental nurse based in Dublin. Ideally, you will have had previous experience within a practice environment. Please email your CV to [mala.ambwani@smartdentalcare.co.uk](mailto:mala.ambwani@smartdentalcare.co.uk).

Full-time dental receptionist with dental nursing experience required for busy, friendly city centre private practice off St Stephens Green. Monday to Friday nine to five. Start Date: first week of May 2015. Email [reception@harcourtclinic.ie](mailto:reception@harcourtclinic.ie).

We are looking for a full-time, experienced, qualified and highly motivated dental treatment co-ordinator based in Dublin with some reception and nurse skills. Please Email your CV to [mala.ambwani@smartdentalcare.co.uk](mailto:mala.ambwani@smartdentalcare.co.uk).

We are currently looking for an experienced hygienist two days a week – Wednesday and Friday – as maternity cover. Please send your resumé to [perioprosortho@gmail.com](mailto:perioprosortho@gmail.com).

Hygienist wanted for Wednesdays in Southwest Dublin practice. Immediate start available. Please reply with CV to [info@oldbawndental.ie](mailto:info@oldbawndental.ie).

Dental hygienist required for two days per week in busy clinic in Limerick City. Newly qualified welcome. Please forward cover letter and CV by email to [no8clinic@hotmail.com](mailto:no8clinic@hotmail.com).

Practice nurse manager required full-time in Cork. Application with CV to [dentist4careers@gmail.com](mailto:dentist4careers@gmail.com).

Part-time hygienist required for maternity leave from mid April, North Co. Dublin. Covering letter and CV to [care@skerriesdental.com](mailto:care@skerriesdental.com).

Busy specialist dental practice requires a friendly, enthusiastic, motivated receptionist to join the team. Please email CV to Claire at [info@ncdental.ie](mailto:info@ncdental.ie).

### EQUIPMENT FOR SALE

Contents of dental surgery for sale in Limerick including OPG, dental chair and hand instruments. Tel: 086-812 3853.

Full dental surgery contents for sale. Preferably to sell in one lot, may sell individual items. Very good condition. Email [dentalequipsale@gmail.com](mailto:dentalequipsale@gmail.com).

### PRACTICES WANTED

Looking to buy a practice in Wexford. Please Email [wexfordpractice@gmail.com](mailto:wexfordpractice@gmail.com).

### PRACTICES FOR SALE/TO LET

Room available in city centre dental surgery to rent on a sessional basis to suit an orthodontist. Tel: 01-670 1166, or Email [info@ifscdentalcare.ie](mailto:info@ifscdentalcare.ie)

For sale. Established practice, County Fermanagh, Monaghan Border, Roslea. NHS list/private cross-border list, with potential for development. Tel: 077-2090 6005 evenings, or Email [StephenEJForster@yahoo.co.uk](mailto:StephenEJForster@yahoo.co.uk).

Long-established leasehold dental practice for sale in a busy town in the East Cork Area. Owner retiring. Large private percentage fees. Price on application. Strictly interested parties only. Email in strictest confidence to [eastcorkdentalpracticesale@yahoo.ie](mailto:eastcorkdentalpracticesale@yahoo.ie).

Ballygawley, Co. Tyrone. Premises suitable for dentist to let. Geographically an excellent location, good road network, public transport service. Private car parking. Planning permission for dentistry is pending. Secondary school with 700 pupils, primary schools with 200 pupils, two medical centres. Ongoing developments. Email [eamonnhughes1@aol.com](mailto:eamonnhughes1@aol.com).

## Dates for your diary

### JUNE

18-19 Kilkenny  
**ISDH Annual Conference: Understanding the patient's perspective**  
Stepladder to success in special care dentistry. For further details, log on to [www.isdh.ie](http://www.isdh.ie).

### SEPTEMBER

10 Alexander Hotel, Dublin 2, 7.30pm  
**Metropolitan Branch, IDA – Meeting** IDA MEMBERS ONLY  
Speakers are Drs Ciaran O'Driscoll on 'Diagnostic dilemmas', and Edward O'Reilly on 'The hopeless incisor'.

22-25 Bangkok Thailand  
**FDI 2015 Bangkok**  
For information, log on to [www.fdi2015bangkok.org](http://www.fdi2015bangkok.org).

### OCTOBER

2 Radisson Hotel, Dublin Airport, 10.00am  
**Retirement Day for dentists** IDA MEMBERS ONLY

22 Alexander Hotel, Dublin 2, 7.30pm  
**Metropolitan Branch, IDA – Meeting** IDA MEMBERS ONLY  
Speakers are Drs Naomi Rahman on 'Bleeding, surgical procedure', Andrew Norris on 'Medical emergencies', and Mary Clarke on 'Forensic dentistry'.

### NOVEMBER

6-7 Gibson Hotel, Dublin City Centre  
**Irish Dental Hygienists Association Annual Winter Scientific Conference 2015**  
For further details, log on to [www.idha.ie](http://www.idha.ie).

19 Alexander Hotel, Dublin 2, 7.30pm  
**Metropolitan Branch, IDA – Meeting** IDA MEMBERS ONLY  
Speakers are Drs Rachel Doody on 'Dentine hypersensitivity', and Rona Leith on 'Trauma Bites'.

### JANUARY 2016

28 Alexander Hotel, Dublin 2, 7.30pm  
**Metropolitan Branch, IDA – Joint Meeting with Irish Endodontic Society**



**3,383**<sup>\*</sup>  
dentists in Ireland  
get this Journal.

Nobody can compete with that.

When you're the biggest and best  
you don't have to bang on about it.

Contact **Paul O'Grady** today at  
+353 (0)1 856 1166 or  
[paul@thinkmedia.ie](mailto:paul@thinkmedia.ie)

\* Externally audited by the Audit Bureau of Circulation



# Sensodyne® with NovaMin®

Advanced technology for your  
patients with dentine hypersensitivity

## Clinically proven sensitivity relief

NovaMin® builds a hydroxyapatite-like layer over and within exposed dentine tubules,<sup>1-5</sup> **repairing your patients' dentine, to provide clinically proven sensitivity relief.\***

## Ongoing protection

The robust NovaMin® layer binds firmly to collagen in dentine<sup>3,6</sup>, and resists daily physical and chemical oral challenges,<sup>1,3,5,7,8</sup> **helping to protect against the future pain of dentine hypersensitivity.**



**Recommend Sensodyne® with NovaMin® for specialist expertise in dentine hypersensitivity care**

\*with twice daily brushing

**References:** 1. Burwell A et al. J Clin Dent 2010; 21 (Spec Iss): 66-71. 2. LaTorre G, Greenspan DC. J Clin Dent 2010; 21 (Spec Iss): 72-76. 3. West NX et al. J Clin Dent 2011; 22 (Spec Iss): 82-89. 4. Earl JS et al. J Clin Dent 2011; 22 (Spec Iss): 62-67. 5. Earl JS et al. J Clin Dent 2011; 22 (Spec Iss): 68-73. 6. Efflandt SE et al. J Mater Sci: Mater Med 2002; 13 (6): 557-565. 7. Parkinson CR & Willson RJ. J Clin Dent 2011; 22 (Spec Iss): 74-81. 8. Wang Z et al. S Dent 2010; 38: 400-410.

SENSODYNE, NOVAMIN and the rings device are registered trade marks of the GSK group of companies.