Volume 59 Number 6
December 2013/January 2014

IDA
irish dental association

Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

Mercury falling

Dental amalgam: is this the end?

MERRY CHRISTMAS

WE WISH ALL OUR IRISH DENTAL TEAMS A MERRY CHRISTMAS AND A PROSPEROUS NEW YEAR

THANK YOU FOR ALL YOUR BUSINESS DURING THE YEAR
IT HAS BEEN A VERY GOOD YEAR FOR US WORKING WITH ALL OF YOU

WE ARE OPEN FOR BUSINESS DURING THE CHRISTMAS SEASON
CALL US FOR A FREE PICKUP DOOR TO DOOR

TRY US ONCE LOVE US FOREVER

EXCELLENCE IN DENTISTRY

TEETHRUS®

Information Age Park , Suite 14 , Gort Road , Ennis , Co. Clare, Ireland
+ 353-(0)65-67-9-70-70 infoireland@teethrus.us , www.teethrus.us/irl

Published on behalf of the IDA by
Think Media, 537 NCR, Dublin 1

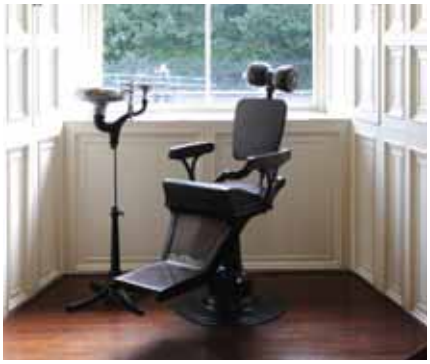
T: 01-856 1166
www.thinkmedia.ie

EDITORIAL
Ann-Marie Hardiman, Paul O'Grady

DESIGN AND LAYOUT
Tony Byrne, Tom Cullen, Ruth O'Sullivan

ADVERTISING
Paul O'Grady

DID YOU KNOW? *The Journal of the Irish Dental Association is the only dental journal produced for Irish dentists by Irish dentists.*



Irish Dental Association Unit 2 Leopardstown Office Park, Sandyford, Dublin 18.
Tel: +353 1 295 0072 Fax: +353 1 295 0092 www.dentist.ie
Follow us on Facebook (Irish Dental Association) and Twitter (IrishDentists).

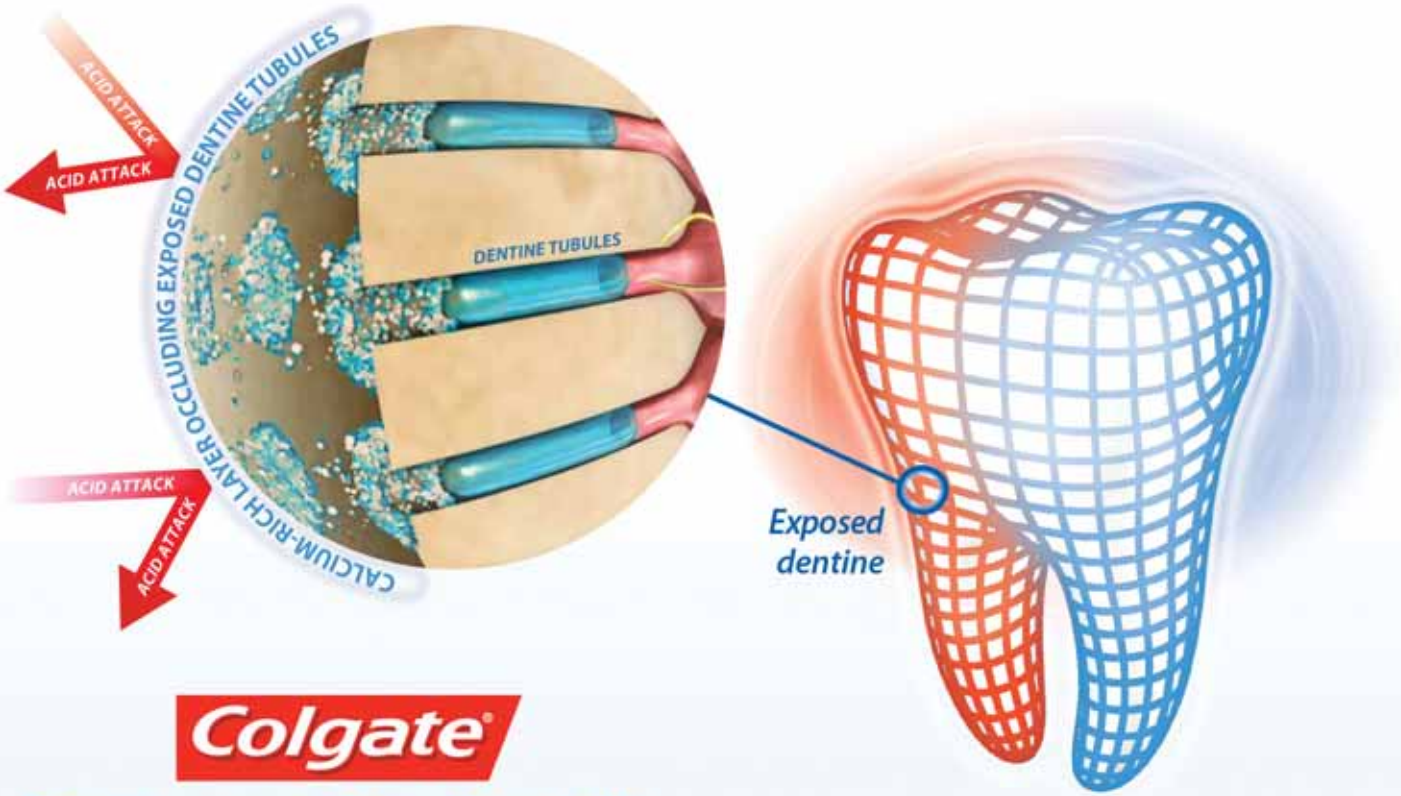
Magazines Ireland | abc

Total average net circulation 01/01/12 to 31/12/12: **3,366 copies** per issue. *Circulated to all registered dentists in the Republic of Ireland and Northern Ireland.*

CLINICALLY PROVEN

Innovative PRO-ARGIN™ TECHNOLOGY

Occludes dentine tubules



Colgate®

Sensitive Pro-Relief™ TREATMENT SYSTEM

*A **unique combination** of arginine and calcium carbonate form a calcium-rich layer penetrating and occluding open dentine tubules, providing **instant* relief** and **long lasting protection** from the pain of dentine hypersensitivity*[1,2]

*Recommend **Colgate® Sensitive Pro-Relief™ Treatment System,** you can't find more effective relief from dentine hypersensitivity*

Colgate® YOUR PARTNER IN ORAL HEALTH

* When toothpaste is directly applied to each sensitive tooth for one minute

1. Cummins D. J Clin Dent 2009; 20 (Spec Iss): 1-9. 2. Petrou I et al. J Clin Dent 2009; 20 (Spec Iss): 23-31.

www.colgateprofessional.co.uk

Progress on policy

Honorary Editor PROFESSOR LEO STASSEN welcomes progress on the formulation of an oral health policy.

Since our last edition, there have been significant developments in the area of oral health policy. The Minister of State with responsibility for Primary Care, Alex White, and the Chief Dental Officer, Dr Dympna Kavanagh, both attended and spoke at the Public Dental Surgeons Seminar of the Association in Mullingar in October. They announced that a new national oral health policy is about to be developed. This alone is of importance given that it is the 1990s since a national policy was put in place. (Curiously, a new policy was developed and, apparently, was at the point of being launched back in 2007/'08 but never saw the light of day.)

However, the signs are promising this time. In addition to announcing the development of a new oral health policy, the Minister of State said at the seminar in Mullingar that there will have to be a focused engagement by all parties on what is the best model of care to be provided to the public. In encouraging addresses, he promised public consultation on the issue while Dr Kavanagh promised that every health professional will receive a letter about the process. These are important statements that, if proven credible, will likely lead to an improved provision of oral healthcare.

A few weeks later, these claims were given credibility by the presence of both Dr Kavanagh and the Secretary General of the Department of Health, Dr Ambrose McLoughlin, at the newly formed Oral Health Forum held in the Dublin Dental University Hospital in November. While many things of significance were said at the Forum, by far the greater importance lay in the mix of professionals that attended the meeting.

Great credit is due to Professors Kearns, Kenirons and Nunn, and Association Chief Executive Fintan Hourihan, who worked hard to ensure that the Forum was staged. It proved to be timely and it looks as if there is Government, professional and commercial will to see a workable new policy put in place. All sectors will benefit but ultimately, the Irish citizen will benefit the most. There are several steps to go before we get to that point, but these first steps are encouraging. We will monitor the situation and report in the *Journal* as it progresses.

Special features

Elsewhere in this *Journal*, we have our usual mix of features, practice management and peer-reviewed scientific papers. Two special features are worthy of particular mention. In 'A strong tradition of dentistry' Professor Gerry Kearns reflects on 50 years of the Faculty of Dentistry in the Royal College of Surgeons in Ireland, but also traces dentistry at the RCSI back to the appointment of Theodore Stack as Professor of Dentistry in 1884 as the first appointment of its kind in any of the dental schools on these islands. In a remarkable look at aspects of the history of dentistry and of two families involved in dentistry in Cork before the school was established there, Professor Robin O'Sullivan presents an article entitled 'The Street of the Yellow Horse' that is both scientific and a fascinating history.

Peer-reviewed contents

Our peer-reviewed papers cover a broad set of topics in this edition. The cover story by Dr Cristina Taut looks at the concerns being expressed over dental amalgam and speculates on its future. Catherine Waldron and a group of student dental hygienists gathered data on smoking cessation at the Dublin Dental University Hospital on Mouth Cancer Awareness Day in 2012 and present their findings in this issue.

A group of British-based dental and medical professionals has provided an excellent paper on the continuing threat from odontogenic cervico-fascial infections and, in doing so, they propose a patient care pathway to be used in primary care.

Looking to 2014

On behalf of the Board of the *Journal*, I wish all our readers, authors, reviewers, advertisers and contributors a happy and healthy Christmas and a peaceful and prosperous 2014. I look forward to seeing you at Association events throughout the year, starting with the 'Gums on seats' seminar in the Convention Centre Dublin on February 1.

Prof. Leo F. A. Stassen
Honorary Editor

The honour of representing members

The great honour bestowed on every member fortunate to be appointed as President also carries a considerable workload and the last few months have shown the huge variety involved with the role.

Representing the profession

I attended the Annual Scientific Meeting of the Munster Branch in October. We are lucky to have such a dynamic team on the Munster Committee and members and the Association will be in good hands when the Presidency is assumed by Dr Anne Twomey in 2015.

Also in October, I was warmly welcomed to the IDA's Annual Seminar for HSE dental surgeons in Mullingar. I was very impressed by the event, which was attended by Minister for Primary Care Alex White, and Chief Dental Officer Dr Dympna Kavanagh. I wish to congratulate Dr Iseult Bouarroudj on her appointment as President of the Group and look forward to continued close co-operation with, and support for, our members in the HSE.

The fact that the Chief Dental Officer and the Minister chose an IDA conference to announce details of a new oral health policy was fitting recognition of the importance of securing the support of the profession.

Media-wise I have also been busy. I was interviewed by RTÉ's *Prime Time* for a feature on fluoridation and participated in a number of radio interviews on a variety of topics.

Building bridges

In advancing dentistry here in Ireland, it is so important that we build and maintain strong relationships with other national dental associations and play an active part in international representative bodies such as the CED and FDI. We have seen the benefit of close relationships with colleagues in the British Dental Association and I was honoured to attend the 90th anniversary of the Northern Ireland branch in mid November. We have developed close contact with the American Dental Association also and I was delighted to attend their Annual Conference in New Orleans. And while we have much to learn from others, I never lose sight of the great contribution Irish dentists have made abroad, and how we as an Association have something to offer sister organisations.

A new oral health coalition

November 21 marked a significant advance in promoting the cause of oral health in Ireland with the inaugural meeting of the new Oral Health Forum (see report on page 288). This initiative brought together a wide range of interests within dentistry. There was tremendous energy and a strong can-do attitude displayed by all who participated and I am convinced that this will be seen as a seminal moment in the advance of better oral healthcare. I thank all those involved in the organisation of the event, especially Prof. Jimmy Steele, our invited guests and speakers, all those who attended, and DDUH, which kindly hosted the meeting.

A proud history

'Prevention is better than cure' serves not only as our everyday clarion call but also as the title of the wonderful new centenary history of Cork University Dental School and Hospital. I commend all involved and urge readers to order a copy now – it will make a great read over Christmas.

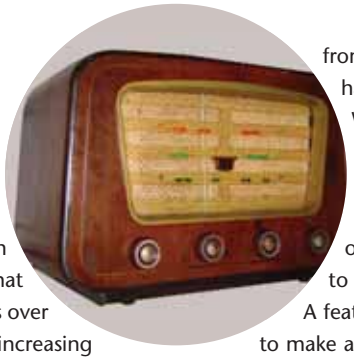
Best wishes

It is with regret that we see the departure of Clare Dowling, our valued Employment/Communications Officer. Clare has been a tremendous asset to the Association and leaves with our best wishes and the certainty of a great career ahead of her. On behalf of all our members, I wish to thank Clare for her great courtesy, professionalism and patience.

Finally, I wish you all a very Happy Christmas and a prosperous New Year. I hope to see many of you at the IDA Practice Management Seminar on Saturday February 1, which has moved venue to the Convention Centre, Dublin.

Dr Seán Malone
IDA President

Association hits the airwaves to promote dental attendance



The Association is finalising arrangements for our first ever radio advertising campaign to promote greater dental attendance, which will take place early in the New Year.

Award-winning advertising agency Cawley Nea has been working with the Association in preparing a campaign that will seek to arrest the decline in the number of dental visits over the past number of years. As members will be aware, increasing numbers of people see dental attendance as a discretionary matter, and in some cases a luxury, without fully appreciating the disastrous consequences of neglecting their oral health. In fact, a strong message will be to focus on the fact that in spite of so many people suffering from gum disease, an identical number say they are happy with the health of their teeth.

We need to educate the audience on the importance of regular dental visits as part of their overall health maintenance. But first we need to get through to our audience to awaken them out of their present state of avoidance when it comes to dental health.

A feature of the campaign will be to direct the public to make an appointment to see their dentist. Listeners will be advised to visit the find-a-dentist section of the IDA website so we would encourage all members to ensure that we have your correct practice details on our site. If you need to update details for your practice please contact dario@irishdentalassoc.ie as soon as possible.

Didier Dietschi for Kilkenny

We are delighted to announce that world-renowned presenter Dr Didier Dietschi will be giving two half-day hands-on courses on Thursday May 15 in the Lyrath Hotel, Kilkenny, as part of our Annual Conference.

In association with Optident, Dr Dietschi, who will be assisted by Dr Paddy Crotty, will give two hands-on courses on posterior composites. Described as the 'Master' of resins, Dr Dietschi will also give two lectures on Friday May 16. Dr Dietschi maintains a private practice in restorative dentistry in Geneva in Switzerland. Places are limited. Further details to follow shortly.

Metro Branch ASM

The Annual Metro Branch ASM will take place on Friday, February 7, at the Hilton Hotel, Charlemont. The day commences with a choice of hands-on courses in either endodontics with Dr Lynda Elliott or posterior composites with Professor Robbie McConnell. Lectures will take place during the afternoon in subject areas such as medical emergencies, dentures, safety statements, legal issues and treatment planning. A full trade show will also take place on the day.

Places for the hands on-courses are limited. Book today by contacting IDA House, Tel: 01-295 0072.

South Eastern Branch ASM

The Tower Hotel, Waterford, is the venue for the Annual Scientific Day for the South East Branch on February 21. A full day of educational lectures will take place and a trade show will be present. Put the date in your diary now! Further details to follow.

Postgraduate Diplomas at Dublin Dental University Hospital

The Dublin Dental University Hospital (DDUH) is inviting applications for two postgraduate diplomas.

Conscious Sedation in Dentistry

The 18-month Postgraduate Diploma in Conscious Sedation in Dentistry is aimed at primary care dental practitioners and aims to provide:

- a comprehensive education in clinical practice of conscious sedation, anxiety and pain control for patients; and,
- development of an ability to critically analyse and apply the findings of the professional literature.

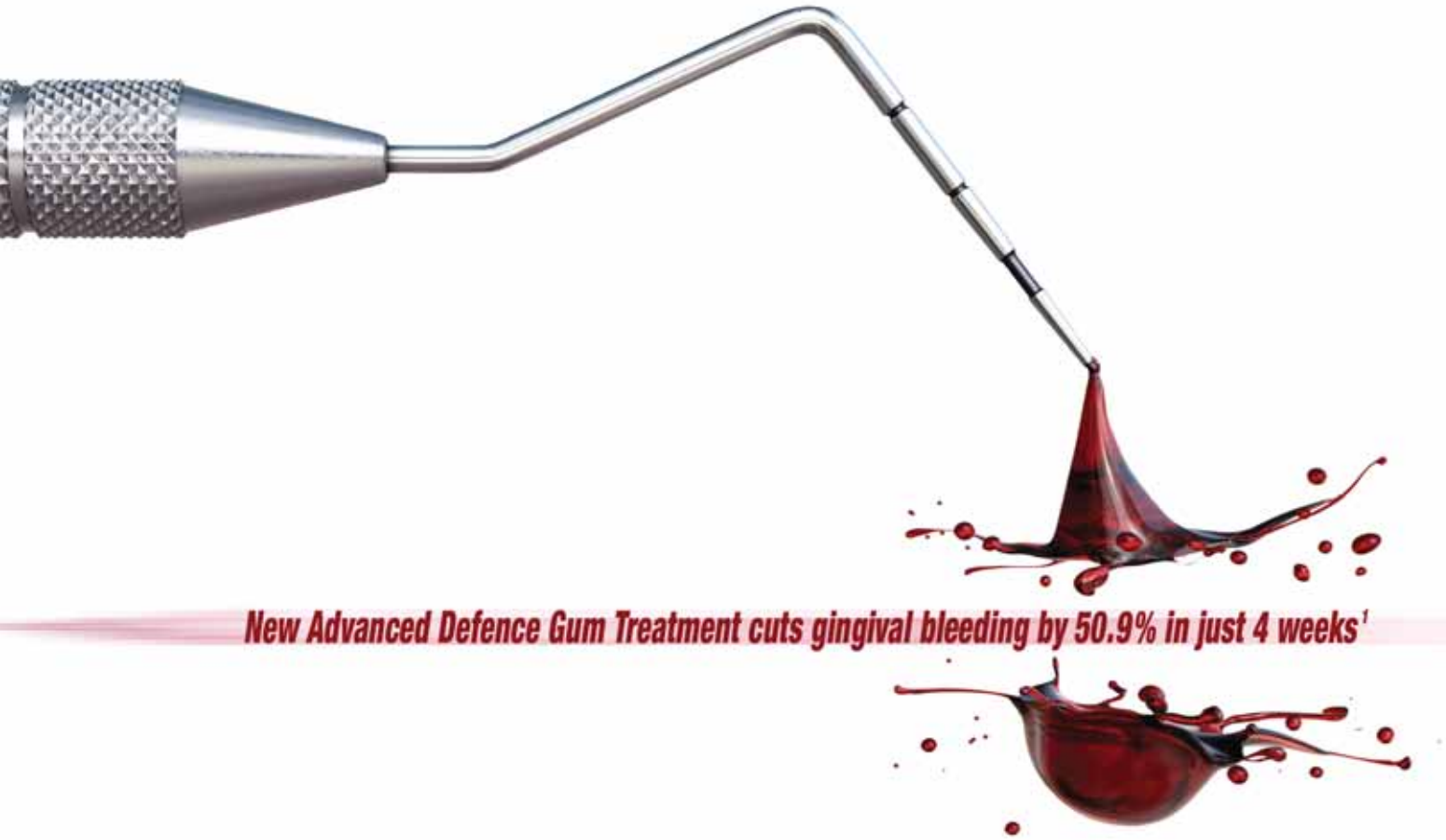
Further details may be obtained via www.dentalhospital.ie/education, or www.tcd.ie/graduatestudies.

Special Care Dentistry

The Postgraduate Diploma in Special Care Dentistry, co-ordinated by Dr Caoimhin Mac Giolla Phadraig, is an 18-month part-time course providing training in clinical special care dentistry to enable dentists to deliver primary care both safely and independently to this patient group. In addition, it aims to deliver a comprehensive education in the theoretical principles of special care dentistry and develop an ability to critically analyse professional literature. Further information is available at www.dentalschool.ie/post-graduate-diploma-in-special-care-dentistry-inviting-applications/.

Both courses commence in July 2014. Applications can only be made online by logging on to www.my.tcd.ie/courses/postgradute/. The closing date for applications is February 28, and interviews will be held in the DDUH in March 2014.

Please address any queries to Catherine Creagh, Course Administrator, Tel: 01-612 7354 between 9.30am and 1.30pm, or Email: or catherine.creagh@dental.tcd.ie.



New Advanced Defence Gum Treatment cuts gingival bleeding by 50.9% in just 4 weeks[1]

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.[1]

In addition, Advanced Defence Gum Treatment is **designed to not cause staining.**[2]

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 (LINKPLT0006)

NEC/LI/13-0240b

Advanced Defence against gum disease

Kin Dental Hygienist of the Year

Congratulations to Theresa Kelly, who won the Kin Dental Hygienist of the Year 2013. Theresa's case study, 'Patient Motivation – A Key to Success', was recognised for its high standard and strong clinical relevance.

From left: Catherine Waldron, Lecturer in Dental Hygiene; Anne Holohan, Senior Dental Hygiene Tutor; Susan Johnston, President, Irish Dental Hygienists Association; Theresa Kelly, Winner, Kin Dental Hygienist of the Year; Anne O'Keeffe, Senior Dental Hygiene Tutor; and, Diarmuid Gavin, Director, Pamex Ltd.

RCSI Scientific Meeting

From left: Dr Karel De Leeuw; Dr Leonard Kaban; Dr Jeanne Moriarty; Prof. Leo Stassen; Prof. Richard Ibbetson; and, Chair Prof. June Nunn in session at this year's RCSI Annual Scientific Meeting.

'Surgical Aspects of Dental Practice' was the theme of this year's Royal College of Surgeons in Ireland Faculty of Dentistry Annual Scientific Meeting, which took place on October 24 and 25. A distinguished line-up of speakers addressed a wide range of topics, from temporomandibular joint dysfunction to implant surgery. Friday morning's session focused on anaesthesia and sedation. Dr Leonard Kaban gave a fascinating historical overview of dentistry's role in the development of anaesthesia, followed by Dr Jeanne Moriarty, who gave an anaesthetist's perspective. Dr Karel De Leeuw offered the North American viewpoint, while Prof. Leo Stassen outlined the impressive developments in accreditation and training in Ireland in recent years. Finally, Prof. Richard Ibbetson discussed the Intercollegiate Guidelines on Dental Sedation, which are due to be published next year.

Pioneering dental researcher honoured

Denis O'Mullane, Emeritus Professor and Consultant, Oral Health Services Research Centre, Cork University Dental School & Hospital, was among a distinguished group to be honoured recently at UCC with the Alumnus Award for Voluntary Service to UCC.

Award for HSE orthodontist

From left: Guest speaker Dr David Birnie; Dr Ciara Scott; OSI President Dr Katherine Condren; and, guest speaker Dr Nigel Harradine.

HSE orthodontist Dr Ciara Scott was recently awarded the top prize at the OSI (Orthodontic Society of Ireland) Annual Scientific Meeting. At a seminar entitled 'Excellence in Orthodontics for the Specialist Practitioner', guest speakers awarded the prize for best case presentation to Dr Scott, who works at the Regional Orthodontic Unit at St Columcille's Hospital in Loughlinstown.

Quiz

Submitted by Dr Nick Armstrong.

Questions

1. Why has the Helix (steam penetration) test passed in the Type (cycle) B and not in the Type N steriliser (strip in picture on left has changed colour to black in Type B steriliser and no change in colour in Type N autoclave on right)?
2. Can the Helix test be used in all S cycle sterilisers?
3. Can an autoclave sterilise a handpiece if it cannot pass a Helix test?

Answers on page 319

DOYLE MAHON
INSURANCES

Practice Cover that's worth smiling about!

Doyle Mahon Insurances have partnered with Zurich to offer a tailored Dental Practice Insurance Scheme that offers dentists superb cover at competitive rates.

To find out more about this exclusive scheme through **Doyle Mahon Insurances**, contact **Aidan Mahon** on **053 912 3630** or email **aidan@doylemahon.ie** and discover how your practice can benefit from this tailored package.

To find out more visit www.doylemahon.ie

ZURICH®

John Says:

" Since introducing Six Month Smiles to my Practice in 2009, I've increased revenues by 40%! As a GDP, the success that I've had with Six Month Smiles has allowed me to move into a much bigger space so I can handle all the new patients. "

-Dr. John Seward • *Cork Dental*, Cork, Ireland

Six Month Smiles is a cosmetic, minimally invasive system to straighten your adult patient's teeth in about 6 months.

IT'S EASY... EFFECTIVE... AND PATIENTS WANT IT!

Become a Six Month Smiles Provider by registering for an upcoming hands-on course.

Upcoming Courses

~~11-12~~	~~Oct~~	~~Manchester, UK~~	Sold Out
22-23	Nov	London, UK	
24-15	Jan	London, UK	
★ 31-01	Jan	Dublin, Ireland	
21-22	Feb	London, UK	
14-15	Mar	Manchester, UK	

Register at:
www.SixMonthSmiles.com/Level1

Six Month Smiles Clinical Instructors

Dr. Andy Denny
Weston-super-Mare, UK

Dr. Anoop Maini
London, UK

Straight Teeth. Less Time. Clear Braces.

001 585 594 0606

SIX MONTH SMILES®
Short Term Ortho System

www.SixMonthSmiles.com

Dental complaints

A total of 89 complaints were being handled by the Dental Complaints Resolution Service in the year up to November 5, 2013, according to the Service's latest activity report. Michael Kilcoyne, who handles the complaints, generated 210 phone calls and 975 letters/emails. A further three complaints were not accepted by the service; two were anonymous, and one was outside the Service's remit. Twenty complaints were resolved fully by the Service, the majority of which were settled by a refund of fees, an explanation or apology, or re-treatment at no extra cost. Complaints in regard to fees (56) were almost twice as frequent as those related to clinical concerns (31). Where dissatisfaction was raised with treatments provided, the most frequently cited subjects of complaint related to crowns/bridges, fillings, and endodontic and orthodontic treatments. As regards complaints not relating to treatment, the most common related to costs, failure to explain treatment costs, postoperative pain and problems with continuing care.

Chairmen Professor David Harris (left) and Dr Brian O'Connell welcomed over 2,000 delegates to the 22nd EAO Annual Scientific Meeting in Dublin.

European Society for Osseointegration meets in Dublin

The impressive Convention Centre in Dublin's Docklands played host to over 2,000 delegates from 66 countries for the 22nd Annual Scientific Meeting of the European Association for Osseointegration (EAO). The meeting, which took place from October 17-19, featured a packed programme of workshops, lectures, panel discussions, competitions and poster presentations. An extensive series of satellite industry symposia organised by the conference sponsors also took place, so there was a topic to suit every area of expertise.

Areas of interest covered during the conference included 'Emerging technologies in tissue regeneration that can enhance patient care', 'Peri-implantitis – a growing problem or a manageable complication?', 'Risk factors in implantology' and 'Implants in an ageing population'. Speakers were drawn from the very highest levels of expertise worldwide to address compelling issues affecting patient care and the latest innovations and research. Panel discussions allowed further teasing out of issues, with often searching and insightful questions from the floor.

This year's Annual Scientific Meeting was jointly chaired by Irish committee members Professor David Harris and Dr Brian O'Connell, who said they were delighted and honoured to welcome so many visitors to Dublin for this prestigious event.

A strong presence from trade sponsors included a number of excellent satellite industry symposia.

Saving money on practice insurance

According to Doyle Mahon Insurances, in these challenging times it is more important than ever to ensure that you and your business have the right cover in place. Aidan Mahon says: "Many practices are paying too much for cover simply because they are over insured. Others are paying too much for the wrong type of cover, often because they continually renew the policy they have always had. Consequently, many practices are often paying far too much for their insurance for inadequate cover, the true cost of which may only come to light in the event of a claim. We recommend that practices review the sums insured to ensure that they accurately reflect the true cost of reinstatement on a like-for-like basis. Our practice schemes recently won out in a blind price comparison for the Make Me Richer section of the *Irish Independent* with Nick Webb. This tailored practice insurance policy with Aviva will cater for all dental practices at the most competitive rates without compromising on the level of cover. Feedback from customers shows average savings to be made of 30%, with up to 50% savings in some cases".

dexketoprofen trometamol

Keral®

25mg film-coated tablets

Fast and Effective Pain Relief[1]

Keral® 25 mg film-coated tablets (dexketoprofen). Prescribing Information. Please consult the Summary of Product Characteristics (SPC) for full prescribing information. **Presentation:** Tablets containing dexketoprofen trometamol 36.9mg (equivalent to dexketoprofen 25mg).
Use: Symptomatic treatment of mild to moderate pain.
Dosage: Adults: 25mg every 8 hours or 12.5mg every 4-6 hours. Maximum daily dose 75mg. Use lowest effective dose for the shortest duration necessary to control symptoms. In the elderly or those with mild-moderate hepatic dysfunction or mild renal dysfunction, initial maximum daily dose of 50mg. Not recommended for children or adolescents.
Contra-indications: Hypersensitivity to dexketoprofen, the excipients or other NSAIDs, NSAID induced attacks of asthma, bronchospasm, acute rhinitis, or nasal polyps, urticaria or angioneurotic oedema. History of or active peptic ulcer/haemorrhage, chronic dyspepsia, history of gastrointestinal bleeding or perforation related to previous NSAIDs therapy, gastrointestinal bleeding, active bleeding or bleeding disorders, Crohn's disease or ulcerative colitis, asthma, severe heart failure, moderate-severe renal dysfunction, severe hepatic dysfunction, haemorrhagic diathesis and other coagulation disorders, during the third trimester of pregnancy and lactation.
Warnings and precautions: Caution in allergic conditions. Avoid use with concomitant other NSAIDs including COX-2 selective inhibitors. Use lowest effective dose for the shortest duration necessary to control symptoms. Gastrointestinal bleeding, ulceration or perforation which can be fatal, have been reported with all NSAIDs at anytime during treatment, with or without warning symptoms or a previous history of serious gastrointestinal events. When gastrointestinal bleeding or ulceration occurs withdraw treatment. The risk of gastrointestinal bleeding, ulceration or perforation is higher with increasing NSAID doses, in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation, and in the elderly. The elderly have an increased frequency of adverse reactions to NSAIDs especially gastrointestinal bleeding and perforation which may be fatal. Commence treatment in these patients on the lowest dose available. Ensure cure of oesophagitis, gastritis and/or peptic ulcer before starting treatment. Monitor patients with history of GI disease. Special care with NSAIDs in patients with a history of gastrointestinal disease (ulcerative colitis, Crohn's disease). Consider combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors), and in patients requiring concomitant low dose aspirin, or other drugs likely to increase gastrointestinal risk. Monitor patients with a history of gastrointestinal toxicity, particularly when elderly, for unusual abdominal symptoms (especially gastrointestinal bleeding) particularly in the initial stages. Caution in patients receiving oral corticosteroids, anticoagulants, SSRIs or anti-platelet agents. Do not use with warfarin, other coumarins or heparin. Caution in haematopoietic disorders, connective tissue disorders, impairment of hepatic and/or renal functions, history of hypertension and/or heart failure, diuretic therapy, the elderly. Special caution in patients with cardiac disease, especially episodes of previous heart failure. May mask symptoms of infectious diseases. Can increase parameters of renal and hepatic function. Serious skin reactions (some of them fatal), including exfoliative dermatitis, Stevens-Johnson syndrome, and toxic epidermal necrolysis reported very rarely. Discontinue treatment at the first appearance of skin rash, mucosal lesions, or any other sign of hyperaesnitivity. Do not use in women attempting to conceive. Do not use during the first or second trimester of pregnancy unless clearly necessary. Monitor and advise patients with a history of hypertension and/or mild to moderate congestive heart failure as fluid retention and oedema have been reported. Some NSAIDs (particularly at high doses and long term treatment) may be associated with a small increased risk of arterial thrombotic events (e.g. myocardial infarction or stroke). Careful consideration before treating patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease, and/or cerebrovascular disease. Similar consideration before initiating longer-term treatment of patients with risk factors for cardiovascular disease (e.g. hypertension, hyperlipidaemia, diabetes mellitus, smoking).
Interactions: Other NSAIDs, anti-coagulants, heparins, corticosteroids, lithium, methotrexate, hydantoines and sulphonamides, diruretics, ACE inhibitors, antibacterial aminoglycosides and angiotensin II receptor antagonists, pentoxyfilline, zidovudine, sulfonylureas, beta-blockers, cyclosporin and tacrolimus, thrombolytics, anti-platelet agents and SSRIs, probenecid, cardiac glycosides, mifepristone, quinolone antibiotics.
Undesirable effects: As with other NSAIDs, the most commonly observed adverse events are gastrointestinal. Peptic ulcers, perforation or gastrointestinal bleeding, sometimes fatal, particularly in the elderly may occur. Common (1-10%): Nausea and/or vomiting, abdominal pain, diarrhoea, dyspepsia. Uncommon (0.1-1%): insomnia, anxiety, headache, dizziness, somnolence, vertigo, palpitations, flushing, gastritis, constipation, dry mouth, flatulence, rash, fatigue, pain, asthenia, rigors, malaise. Rare (0.01-0.1%) laryngeal oedema, anorexia, paraesthesia, syncope, hypertension, bradypnoea, peptic ulcer, peptic ulcer perforation, hepatitis, urticaria, acne, increased sweating, back pain, acute renal failure, polyuria, menstrual disorder, prostatic disorders, peripheral oedema, liver function test abnormal. Very rare (<0.1%) neutropenia, thrombocytopenia, anaphylactic reaction including anaphylactic shock, blurred vision, tinnitus, tachycardia, hypotension, bronchospasm, dyspnoea, pancreatitis, hepatocellular injury, Stevens Johnson syndrome, toxic epidermal necrolysis (Lyell's syndrome), angioedema, facial oedema, photosensitivity reactions, pruritus. As with other NSAIDs, the following may occur: melaena, haematemesis, ulcerative stomatitis, exacerbation of colitis and Crohn's disease, cardiac failure, aseptic meningitis haematological reactions, agranulocytosis and medullar hypoplasia. Bullous reactions. Some NSAIDs (particularly at high doses and in long term treatment) may be associated with a small increased risk of arterial thrombotic events (e.g. myocardial infarction or stroke).
Pack size: 50 tablets. **Legal category:** POM
Marketing authorisation number: PA 865/2/2
Marketing authorisation holder: Menarini International Operations Luxembourg S.A., 1 Avenue de la Gare, L-1611 Luxembourg.
Marketed by: A.Menarini Pharmaceuticals Ireland Ltd
Further information is available on request to A Menarini Pharmaceuticals Ireland Ltd, 2nd Floor, Castlecourt, Monkstown Farms, Monkstown, Co. Dublin, Ireland or may be found in the SPC.
Date of preparation: August 2011

References:
1. Barbanoj Rodriguez, M.J., et al. Expert Review of Neurotherapeutics. 2008; 8(11):1625-1640

A.MENARINI
PHARMACEUTICALS IRELAND LTD
Healthcare for Life

Date of item: June 2013
13Keral004

Keral added to the list of prescribable medicines

A. Menarini Pharmaceuticals Ireland Ltd has announced that Keral 25mg tablets (50-tablet pack) and Keral 25mg granules for oral solution (20-sachet pack) have been added to the list of prescribable medicinal products under the dental scheme. Keral tablets and Keral granules for oral solution are both indicated for the short-term symptomatic treatment of pain of mild to moderate intensity, such as dental pain and acute musculo-skeletal pain.

Keral tablets and Keral granules for oral solution contain Dexketoprofen Trometamol. Due to the solubility of the tromethamine salt in Keral there is rapid absorption that produces a greater plasma concentration of the drug in less time, which means a fast onset of action. The onset of the analgesic activity for both presentations of Keral was obtained in some studies at 30 minutes post administration. The analgesic effect persists for four to six hours. The recommended dosage is 25mg od-tid, with the total daily dose not exceeding 75mg. For full prescribing information, please refer to www.medicines.ie.

Special offer on Futurabond U

Voco has a special offer on Futurabond U until March 31.

Voco has announced a special offer to dentists on Futurabond U: buy one pack of 200 SingleDose and get a Trial Pack of 20 SingleDose for free, with a payback guarantee. This offer is available until March 31, 2014. Dentists should ask their Voco dental consultant or contact their dental dealer. According to Voco, Futurabond U is the market's only true dual-curing universal adhesive offering usage in a disposable applicator. Besides the incredibly simple handling of SingleDose, the new Futurabond U offers practitioners an outstanding range of options for application, as much with regard to indications as to selection of the etching technique (self-etch, selective-etch or total-etch) or the curing mode.

Meanwhile, the company has expanded its premises by building a new head office. The construction of a new building in 1992, as well as two extensions (1997 and 2005), has now been followed by the building of a new company HQ with integrated training centre and a modern R&D laboratory complex in Cuxhaven. The manufacturer of dental materials made this move to cater for the firm's ongoing expansion.

DeCare launches direct to consumer

New research conducted by DeCare shows that 48% of people in Ireland have not visited their dentist in the past year. This research was conducted as it launched 'Healthy Smiles' and 'TeamCare', the first range of individual and corporate dental insurance plans directly available to Irish customers from DeCare. To help raise awareness of the launch, the company recruited Ireland and Munster Rugby legend Alan Quinlan.

While the research demonstrated poor dental hygiene habits, the majority of people did recognise the significance of good dental hygiene. However, the cuts in tax relief and PRSI for dental care has led to a significant reduction in people attending the dentist, with one in four people claiming that they visit the dentist less now as a result.

For the past ten years, DeCare Dental Insurance Ireland has partnered with Vhi to provide dental insurance, with DeCare providing the product, customer service and claims management, but now, as reported in our last edition, for the first time the company is offering insurance directly to the wider general public.

The Healthy Smiles range of plans from DeCare Dental Insurance offers annual dental exams, dental cleanings, emergency treatment and significant contributions towards procedures such as fillings, extractions, root canal, dentures, crowns, inlays and onlays. The insurance also provides orthodontic benefits to cover items such as braces depending on the level of cover that is chosen. While overall numbers with health insurance cover are declining, DeCare's experience shows that there is growing interest in purchasing dental insurance, with increasing sales volumes and increased claims utilisation over the past year demonstrating more regular attendance at the dentist among the insured population.

Ireland and Munster Rugby legend Alan Quinlan with Maureen Walsh, CEO, and Dr Ger Gavin, Chief Dental Officer, DeCare Dental Insurance Ireland.

With annual prices starting at €108.60 for adults and €74.64 for children for Healthy Smiles Level 1 Plan, the insured person can instantly avail of the product by visiting their dentist for a thorough examination and clean at no cost. In addition, until February 28 children aged 18 or under can avail of a half price offer, with prices starting from €37.32 per year for Healthy Smiles Level 1.

Journal beats all opposition

Despite intense competition for advertising, the *Journal of the Irish Dental Association* remains the dominant publication for dentists in Ireland.

A survey of members of the Irish Dental Association has proved the dominance of the *Journal of the Irish Dental Association* in the Irish market for dental publications. A representative sample (175 dentists) answered several questions about dental publications and readership. The sample was demographically representative in all ways: geography, gender, age, etc.

Completely dominant in Ireland

A total of 64% chose the *Journal* as their preferred dental publication: of the other publications the next closest was *Dental Update,* which is the preference of 9%, while 7.5% prefer the *British Dental Journal*. A similar number (7.5%) chose *Irish Dentistry* while 1.5% chose *Ireland's Dental*. When excluding *Dental Update* and the *BDJ*, the *Journal* is the choice of approximately 85% of Irish dentists. This tallies with previous surveys, most notably that carried out for Omega Financial Management in November 2011. Therefore, the *Journal of the Irish Dental Association* is the overwhelming favourite of Irish dentists.

Getting the publications?

Every respondent to the survey (100%) was in receipt of every edition of the *Journal*. Only 63.8% reported receiving *Irish Dentistry*, while a mere 31.9% reported receiving *Ireland's Dental*.

Getting the message

The dominance of the *Journal* was confirmed by the question: which title do you prefer specifically for peer-reviewed articles; news; interviews/features; practice management; editorials; CPD; HR advice; social news/events; obituaries; and, classifieds? The *Journal* was the first preference of the majority of readers for every category.

Interestingly, the majority of dentists not only chose the *Journal* as the best place for peer-reviewed articles of relevance to them, but more than 50% also said that they would like to see more peer-reviewed content in the *Journal*. A whopping 90% said that they would use the *Journal* to gain verifiable CPD points for answering questions based on articles in the *Journal of the Irish Dental Association* – if that were made available.

Online vs print

The majority of readers prefer to read the *Journal* in printed format but other findings suggest that some readers would prefer to receive soft copies. We are also aware that meeting CPD demands will also require greater online access to the *Journal* and demand further innovations, which the Association is committed to deliver to help IDA members exclusively.

Message to marketing managers

Cheaper doesn't always mean good value. And promotions are not always what they seem. Awards presented to those who nominate themselves and pay for consideration hardly carry the same credibility as our own award of Ireland's Most Sensitive Dentist, which is awarded by peers on the basis of nominations received from patients themselves.

Spending valuable marketing funds on advertising in the other titles only makes sense if you reach the numbers of dentists that our *Journal* offers – and just to add the icing on this particular cake, 85% of respondents said that they actively support advertisers in the *Journal.*

The message from this survey is clear: the only meaningful publication for Irish dentists is the *Journal of the Irish Dental Association*. To those who already support the *Journal* commercially and editorially, we are very grateful. To those who are yet to advertise with us, we hope the above will close the argument.

A strong tradition of dentistry

On the 50th anniversary of the Faculty of Dentistry RCSI, Dean PROF. GERARD KEARNS takes us through the Faculty's history.

Inaugural Faculty of Dentistry Board, 1963. Front row (from left): Jack Owens; Philip Stoy; Rodney Dockrell; President Terence Millin; Adrian Cowan; Jim Keith; and, Harry O'Flanagan. Back row (from left): Unknown; Norman Butler; Unknown; Felix Cooper (Mace Bearer); Unknown; John Lee; and, Unknown.

The Faculty of Dentistry RCSI celebrates its 50th anniversary in 2013. The Faculty was established in 1963 by a group of academics and clinicians committed to "the advancement of the science, art and practice of dentistry by promoting education, study and research". These ideals have remained the mission and vision for the Faculty. The Faculty consists of approximately 2,000 Fellows, Members and Diplomates. It is one of four postgraduate faculties within the RCSI system. The Board consists of 14 elected fellows with a Dean, Vice Dean and Officers of the Board. The Faculty is housed in RCSI House overlooking St Stephen's Green.

Beginnings

There has always been a strong tradition of dentistry at the RCSI dating to the establishment of the position of Professor of Dentistry at the College in 1884, the first appointment of its kind in any of the dental schools in Britain and Ireland. The first Chair was Professor Theodore Stack, and in his letter of acceptance, he indicated that it was his intention to establish a school that would be worthy of the reputation that Dublin had established over many years as a centre of excellence in medical education.

Professor Stack was a remarkable man. He was born in Omagh, Co. Tyrone, in 1849, and graduated in medicine from Trinity College Dublin in 1873. By the age of 29 he had been awarded the postgraduate qualifications of MD and MCh. He also held an FRCSI and was a graduate in dentistry (DMD) from Harvard Dental School in Boston. Stack returned to Ireland in 1884 at the age of 35 to take up the position of Professor of Dentistry at the RCSI, and remained in that position until 1897. During this time he was one of the founders of the Dublin Dental Hospital, served as president of the British Dental Association and, in 1895, was one of the founders of the Odontoblasts Club at the Dental Hospital. He was succeeded as Professor of Dentistry by Professor HG Sherlock, who served until 1925.

The undergraduate years

Undergraduate dental education continued uninterrupted at the RCSI from 1884 to 1977. In 1977, as part of a process of rationalisation of dental undergraduate education in Ireland, the three Dental Schools of Trinity College Dublin, University College Dublin and the RCSI were amalgamated in Trinity College, and the final intake of dental students at the RCSI was in 1975.

There have been numerous highly respected RCSI dental graduates over the years, but probably two of the most renowned are Edward Leo Sheridan and Fergal Nally. The Faculty of Dentistry has named lectures to acknowledge their outstanding contribution. Edward Sheridan was born in Co Mayo in 1881, and graduated from RCSI Dental School in 1902. He subsequently attended medical school at the RCSI and obtained the FRCSI in 1908. Sheridan was a respected teacher in the Dental Hospital and served for many years as a senior staff member. He is distinguished as being the only practising dentist to be elected President of the RCSI. He also held the position of President of the Dental Board of the United Kingdom (the forerunner of the General Dental Council). The prestigious Sheridan Lecture is held in the Faculty

The year of celebration has been marked by a number of academic events in the College:

Prof. Mark Ferguson, Chair of Science Foundation Ireland; and, Prof. Gerard J. Kearns, Dean, Faculty of Dentistry, RCSI, at the Fergal Nally Lecture.

- The Fergal Nally Lecture – April 25
- The BAOMS/RCSI Faculty of Dentistry Meeting – July 10-12
- The Faculty of Dentistry Annual Scientific Meeting – October 24-25
- Fifty Years of the Faculty of Dentistry: Thirty Years of Implant Dentistry in Ireland – December 13

of Dentistry on alternate years; the invited lecturer presents on a topic of their choice as part of the Annual Scientific Meeting.

Fergal Nally was born in September 1935, qualified in both dentistry and medicine from the RCSI, and was a Consultant in Oral Medicine at the Eastman Dental Hospital in London. Dr Nally is the true embodiment of the Renaissance man. A gifted clinician, researcher and teacher, he is also a sportsman, musician, author and artist of the highest reputation. The Fergal Nally lecture has been delivered on alternate years since 2003 when Dr Nally was the inaugural lecturer. The Nally lecture theme is not necessarily related to dentistry and previous lecturers have included Brendan Kennelly and Tim Severin.

Establishment of the Faculty

The Faculty of Dentistry was established in 1963 by representatives from the RCSI, Trinity College, Queen's University Belfast and University Colleges Dublin, Cork and Galway. The focused work of the steering committee resulted in the inauguration ceremony of the Faculty on November 16, 1963. The first Dean was Professor Rodney Dockrell, Professor of Orthodontics at Trinity College Dublin, and the inaugural Vice Dean was Dr Adrian Cowan, who became the second Dean. Dr Cowan was the first Irishman to take the FDS RCS England by examination. His son Dr Peter Cowan became the thirteenth Dean in 2001, a unique occurrence in the dental faculties in the United Kingdom and Ireland.

Dr John Lee served as Honorary Treasurer on the first Faculty Board. Dr Lee was a graduate in both dentistry and medicine from the RCSI, and was a greatly loved and respected teacher, clinician and gentleman. He was one of life's "contributors": to the Irish Dental Association and the Dental Council of Ireland, and with his wonderful histories of the dental profession and the Irish Dental Association. Much of the information in this brief history has been accessed from Dr Lee's *Evolution of a Profession and of its Dental School in Dublin*.

The basis of the development of the Faculty of Dentistry RCSI was to establish a postgraduate body in dentistry, which would promote dentistry at the highest possible level, acting as a continuum to the work of the undergraduate dental schools and universities. The requirement to maintain standards not only in general postgraduate training in dentistry, but also in the specialist postgraduate disciplines, was recognised.

Academic standards and specialisations

During the 1960s and beyond in the UK and Ireland the Fellowship in Dental Surgery (FDS) was considered the standard bearer of achievement in postgraduate studies and training in dentistry. The FDS remains one of the highest postgraduate achievements in clinical dentistry. The requirements for eligibility for the general Fellowship at that time were to be three years post graduation and one year in a recognised hospital post. These requirements for Fellowship have been replaced in recent years with the structured and rigorous requirements for the Intercollegiate Fellowship (Exit) Examinations.

The Faculty of Dentistry from the outset believed in the importance of specialisation in dentistry, and established Specialist Fellowships. The Fellowships are designated FFD RCSI (Fellow of the Faculty of Dentistry RCSI). The original specialty Fellowship was in Oral Surgery (now designated Oral Surgery with Oral Medicine). The move to establishing specialty fellowships set the RCSI apart from the Colleges in London, Edinburgh and Glasgow, attracting large numbers of overseas and home-based candidates. The Faculty obtained a reputation for rigorous and fair examinations and courteous examiners, and this reputation has been maintained over many years.

At the present time, ten Specialist Fellowships are offered by the Faculty: Oral Surgery, Oral Surgery with Oral Medicine, Oral Medicine, Orthodontics, Paediatric Dentistry, Prosthodontics, Endodontics, Periodontics, Operative and Restorative Dentistry, and Dental Public Health. Each of these Fellowships requires the MFD (Membership of the Faculty of Dentistry) or equivalent and three years' full-time training in recognised posts and programmes.

Currently, the Faculty's largest number of candidates present for the MFDRCSI exam (Membership of the Faculty of Dentistry). The MFD marks the end point of a two-year cycle of general professional training, and has essentially replaced the FDS as an entry point to specialist training in Ireland. The examination attracts approximately 500 candidates per year and is offered in many centres worldwide, including New York, Jordan, Bahrain, Sudan and the UAE. The MGDS Examination (Membership in General Dental Surgery) was established in the late 1980s by the then Dean, Dr Leo Heslin. This qualification denotes a level of excellence in general dental practice, and those holding this exam can progress to FGDS (Fellow in General Dental Surgery).

New developments

This year marked the establishment of the Diploma in Primary Care Dentistry, the first diet of which was held in October. This examination was developed through a unique and fruitful collaboration between the Irish Dental Association (IDA), the Irish Faculty of Primary Dental Care (IFPDC) and the Faculty of Dentistry RCSI. Successful completion of the exam allows exemption from Part I of the MFD, and is expected to provide the first step to lifelong postgraduate learning.

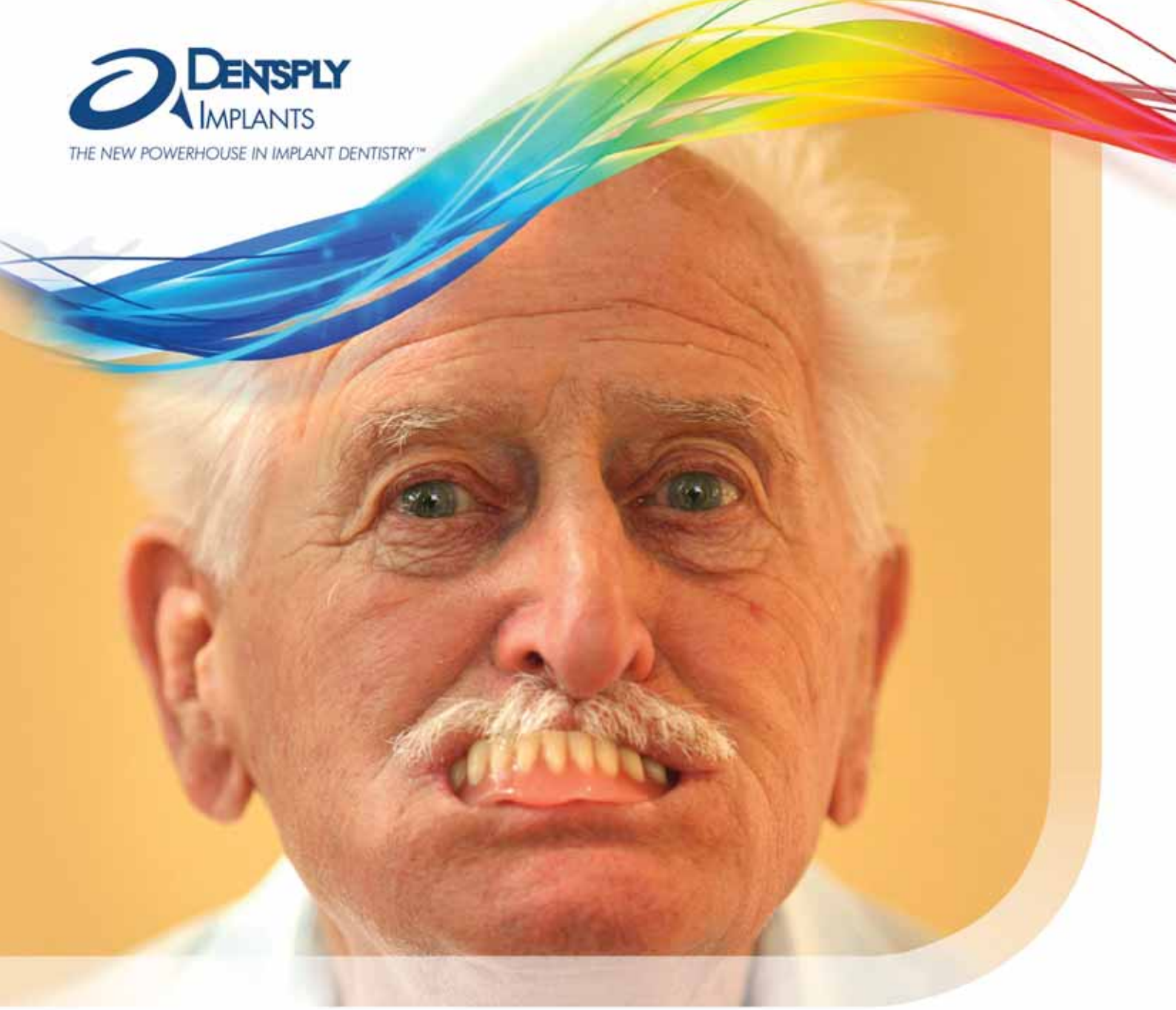
The Faculty of Dentistry enjoys excellent collaboration and interaction with sister Colleges in London, Edinburgh and Glasgow through the Intercollegiate Examining Boards, the Joint Committee of the Dental Faculties and the Joint Committee for Post Graduate Training in Dentistry. In Ireland the Faculty works closely with the Dental University Schools and Hospitals in Dublin and Cork, and also with the Dental Council in the area of postgraduate education in dentistry through the ICSTD (Irish Committee for Specialist Training in Dentistry), which was established in 2001.

As the 50th anniversary year draws to a close, it remains for me to acknowledge the members of the first Faculty Board, who had the vision to commence a process that remains active and vibrant today. Many are no longer with us but their legacy remains.

It has been my personal pleasure to serve the Faculty as Dean during this Anniversary year and I wish to acknowledge the outstanding work of the Faculty Board and Committees, not only in the recent years, but also dating to the inaugural board in 1963.

DENTSPLY IMPLANTS

THE NEW POWERHOUSE IN IMPLANT DENTISTRY™



No Teeth? No Problem!

Provide beautiful smiles and confident oral function for patients who have lost their natural teeth.

Practice Development Partnerships

- GDP referral and restoration
- Clinical education and training
- Patient marketing support

The widest choice of implant-supported restorations for treating edentulous patients and full arch clearances. Proven implant systems, backed by decades of clinical studies and practice worldwide.

- Same day teeth or delayed loading
- Fixed and removable prostheses
- Full arch bridges and overdentures
- Denture stabilisation
- CAD/CAM suprastructures

Interested?

T: +44 (0)845 450 0586
E: implants.uk@dentsply.com
www.dentsplyimplants.ie

ANKYLOS® ASTRA TECH IMPLANT SYSTEM XiVE® ATLANTIS ISUS™ courses4implants.com dentists4implants.com

Formulating a vision for oral health

The Oral Health Forum, a coalition of stakeholders in oral healthcare in Ireland, met for the first time in the Dublin Dental University Hospital on November 21.

ABOVE FROM LEFT: Oral Health Forum steering committee members Prof. June Nunn, Dean of the Dublin Dental University Hospital; IDA CEO Fintan Hourihan; Prof. Martin Kinirons, Dean of the Cork University Dental School and Hospital; and, Prof. Gerry Kearns, Dean of the Faculty of Dentistry, RCSI.

LEFT: Chief Dental Officer Dr Dympna Kavanagh; Dr Eamon Croke, who chaired the workshop; and Dr Ambrose McLoughlin, Secretary General of the Department of Health and Chairman of the Board of the HSE.

At a workshop in the Dublin Dental University Hospital on November 21, the National Oral Health Forum began the process of formulating a vision for oral health in Ireland that takes into account the views of all parties, and that can be presented as a consensus statement to Government. Taking part in the seminar were representatives from the Irish Dental Association, the Dublin and Cork Dental Schools, the RCSI Faculty of Dentistry, the HSE, dental hygienists, dental nurses, dental technicians, consumers, the indemnity providers and the dental trade.

The Chairperson for the day was general dental practitioner Dr Eamon Croke, who welcomed participants, and outlined the aims for the day: "We are here to try and reach consensus on national oral health policy."

In the first address of the day, Dr Ambrose McLoughlin, Secretary General of the Department of Health and Chairman of the Board of the HSE, told participants that the importance of this workshop lay in working to put oral health and oral health services at the heart of Government policy. He outlined the Department's plans for health service reform in line with the Future Health policy.

"Oral health must be a central [part of that process]. We seek active, direct collaboration on implementation from all stakeholders. We're going to do something about oral health."

He asked the participants to think about where oral health is now – "the good things and the challenges" – and plan for the next three years. He highlighted issues such as manpower, education, and the role of the dental hospitals. He said that the current cost base, both in the public and private sectors, is unsustainable, and there is a need to look at who provides these services. He also said that dentistry could

The National Oral Health Forum

The National Oral Health Forum was organised jointly by the Association and the dental schools in Cork and Dublin, with the RCSI faculty of dentistry. In 2010, a group of senior members of the dental profession were invited to contribute to a forum to advocate, in a more balanced way than had on occasions been the case in the past, on behalf of the dental profession in Ireland. The initial group comprised the Deans of the Dublin Dental University Hospital and the Cork University Dental School and Hospital, the Dean of the Faculty of Dentistry in the Royal College of Surgeons in Ireland, the President of the Irish Dental Association and the (then) Interim Lead for Oral Health in the HSE (until July 2013). The group has met and considered a number of oral/dental matters of national importance. It has made representations on topics such as the need to appoint a Chief Dental Officer, the role of vocational training and, most recently, as the Steering Group for the National Oral Health Forum to consider stakeholder views on a vision for oral/dental health and care in Ireland.

Drs Peter Gannon and Jane Renehan.

Peter Morris, Morris Dental; and, Pat Bolger, Henry Schein.

have a critical role to play in areas of general health such as tobacco control and obesity. He finished by emphasising that the priority at all times must be the patient. He looked forward to hearing the proposed solutions, and assured participants that the Ministers and Department officials would listen to all proposals.

Chief Dental Officer Dr Dympna Kavanagh also addressed the workshop. She also set oral health in the context of a national policy aiming to "support and enable the population to achieve good health". Oral health is seen as separate from general health, and this can be positive, for example the regulation standards set by the Dental Council, but dental health has to integrate with general health in a more cohesive way. She also emphasised the importance of tailoring policy to give the public what they want, and ultimately to create a service that is patient friendly. This is in keeping with the three pillars of Future Health.

Professor Jimmy Steele, Dean and Professor of Dentistry at the University of Newcastle Upon Tyne, and author of an independent review of dental services in England (the Steele Report, 2009), was an extremely able facilitator for the day's events. In his opening remarks, he reminded participants that there could be no change without collaboration between all stakeholders, and that this might mean some discomfort along the way. He said that this event was about taking account of all of the different agendas in the room to establish some broad principles around the question: What should the dental service in Ireland look like? Once broad agreement could be reached on the priorities and aims, then work would continue at a later date to confirm the details.

Dr Jacinta McLoughlin, Dublin Dental University Hospital; Dr Garry Heavey, general dental practitioner; and, Professor Jimmy Steele, University of Newcastle Upon Tyne.

During the day, participants heard from a number of speakers on various aspects of dental services and oral health in Ireland. After each session, participants discussed the issues raised and reported back to the group with feedback and recommendations.

Dr Jacinta McLoughlin, Senior Lecturer in Public Dental Health, Dublin Dental University Hospital, asked a series of questions based on oral health statistics about what the public's priorities are in relation to oral health. She also looked briefly at the role of the HSE, and the dental schools, and how dental health professionals can and should advocate for oral health. Dr Garry Heavey, a general dental practitioner in Dublin, looked at the possible roles for the dental team in primary dental care, and asked participants to think about the possible role of the general dental practitioner as a hub for patients, to ensure continuity of care. He also discussed education pathways for the dental team, in particular vocational/foundation training and CPD.

The final speaker of the day was Professor Ciaran O'Neill, Dean of the College of Business, Public Policy and Law in the J.E. Cairnes School of Business and Economics at NUI Galway. Prof. O'Neill presented information from other jurisdictions on how and to whom government-funded dental care is allocated to demonstrate that there is a wide variety of models of care, and Ireland can learn from these to decide which system of funding best suits us, taking economic and social care considerations into account.

Feedback from the day was extremely positive, and the participants felt that consensus can be reached on a large number of issues. A document will now be prepared that will be presented to officials in the Department of Health and Children, and to the ministers, to begin a process of collaboration on how best to provide oral health to the Irish population in the future.

The Street of the Yellow Horse

PROFESSOR ROBIN O'SULLIVAN presents aspects of dental history and some reminiscences about two dental families who lived in Cork before the Dental School was established there.

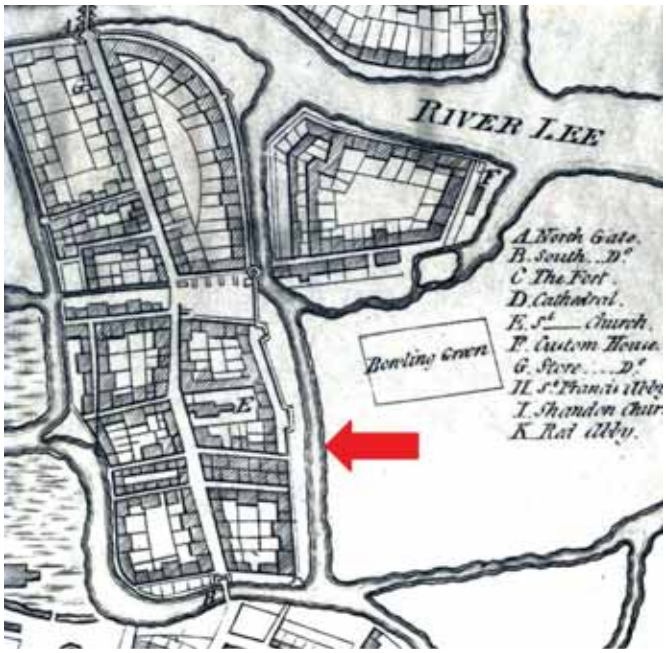


FIGURE 1: A map of Cork City at the close of the 17th century, courtesy of Cork City Libraries (www.corkpastandpresent.ie). A red arrow indicates the channel of the River Lee that would be replaced by the Grand Parade.

FIGURE 2: Commemorative bust of Pierre Fauchard in the grounds of the chateau of Grand Mesnil.

Introduction

Beginning in the early 18th century, dentistry entered into what would become a long period of steady progress. Various innovations gradually brought improvements in all areas of practice, not least the ability to fabricate satisfactory removable dentures at an affordable price, which transformed the quality of life for the edentulous. Over the same period, in Cork City the street known as the Grand Parade or, in Irish, Sráid an Chapaill Bhuí, was reclaimed from a riverbed and developed as a major commercial centre. The first listing of dentists in Cork commercial directories occurred in 1846. It included one practitioner based in the Grand Parade, and from that date onwards there have always been dentists working in that street. Towards the end of the 19th century an immigrant Jewish dentist, Abraham Goldfoot, and his family settled in Cork and opened a practice on the Grand Parade. Several anecdotes relating to him and his first apprentice, Thomas Hill, have survived from those days and are related here.

Following the siege of Cork in 1690 during the Williamite Wars, the City Fathers removed the old medieval defensive walls and Cork expanded with pioneering enthusiasm from its old heartland around the North and South Main Streets into the surrounding marshlands. By the early 18th century some notable quayside development had taken place on both sides of a channel of the River Lee that flowed immediately to the east of the walled city, where the Grand Parade is now situated (**Figure 1**). The 18th century was also a time when dentistry was rapidly evolving. Basic techniques in oral surgery, orthodontics, periodontology, conservative dentistry and endodontics were established. Numerous textbooks were published, none more influential than the first edition of Pierre Fauchard's *Le Chirugien Dentiste,* which appeared in 1728 and which, more than anything else, transformed dentistry into a profession founded on scientific principles, incorporating careful diagnosis, sophisticated clinical skills and, most critical of all, the free sharing of information between practitioners.[1] Fauchard (**Figure 2**) was deservedly successful as a dentist, eventually coming to live in the chateau of Grand Mesnil

FIGURE 3: The chateau of Grand Mesnil in Bures-sur-Yvette.

FIGURE 4: A box of beeswax for taking impressions, c. 1945.

FIGURE 5: A set of 'Waterloo Teeth', courtesy of the Royal College of Surgeons of England (© Hunterian Museum at the Royal College of Surgeons).

(**Figure 3**) in the pleasant little town of Bures-sur-Yvette some miles to the south of Paris.

In the same year that Fauchard died, 1761, the Corporation of Cork commissioned a statue of the then King, George II, by the Dutch sculptor Van Nost. The statue was cast in an iron foundry in Kift's Lane, a small laneway that lies opposite the former Beamish & Crawford brewery in South Main Street. The casting was successful and the statue was erected in the centre of Tuckey's Bridge. That bridge crossed the aforementioned channel of the River Lee where the Berwick Fountain now stands, linking Tuckey Street on the one side with what was then known as George's Street, subsequently Old George's Street, and now Oliver Plunkett Street, on the other.

The problem of dentures

Steady progress was made during the remainder of the 18th century in all branches of dentistry but foremost by far among the challenges facing dentists was the technical difficulty of making satisfactory dentures. There were three obstacles to be overcome. In 1756 the dentist to Frederick the Great of Prussia, Philipp Pfaff, went a long way towards resolving the first of these when he described how he used wax to make impressions of the mouth and cast the models in plaster.[2] Pfaff occupies a similar position in the German dental tradition to that of Fauchard in the French tradition, and we return to France to see the introduction of impression trays in 1820. These made possible the use of plaster as an alternative impression material, which was first tried in the United States some 20 years later.

Beeswax was very popular for taking impressions[3] and it remained available down to about 1950 (**Figure 4**). One noteworthy improvement was a modified wax developed by the London dentist Charles Stent in 1857 and known to this day as Stent's Composition. His name is also linked with that widely-used medical device called a stent.[4]

Having resolved the problem of impressions, the second difficulty was the nature of the teeth to be used. Experiments with porcelain in France led to the manufacture of individual teeth and entire dentures made of porcelain. The initial results were unsatisfactory and extracted human teeth remained the popular option for much of the 19th century. The most plentiful supply of teeth came from the dead in wars: Waterloo teeth from 1815, sold in sets like the one illustrated in **Figure 5**, were much prized – as were teeth from the Crimean War in the 1850s and from the American Civil War in the 1860s. That was the last great harvest of natural teeth, and as those stocks dwindled they were increasingly replaced by porcelain teeth, referred to as 'mineral teeth', whose quality had been steadily improving.

Figure 6 shows a well-made denture from the middle of the 19th century. The teeth are a mixture of natural human teeth and hand-carved ivory teeth. The denture base was also carved from a block of ivory. To make it, the model would have been painted with an ink made of a mixture of soot and oil, and the ivory block was pressed against it. The inked areas of the block were removed and the process was repeated until the fitting surface matched the contours of the model.[2] It took between three and six weeks of painstaking work to shape the base in that manner.

The problem of the denture base was thus the third and final obstacle to the making of satisfactory dentures. A porcelain base was very hygienic but the unpredictable shrinkage of that material when it was fired meant that the resulting denture rarely fitted the mouth for which it was constructed. Gold or silver plates could be pressed between a copper die and a lead counter die but ivory, the dentine of the tusks of elephants and walruses, was the material of choice, with bone being sometimes used as a cheaper alternative. Dentures were expensive and only the relatively wealthy members of society could afford them. Moreover, they were uncomfortable to a degree unimaginable today, and many became foul after a period of use.[5]

Breakthrough

The latex resin of the rubber tree hardened by sulphur and heat in a process appropriately called vulcanisation was introduced in 1851 by

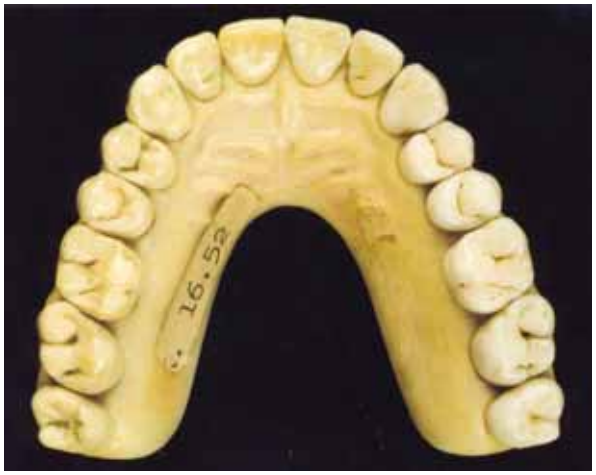


FIGURE 6: A mid-19th century ivory denture, courtesy of the Royal College of Surgeons of England (© Hunterian Museum at the Royal College of Surgeons).

FIGURE 7: A box of vulcanite sheets.

FIGURE 8: A clamp used in the making of vulcanite dentures, c. 1890.

an American chemist called Charles Goodyear.[6] Its application to the problem of constructing satisfactory dentures was quickly recognised. It took the world by storm. The cost of dentures rapidly came down to a level where they were affordable by the middle classes, and their use became relatively widespread.

A progressive dentist of those days, using vulcanite, would first model the denture in wax, and flask it much as we would do today for an acrylic denture. Vulcanite was available in sheets (**Figure 7**) and sufficient was packed into the flask to form the base. The two halves of the flask were pressed together in a heavy clamp (**Figure 8**), and fastened securely. The vulcanite was cured in a vessel called a vulcaniser containing pressurised steam at a temperature of about 160° Celsius. During this process the plaster deteriorated to the extent that it was subsequently very easy to deflask the denture. But there was a downside: the only way one knew that the safety valve on the vulcaniser was not working properly was when the device exploded, the brittle metal casing fragmenting, and causing injuries and sometimes death to those who worked in the vicinity.

FIGURE 9: The equestrian statue of George II at the southern end of the Grand Parade c. 1860, courtesy of Cork City Libraries (www.corkpastandpresent.ie).

Dentistry in Cork

Dentists were listed as a distinct group in 1846 for the first time in the commercial directories for Cork, when eight were named, all members of local families.[7] They included one named Edward Hudson whose practice was located on the Grand Parade. From that time onwards there have always been dental practices on that street. About 40 years later the dental community in Cork was enriched by the arrival of the first Jewish dentist to work in the city. Like most of Ireland's Jewish immigrants in that period, he was born in Lithuania, which had been absorbed into the Russian Empire in the 18th century by the Empress Catherine the Great. She ascended the throne in the year after the statue of George II was placed in the centre of Tuckey's Bridge. During Catherine's reign the old channel of the Lee had been gradually covered over and the new street became the Grand Parade. In those days Lithuania had a large Jewish community amounting to about 12% of the total population. The political changes coincided with a series of pogroms against the Jews throughout the entire region. Life became sufficiently difficult for one family in the city of Telse that they emigrated, landing in Dublin in the early 1860s: Samson Goldfuss with his wife Sarah Rebecca and their three sons. On arriving in Ireland they changed their surname to Goldfoot.

The statue of George II had been moved to the South Mall end of the new Grand Parade in 1798. It had been painted a warm golden yellow colour some years earlier, which gave the Grand Parade its Irish name: *Sráid an Chapaill Bhuí*, the Street of the Yellow Horse. The statue subsequently deteriorated and suffered much from vandalism. About the year that Samson and Sarah Rebecca Goldfuss arrived in Dublin, and shortly after the photograph reproduced in **Figure 9** was taken, the statue was toppled from its plinth and the Corporation took the decision to remove the entire structure.

FIGURE 10: Modern signage outside a dental practice in Bergen, Norway.

Two of the Goldfoot sons became dentists. One of those, Abraham, who had been born in Telse around 1850, married his cousin Bella and moved to Cork, where they lived at 13 Grand Parade. Abraham and Bella had three sons and a daughter. Two of their sons, George and Jacob (Jack), were also dentists. We do not know where Abraham trained as a dentist; it may have been in Dublin, or possibly in south Wales where he had a number of relatives. But there is no doubt that when he settled as the first Jewish dentist to work in Cork he was accepted by the citizens as a skilful practitioner, competent in fixed and removable prosthodontics.

Abraham

The 1870s was a time of unprecedented change. It began with the Franco-Prussian War and ended with the Zulu War. The telephone, the phonograph and the electric lightbulb were invented. Queen Victoria became Empress of India. The unification of Germany and that of Italy were consolidated. The foot-driven dental engine for cutting cavities and a fully adjustable dental chair were manufactured during this time; both were inventions of JB Morrison, an American dentist who had worked in Paris and London. In Cork the decade began with the Singer Sewing Company establishing a presence on the corner of the Grand Parade and Great George's Street, now called Washington Street. The building gave the name 'Singer's Corner' to that street junction. Anecdotal evidence suggests that Abraham Goldfoot opened his dental practice on the first floor of that building in the mid 1880s. The practice flourished and shortly afterwards he took on an apprentice. But before that he acquired a nickname.

He became known throughout Cork as Kippy Goldfoot. Why he was so called is entirely a matter of speculation. I think it is unlikely that the citizens of Cork would have been sufficiently familiar with Hebrew to have derived his nickname from *Yom Kippur*, the Jewish New Year, or *Kippa*, the Jewish skull-cap, but if they did those are the two closest terms they might have considered. However, neither of them suggests the terminal 'eee' sound of Kippy. I think we can rule out English words like 'Kipper' for the same reason. That leaves the Irish language, which was widely known in Cork at the time, and my personal choice would be *Cipín,* which means a small stick such as a match, a piece of kindling or a dibber used in gardening. How this might relate to Kippy Goldfoot I leave to your imagination. The possibilities are numerous. Perhaps he carried a distinctive and peculiarly thin walking stick that attracted the attention of local wits!

Kippy and Tommy

Kippy's first apprentice was Thomas Hill, familiarly known as Tommy. At the end of an apprenticeship lasting some five to seven years, a trainee sometimes made a career choice: either to spend all or by far the greater proportion of his time in the surgery, or in the workshop. The latter group were called dental mechanics. Neither choice entitled the practitioner to attach any letters after his name; recognition and respect were earned, not conferred. Later came dentists from the new national dental hospital in Dublin bearing Licentiates in Dental Surgery issued by the Royal College of Surgeons. A professional hierarchy developed in which the LDS men looked down on the apprentice boys. Kippy, who had moved his workplace and his residence to 42 Grand Parade, responded to this challenge by reconstituting the practice initially as the American Dental Association and then as the Anglo-American Dental Company, with himself as Secretary.[7] Three other practices did likewise, adopting suitably impressive titles. The arrival of BDS graduates some years later added a new top layer to the hierarchy, and those with an LDS were pushed into second place. That hierarchy was based more on social snobbery than any major differences in their clinical training: the textbooks used by three apprentice dentists in Cork have survived and to judge by their quality and well-thumbed appearance it is difficult to accept that an apprentice would have been much inferior to an undergraduate student of the period.

After completing his training, Tommy subsequently stayed on and worked with Kippy for nearly 20 years before opening his own practice. It is a measure of the quality of the practice that the Jewish Kippy and the Protestant Tommy were much in demand by the local convents. They went on such house calls in a pony and trap. Kippy had a thick Eastern European accent and in matters of hydration much preferred the grain to the grape. Times were hard and preferences of that nature were as common among dentists as they were among the public at large, and it was a tradition that Tommy himself would uphold in due course. While the allegation of alcoholism has often been levelled against many practitioners of that generation, it should more accurately be described as a great fondness for drink, and not the uncontrolled addiction that distinguishes the true alcoholic from the enthusiastic amateur. On one unfortunate visit to the South Presentation Convent, Kippy as the senior man was shown into the parlour and given a glass and a bottle of whiskey while Tommy treated the nuns. The clinical session lasted longer than usual and when it was finally over, Tommy was ushered into the parlour followed by the Reverend Mother who stopped and stared in silent disapproval at the contented Kippy and the empty bottle beside him. Slowly it dawned on him that there was something amiss. He rose unsteadily to his feet and pointed a wavering finger at Tommy as he uttered the memorable explanation, "Reverend Mutter... Reverend

Mutter! It voss not I vot drank de vishkey. It voss... it voss... dat big Christian bastard over dere!" From then on, Tommy attended the nuns on his own.

In time there came a parting of the ways. It was due to a number of factors, but one event played a critical role in determining the timing of the split. It happened like this. Despite his religious affiliation, Kippy enjoyed pork. On most afternoons a small saucepan of illicit pork stew could be found simmering on a gas ring at the back of the workshop. Following a heated argument, the details of which have been forgotten, Tommy emptied a small bowl of extracted teeth into the saucepan, where they sank to the bottom to be found only after most of the stew had been consumed. Understandably, Tommy then set up his own practice in rented rooms on the other side of the Grand Parade. The quarrel was later resolved and the two men renewed their friendship. Tommy subsequently relocated his practice to 7 Parliament Street.

Tommy married a Dublin lady and they had five children. Their second daughter, Evelyn, married Denis O'Sullivan, who was trained as a dentist by Tommy, as were Evelyn's two brothers, Bertie and Robin. By then Tommy had moved his practice again, to 42 King Street, which is now MacCurtain Street. His two sons worked with him in that practice and some years after his death in 1918 they joined their brother-in-law Denis in his practice at 17 Dunbar Street.

Beware falling objects!

Signs depicting a hanging molar tooth like the modern Norwegian example illustrated in **Figure 10** were frequently used in Ireland to indicate a dental premises. When Tommy moved his practice to Parliament Street he decided that a large wooden denture would be a more impressive form of advertisement than a single tooth swinging in the breeze. For some years all went well but one evening during a ferocious gale the wooden denture became detached from its moorings and struck the head of a passing pedestrian. The unfortunate man was removed, badly injured and unconscious, to the nearby South Infirmary where he remained in a critical condition for several weeks. But he made a good recovery and was pronounced fit for discharge. His first port of call was Tommy's practice, where he apologised profusely for breaking the sign, and for being unable to convey the apology any earlier due to his enforced stay in hospital. For his part, Tommy accepted the apology and with sincere concern reassured the distressed man that he didn't hold him in any way responsible for the damage done to the wooden denture. It was a different world in those days!

I end this essay with a plea. The French writer Jean-Baptiste Karr once remarked that the more a thing changes, the more it remains the same – except that he said it more beautifully, in French. It is true, but only partly so. Many things do change and change permanently, and they generally change more quickly than we imagine. What is past is past and the past is also our heritage. This paper describes a few dental incidents that have been handed down by word of mouth and are here related in print for the first time. In our collective memories there must be a large number of such little vignettes of dental relevance from bygone days that are worthy of being recorded because they illustrate what daily life was like for practitioners in former times. If they are not published, sooner or later they will be lost forever and future generations will be all the poorer for our failure.

Prof. Robin O'Sullivan BDS MB BCh BAO MSc PhD FFDRCSI FDSRCSEng, is Professor of Anatomy and Chairman of the Department of Basic Medical Sciences, RCSI – Bahrain.

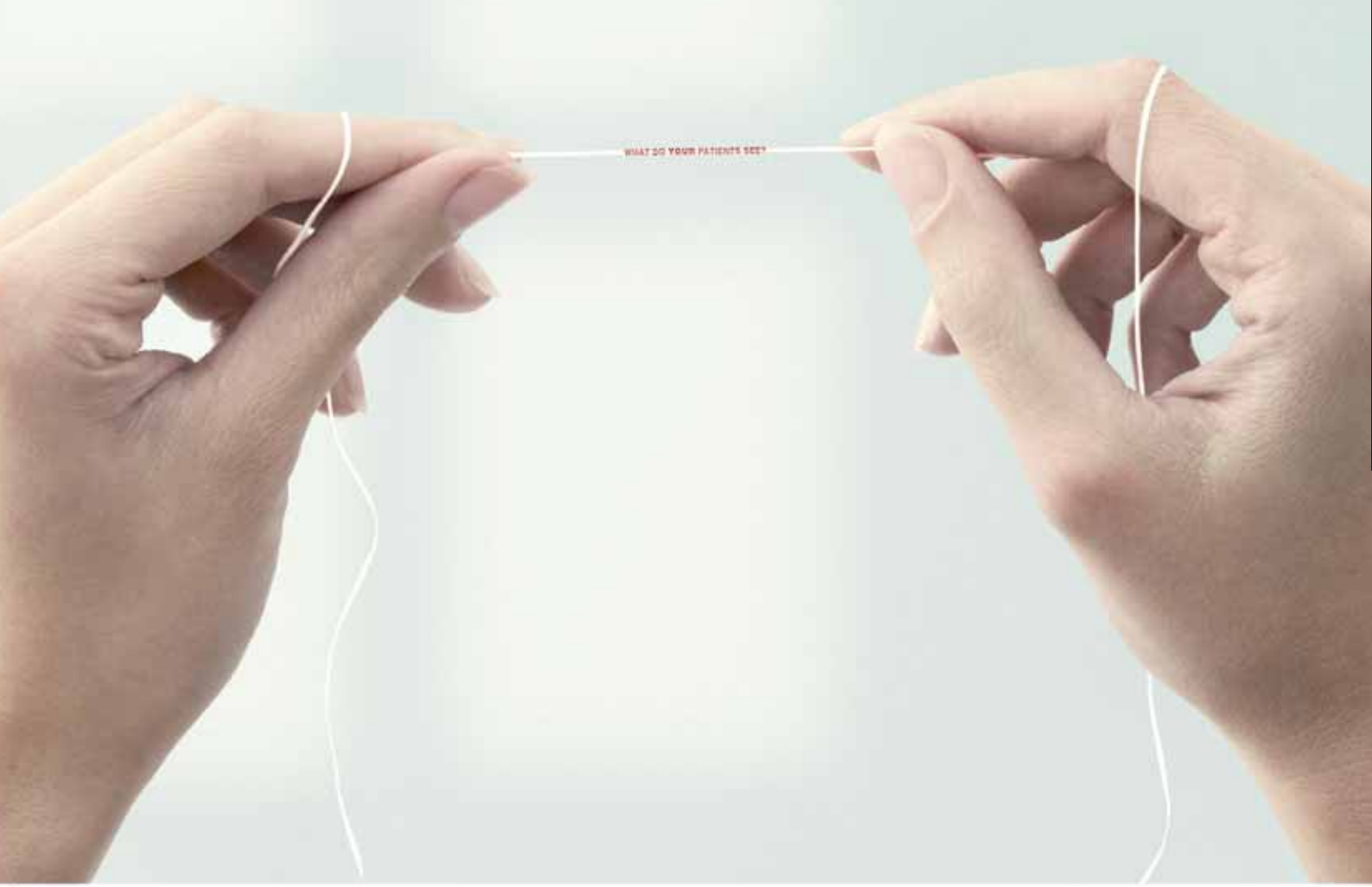
References

1. **Lynch, C.D., O'Sullivan, V.R., McGillycuddy, C.T.** Pierre Fauchard: the father of modern dentistry. *Br Dental J* 2006; 201: 779-781.
2. **Hoffmann-Axthelm, W.** *History of Dentistry*. Chicago; Quintessence Publishing Company, 1981: 222-232, 263.
3. **Menzies Campbell, J.** *Dentistry Then and Now (3rd ed.).* Glasgow: privately printed; 1981: 160, 248.
4. **Ring, M.E.** The story of Dr Charles Stent. *J Hist Dent* 2001; 49: 77-80.
5. **Woodforde, J.** *The Strange Story of False Teeth*. London; Routledge & Kegan Paul Ltd, 1968: 51-58.
6. **Slack, C.** *Noble Obsession: Charles Goodyear, Thomas Hancock, and the Race to Unlock the Greatest Industrial Secret of the 19th Century*. New York; Hyperion Books, 2003.
7. Commercial directories for Cork are available from: http://www.archivecdbooks.ie/acatalog/Cork.html and http://www.corkpastandpresent.ie/places/streetandtradedirectories/.

A book you can get your teeth into

From left: Dr John Borgonovo; Deputy Lord Mayor Cllr Lorraine Kingston; Prof. Martin Kinirons; Minister Kathleen Lynch TD; Mr Tim Holland; Prof. Emeritus Denis O'Mullane; and, Prof. John Higgins.

Monday November 25 saw the launch of a book that many will want to get their teeth into. *Prevention is better than cure: History of the Cork Dental School and Hospital, 1913-2013* was launched by Minister Kathleen Lynch TD at the College. Authors John Borgonovo, Denis O'Mullane and Tim Holland have captured the essence of the story, and created a book that will be appreciated by those inside and beyond the dental profession and will also particularly appeal to those interested in UCC or Cork history.



54% OF ADULTS HAVE GINGIVAL BLEEDING.[1]

NEW COLGATE® TOTAL® PRO GUM HEALTH TOOTHPASTE IS MEDICALLY LICENSED TO **"IMPROVE GINGIVAL HEALTH AND REDUCE THE PROGRESSION OF PERIODONTITIS".**

Recommend an evidence-based toothpaste as part of your treatment and maintenance of your patients' periodontal health.

Colgate *YOUR PARTNER IN ORAL HEALTH*

www.colgateprofessional.co.uk

Name of the medicinal product: Colgate TOTAL Pro Gum Health Toothpaste. **Active ingredients:** Triclosan 0.30% w/w, Sodium Fluoride 0.32% w/w (1450ppm F). **Indications:** To reduce dental caries, to improve gingival health and to reduce the progression of periodontitis. **Dosage and administration:** Apply a 1 cm line of paste across the head of a toothbrush and brush the teeth thoroughly for one minute twice daily. Spit out after use. Children under 7, use a pea-sized amount for supervised brushing to minimise swallowing. If using fluoride supplements, consult your Dentist. **Contraindications:** None known. **Special warnings and precautions for use:** Children under 7, use a pea-sized amount for supervised brushing to minimise swallowing. If using fluoride supplements, consult your Dentist. **Undesirable effects:** None known. **Marketing authorisation number:** PL00049/0036. **Marketing authorisation holder:** Colgate-Palmolive (U.K.) Ltd. Guildford Business Park, Middleton Road, Guildford, Surrey, GU2 8JZ. **Recommended retail price:** £3.49 (75ml tube). **Date of revision of text:** October 2011.

1 Adult Dental Health Survey 2009, NHS Information Centre for Health and Social Care.

Odontogenic cervico-fascial infections: a continuing threat

Hannah Cottom BDS(Hons) MJDF
Senior House Officer
Department of Oral & Maxillofacial Surgery
Northampton General Hospital
Northampton, NN1 5BD, UK

James R Gallagher BDS FDSRCS FFDRCSI MB BS MRCS(Eng) FRCS(OMFS)
Consultant Oral & Maxillofacial Surgeon
Department of Oral & Maxillofacial Surgery
Northampton General Hospital
Northampton, NN1 5BD, UK

Daljit K Dhariwal
BDS FDSRCS MB BCh FRCS FRCS(OMFS)
Consultant Oral & Maxillofacial Surgeon
Department of Oral & Maxillofacial Surgery
John Radcliffe Hospital
Oxford, OX3 9DU, UK

M Abu-Serriah
BDS(Hons) MBChB FDSRCPS (Glasg) MRCS (Glasg) MSc(MedSci)(Hons) PhD
Specialist Registrar
Department of Oral & Maxillofacial Surgery
John Radcliffe Hospital
Oxford, OX3 9DU, UK

Corresponding author:
M Abu-Serriah
Department of Oral & Maxillofacial Surgery
John Radcliffe Hospital
Oxford OX3 9DU
United Kingdom
E-mail: m.abuserriah@gmail.com

Précis

Dental abscesses can evolve to cervico-fascial infections with potentially life-threatening complications. General dental practitioners (GDPs) have a crucial role, as they are often the first point of contact for patients. Close monitoring and re-evaluation of the patient is essential. The paper highlights such severe complications and offers an optimal patient care pathway that can be used in primary care.

Abstract

Statement of the problem: Dental abscesses are common and occasionally can progress to life-threatening cervico-fascial infections. Despite medical advances, odontogenic cervico-fascial infections (OCFIs) continue to be a threat. The potential seriousness of odontogenic infections (OIs), or dental abscesses, is frequently underestimated. General dental practitioners (GDPs) in primary care face the challenging decision of whether to refer patients to secondary care or to manage them in the community.
Purpose of the review: This paper reviews the relevant aspects of OIs that might be helpful to primary care dental practitioners in providing a better understanding of the anatomy and pathology and aims to assist in clinical decision.
Method: An up-to-date review of literature on OCFIs, highlighting their potential risks with clinical examples.
Results and conclusion: Dental abscesses are common and continue to be a major cause for emergency hospital admission to oral and maxillofacial surgery departments. They occasionally spread to fascial spaces of the neck, potentially posing significant morbidity and mortality. GDPs are usually the first point of contact and face the challenge of recognising those at risk of developing OCFIs, which are potentially life threatening and require urgent referral for hospital treatment. We propose a patient care pathway to be used in primary care.

Journal of the Irish Dental Association 2013; 59 (6): 301-307.

Introduction

Cervico-fascial infection is a rapidly progressive infective process that involves the fascial spaces of the face, neck and thorax. These are predominantly bacterial infections and have the potential to cause serious morbidity and even mortality. Dental decay and infections involving the tooth periodontium are a common cause of cervico-fascial infections. Cervico-fascial infections due to dental pathology are called odontogenic cervico-fascial infections (OCFIs).

Oral and maxillofacial surgery departments recognise that the potential of OCFIs to cause life threatening complications, significant morbidity and mortality is frequently underestimated by healthcare professionals, including dentists. It has been postulated that the spread of odontogenic infections (OIs) accounts for as many as 57% of cervico-fascial infections[1] and that between 2000 and 2005 there was an increase in the number of hospital admissions and prolonged hospital stay due to OCFIs.[2,3]

The aim of this paper is to review the relevant aspects of OCFIs, which may allow better understanding of these infections. We also propose an optimal care pathway for patient management in the community.

Anatomical considerations

The appreciation and understanding of anatomical relationships of the neck fascial spaces is essential for accurate patient assessment, and the provision of appropriate medical and surgical management.

The fascial layers of the neck are complex, but are generally divided into superficial and deep layers. The superficial layer is poorly defined and extends upwards to the face, continuing as the superficial musculo-aponeurotic system layer.

The deep layer of the cervical fascia is further subdivided into outer, middle and deep layers. The outer layer attaches to the clavicle and medially forms the floor of the submandibular space. Just deep to the sternomastoid muscle, it forms the lateral wall of the carotid sheath.[3]

The middle layer splits into muscular and visceral parts. The muscular part extends from the hyoid bone down to the sternum, clavicle and the scapulae. The visceral portion surrounds the thyroid gland, pharynx, larynx, trachea and oesophagus. Below the hyoid bone, the visceral fascia continues inferiorly to fuse with the pericardium, and above this continues with the posterior pharyngeal wall as the buccopharyngeal fascia, forming the anterior wall of the retropharyngeal space. The middle layer of the deep cervical fascia forms the anterior and medial walls of the carotid sheath.[3]

Finally, the deep layer of the deep cervical fascia splits into an anterior layer called the alar fascia and a posterior layer called the prevertebral fascia. The alar fascia forms the posterior wall of the retropharyngeal space, extending from the skull base to the second thoracic vertebral body. Between the alar fascia and the prevertebral fascia is the 'danger space', which extends from the skull base to the posterior mediastinum ending at the level of the diaphragm. Posterior to the prevertebral fascia, and anterior to the vertebral bodies, is the prevertebral space extending from the skull base to the coccyx. The deep layer of the deep cervical fascia forms the posterior wall of the carotid sheath.

Aetiology and mechanism of spread

The vast majority of OIs remain localised to the adjacent alveolar bone of the affected jaw; however, occasionally the infections may erode through the bone and spread along the fascial spaces of the neck, transforming from a localised dental infection to OCFIs.

The path of spread of OIs and the associated inflammatory process is determined by the exit point of infection from the alveolar process of the maxilla and the mandible, and its relationship to muscle attachments and nearby fascial spaces of the face, neck and thorax.

Fascial spaces are potential planes of low resistance that are distributed between the fascial layers comprising of loose areolar tissue. In healthy individuals these potential spaces are empty, but in the presence of infection they become engorged with inflammatory exudates and pus, resulting in compression of adjacent vital structures such as the airway and major blood vessels, and posing a serious threat to life. The inflammatory exudates and pus can further erode through blood vessels or surrounding fascial layers spreading distantly into the blood stream, or to the pleural spaces and pericardial sac.[4]

The principal teeth implicated in OCFIs are the mandibular molars, with dental caries followed by pericoronitis as the predominant dental pathologies responsible.[5] The close relationship of mandibular teeth to nearby muscle attachments dictates the path of spread of infection to a particular fascial space(s),[6] which in turn have nearby proximity to the airway, carotid sheath, skull base and the mediastinum.

These low resistance fascial spaces of the head and neck permit rapid and free movement of infection to more distant anatomical sites with risks including airway compromise, systemic sepsis, bleeding or thrombus formation.

Epidemiology

OCFIs are often associated with considerable morbidity and potential mortality. These infections continue to remain a challenge to primary and secondary healthcare professionals. Before the widespread use of antibiotics, 70% of cervico-fascial space infections were caused by spread from tonsillar and pharyngeal infections. Today, tonsillitis remains the most common aetiology in children, followed by dental sources. In adults, almost 50% of cervico-fascial infections have a dental origin,[7,8] and the course of these infections can be unpredictable.

Delays in patient presentation to the appropriate healthcare professionals, diagnosis and commencement of appropriate treatment are the main causes of OIs progressing to OCFIs with risk of lethal complications. Serious potential complications of OCFIs are listed in **Table 1**, and have been associated with up to a 40% mortality rate.[9,10] Although OCFIs are less frequent today compared to in the past, the last decade has seen an increase in more serious OCFIs, which may in part be attributed to a greater emergence of antibiotic resistance.

The actual incidence of severe OCFI is poorly documented, but one Australian study reported an incidence in Melbourne of 34 cases per million per year, and postulated that serious, life-threatening OIs are on the rise.[2] There are no European figures on the incidence of OCFIs,

Table 1: Potential complications of cervico-fascial infections.[4-6]

Complication	Mechanism
Spreading cellulitis	Localised or diffuse bacterial infection resulting in severe inflammation of the dermal and subcutaneous layers of the skin
Airway obstruction and respiratory arrest	Compression of the airway by inflammatory exudates
Necrotising fasciitis	Rapidly progressing bacterial infection of the soft tissue resulting in destruction of subcutaneous fat and fascia
Mediastinitis	Direct spread from retropharyngeal space infection
Aspiration pneumonia	Inhalation of purulent discharge
Pleural effusion	Erosion of the parietal layer of the pleural cavity
Internal jugular vein thrombosis	The encasement of the vein with the inflammatory exudates
Carotid artery rupture	Due to erosion of the arterial wall
Sepsis	Due to septicaemia and systemic spread of inflammatory mediators and bacterial toxins.
Osteomyelitis of the vertebra, mandible or skull base	Due to local spread of infection
Neurologic deficits	Due to involvement of cranial nerves
Death	Due to multi-organ failure, fulminate sepsis or cardio respiratory arrest

but geographical differences are likely to influence incidence due to variations in oral health and access to oral health services.

Microbiology

OCFIs are caused by mixed aerobes, facultative anaerobes and strict anaerobes.[9] These bacterial species constitute, in part, elements of the normal oral flora. The most frequent microorganisms isolated in OCFIs are the viridans *Streptococcus* group (including the *Streptococci milleri*), *Prevotella,* and *Peptostreptococci.*[5,11] *Staphylococcus aureus* species are also common. *Fusobacterium nucleatum*, *Bacteroides melaninogenicus*, *Bacteroides oralis*, *Spirochaeta, Klebsiella* and *Neisseria* species are additionally often found together in various combinations.

Gram-negative species in particular, *K. pneumoniae,* have been isolated in greater proportions in OCFIs affecting diabetic patients.[12] The impaired macrophage function in the altered hyperglycaemic state present in diabetic patients is thought to permit greater virulence of *Klebsiella* species.[3,13] Gram-negative antibiotic cover such as gentamycin is therefore highly recommended, taking renal function into consideration.[12]

The literature has also suggested an increasing rate of resistance to penicillin.[14,15] One study demonstrated that isolated oral viridans *Streptococcus group* had an 87% sensitivity rate to penicillin, with only 27% of oral *Staphylococci* found to be sensitive to penicillin.[16]

What antimicrobial agent to use?

Due to the increasing prevalence of β-lactamase production by isolated oral pathogens, antimicrobial treatment in conjunction with a β-lactamase inhibitor (e.g., amoxicillin with clavulanic acid) or a β-lactamase-resistant antibiotic (meropenem) is advocated. Furthermore due to the presence of anaerobic species, which have been reported to be isolated in greater proportions in severe OCFIs, the addition of metronidazole to amoxicillin is recommended for optimal empiric coverage.[12,17] As co-amoxyclav is active against most anaerobic oral pathogens, the addition of metronidazole to this particular antibiotic treatment is not normally required. In patients allergic to penicillin, clindamycin should be considered the drug of choice. The use of clindamycin offers greater therapeutic benefit in comparison to penicillin and *The Sanford Guide to Antimicrobial Therapy* has replaced penicillin with clindamycin as the first-line drug when treating OIs. This is owing to its broader spectrum of activity and additional effectiveness against anaerobic species.[18]

Management

Successful and effective management of patients with OCFIs involves prevention by maintenance of good oral and dental health, prompt appropriate referral, early diagnosis and aggressive immediate medical and early surgical intervention. If an OI is suspected clinically, then we recommend that a general dental practitioner (GDP) should administer oral amoxicillin 500mg with metronidazole 400mg and chlorhexidine gluconate 0.2% oral rinse every eight hours. They should also treat the cause and establish drainage, if possible. The patient should then be reviewed and monitored closely, preferably on a daily basis, to ensure that the OI has not progressed to an OCFI. The patient should be clearly advised that if the pain and the swelling worsen, then they need to return to their dentist or attend the nearest accident and emergency department.

If admission to a hospital is required and OCFI is suspected, then broad-spectrum parenteral antimicrobial therapy should be administered without delay, and frequent monitoring of the airway and vital signs is essential. In cases of airway compromise intubation or urgent tracheostomy with surgical decompression of all the involved fascial spaces might be necessary,[10] and the source of the infection must be identified and eliminated. Therefore, in cases of OCFIs the offending tooth must be treated or removed. When appropriate, CT or MRI are considered to be the preferred imaging

Table 2: Vital parameters on admission.

Parameter	Value	
	Case 1	Case 2
Respiratory rate	45 breaths/min	30 breaths/min
Pulse	164 beats/min	160 beats/min
Systolic blood pressure	190mmHg	130mmHg
Temperature	37.8°C	37.8°C
White cell count	6.6 x10^9/L	7.6 x10^9/L
C- reactive protein	216mg/L	>160mg/L
Haemoglobin	9.2g/dL	12g/dL
Glucose	6.1mmol/L	8.9mmol/L

modalities in visualising the involved tissue spaces, identifying complications and guiding the surgical management.

Clinical examples

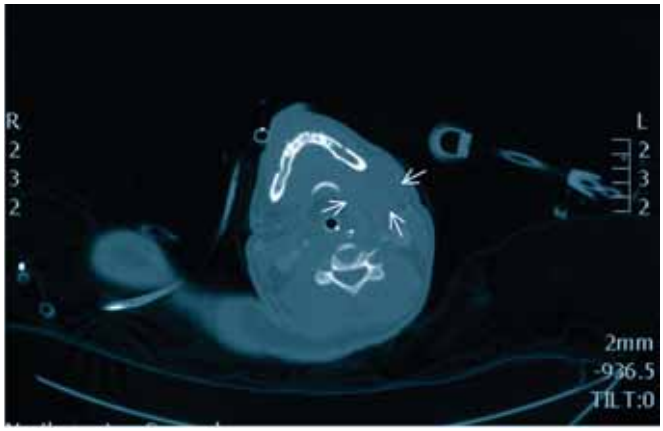
We present two cases of severe OCFIs that presented to A&E departments of two district general hospitals, illustrating the potential threat these infections can pose.

Case 1

A 29-year-old healthy male initially presented to his general medical practitioner with left submandibular swelling and dysphagia. He was given a course of oral amoxicillin for a suspected 'dental abscess' and sent home. Forty-eight hours later, he became acutely unwell with an enlarging left-sided neck swelling, onset of odynophagia and pyrexia. Two hours prior to his presentation at A&E, the patient had become unable to swallow his saliva and lost his voice. Clinical examination showed signs of respiratory distress, bilateral widespread coarse crepitations and bronchial breathing over the right chest. The vital parameters on admission are summarised in **Table 2**.

Maxillofacial examination of the head and neck revealed trismus of 15mm and a firm left submandibular swelling measuring 4cm in diameter, contiguous with a diffuse swelling of the left neck. The overlying skin appeared hot, indurated and erythematous. The patient underwent emergency oro-tracheal intubation using flexible nasoscopy. Intra-oral examination revealed extensive soft tissue swelling of the left floor of the mouth with no obvious dental pathology except for a partially erupted lower left third molar.

CT scan imaging showed right lung consolidation and a large right pleural effusion (**Figure 1**). Gas pockets were also noted within the subcutaneous tissues of the left neck extending superiorly to the left infra-temporal fossa, the left submandibular space, carotid sheath and inferiorly to the mediastinum, resulting in mediastinal emphysema. There were no pus collections identified in the head and neck region.



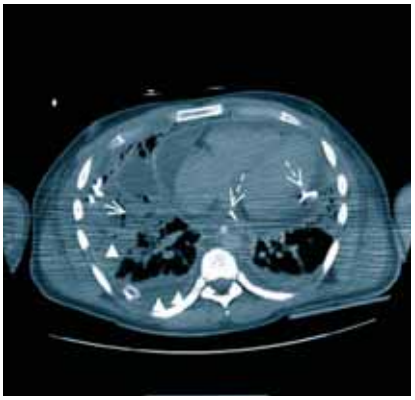


FIGURE 1 (above): A: Axial CT scan showing large left parapharyngeal space abscess (arrows). B (left): Axial CT showing large collection in the pericardial sac with a catheter drain inserted into the pericardial cavity for drainage (dashed arrows), pleural effusion (arrow heads) and areas of consolidation (solid arrow).

A provisional diagnosis of a cervico-fascial infection of unknown origin was made. Intravenous fluids, parentral co-amoxiclav 1.2g and metronidazole 500mg were commenced immediately. A right chest drain was inserted and a total of 1.5 litres of purulent effusion was aspirated. Microbiological testing of the fluid was positive for *Streptococcal milleri*, drug resistant *Klebsiella* and *Pseudomonas* species. Therefore, the antibiotic regime was altered to meropenem (2g, eight hourly) and the metronidazole was continued.

While in intensive care, the patient remained tachycardic with episodes of paroxysmal fast atrial fibrillation, which were treated with an amiodarone infusion. Furthermore he continued to have spikes of temperature and tachypnoea, developing abdominal distension with a progressive fall in haemoglobin (7.6g/dl). The patient therefore underwent transfusion and a repeat CT scan of the face, neck, chest and abdomen. The scan revealed multiple interconnected abscesses within the left submandibular, sublingual, submasseteric and parapharyngeal spaces in continuity with the superior mediastinum. There was an increase in the size of the left-sided pleural collection with gaseous distension of the colon suggestive of paralytic ileus.

Due to the lack of clinical progress and worsening of the contralateral pleural effusion a left chest drain was placed, which produced free-flowing serosanguious fluid. Tracheostomy, followed by the removal of the partially erupted lower left third permanent molar, and

decompression of the left lateral pharyngeal, submasseteric, submandibular and buccal spaces was performed with insertion of two large extra-oral and one intra-oral corrugated drains. Discrete communication between the socket of the lower third molar and floor of the mouth was detected through the lingual cortex. The patient eventually recovered after 12 days in Intensive care and was discharged from the hospital three weeks after his admission.

Case 2

A 22-year-old healthy male attended the accident and emergency department complaining of fever, vomiting, abdominal pain and neck swelling. He gave a one week history of toothache and facial swelling with which he had presented to his general practitioner. A diagnosis of 'dental abscess' was made due to the presence of several carious retained roots in the right side of the mandible and the patient was prescribed a seven-day course of oral amoxicillin 500mg. Over the proceeding 72 hours the patient had started to experience nausea and abdominal pain, which had progressed to episodes of haematemesis and bilious vomiting, fever and progressive neck swelling resulting in difficulty swallowing. On admission the patient showed signs of respiratory distress demonstrating an obvious voice change, right lung base crepitations, and an acute abdomen. The vital parameters on admission are displayed in **Table 2**.

Maxillofacial examination revealed a diffuse indurated bilateral submandibular and submental swelling, with the overlying skin appearing erythematous and hot to touch. Trismus of 1cm was noted and intra-oral examination showed the floor of the mouth to be diffusely swollen and the tongue raised. Carious retained roots of the lower right first and second molars were identified as the source of the OCFI.

In theatre, a tracheostomy was performed together with extraction of the offending root. Extra-oral incision and drainage of the right and left submandibular, sublingual and submasseteric spaces released large quantities of pus. Four corrugated extra-oral drains were inserted into the right and left submandibular and sublingual spaces. A diagnostic laporotomy revealed widespread free serous fluid and the findings were consistent with generalised sepsis. No ulceration or perforation was identified. The patient was transferred to the intensive care unit (ICU) and commenced intravenous fluids, co-amoxiclav 1.2g, metronidazole 500mg and proton-pump inhibitors.

CT imaging of the neck and chest revealed a right pleural effusion, pericardial effusion and retropharyngeal mediastinal collections. A right chest drain was consequently inserted and released 1.5 litres of pus. Microbiological testing identified *Streptococci milleri* and *Enterococci* species. Consequently the antibiotic regime was changed to include gentamycin.

Repeated echocardiograms demonstrated worsening of the pericardial effusion prompting surgical drainage through the placement of percutaneous pericardial drains utilising interventional radiology. Repeated chest radiography and CT scanning revealed the development of a left pleural effusion, increase in the size of the retropharyngeal abscess and involvement of the parapharyngeal fascial tissue spaces. The patient therefore underwent repeated surgical exploration of the neck spaces and insertion of two intercostal drains. Following the results of blood cultures, which isolated *Candida* species and *Staphlococcus aureus,* antimicrobial therapy was further changed to meropenem, fluconazole and metronidazole. The patient then developed thrombosis of the right internal jugular vein (Lemierre's syndrome), managed by anticoagulation therapy, and spread of pus collections into the carotid sheath extending inferiorly to the mediastinum and visceral space. After achievement of adequate surgical drainage, the neck, chest, pericardial, mediastinal and intercostals drains were progressively removed and the patient was gradually weaned off respiratory support (**Figure 1**). The patient made a full recovery and was finally discharged from hospital five weeks after his initial admission, having spent 15 days in the ICU.

Table 3: Red flag signs exhibited in serious odontogenic cervico-fascial infections.

Rapid progressive swelling of the face and neck
Severe worsening trismus
Shortness of breath
Tachypnoea
Change in voice
Odynophagia
Dysphagia
Pyrexia
Tachycardia
Recent onset of neck stiffness with the above

Discussion

OIs due to carious teeth are common and in most cases these infections are successfully managed in primary care with dental treatment including removal of the cause and appropriate antimicrobial therapy. Occasionally, OIs progress to involve fascial spaces of the face, neck and thorax, necessitating hospital admission for management. GDPs in primary care, face the challenge of recognising those at risk of developing OCFIs, which are potentially life threatening and require urgent referral for hospital treatment. With limited access to urgent diagnostic imaging and laboratory testing, distinguishing the group of patients who can successfully be managed in community from those who require management in secondary care is difficult. The decision making is more complex in that OIs can evolve over time, and although starting as a localised problem, may rapidly progress to one necessitating hospital admission. Early recognition of these changes in the primary care setting can be challenging.

It has been suggested that comorbid systemic diseases may be an important predictor of OCFIs;[9] this, however, was not the case in our

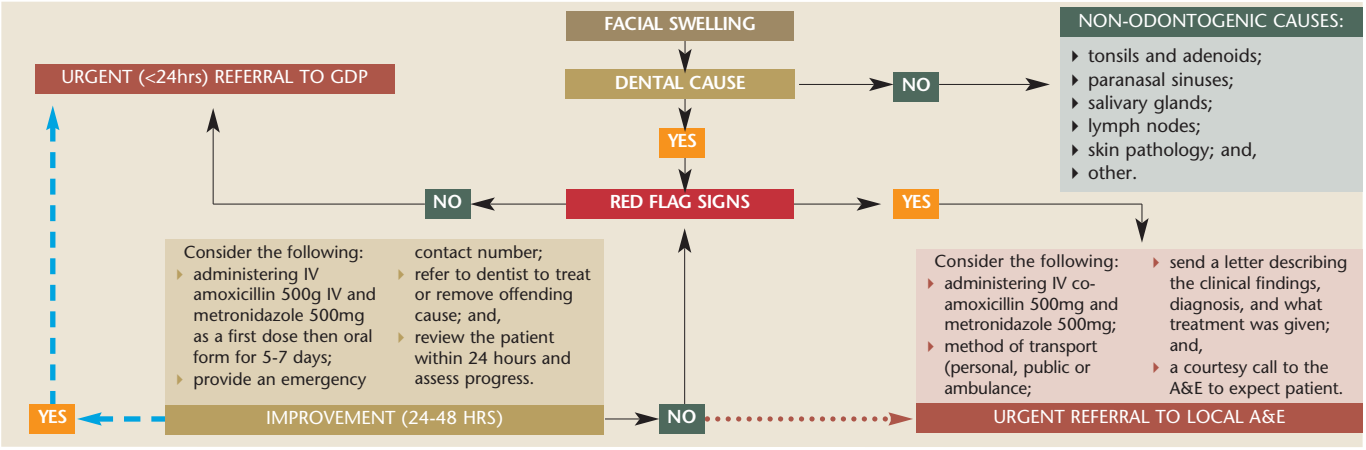


FIGURE 2: Patient care pathway for odontogenic cervico-fascial infections. Dotted arrows: if rapid access to GDP is not possible. Dashed arrow: if clinical lack of improvement or worsening of signs and symptoms, then consider, reassess or refer to local A&E. GDP: general dental practitioner.

experience, and severe OCFIs can affect young patients who are otherwise healthy. Similar findings have been reported by other authors.[14]

The two clinical examples described above, presented with signs including vomiting, worsening dysphagia, odynophagia, dyspnoea and hoarseness or dysphasia. Signs of pyrexia, trismus, tachypnoea, tachycardia and progressing neck swelling might be present. It is therefore vital that healthcare professionals accurately assess, recognise and understand the significance of these 'red' flag signs of OCFIs (**Table 3**). These signs and symptoms are indicative of the spread of infection with systemic involvement necessitating immediate referral to the nearest oral and maxillofacial surgery unit. The provision of oral antibiotics in such situations is of little clinical value, and delays the urgent medical and surgical treatment needed to avoid significant morbidity and risk of death.

In the majority of OCFIs, the mandibular permanent molars are responsible.[15] Unlike non-odontogenic infections (e.g., tonsillar infection) OCFIs tend to involve multiple fascial spaces and are polymicrobial in nature.[16,21] The microorganisms frequently cultured are commensals and are predominantly Gram-positive aerobes and anaerobes. Due to the polymicrobial nature of these infections it is imperative to consider antibiotics that are active against both aerobic and anaerobic Gram-positive and -negative bacteria. The antibiotic regime should then be modified appropriately once microbiology culture and sensitivity results become available.

CT and MRI are the recommended imaging modalities, allowing thorough assessment of soft tissue involvement. They offer the ability to determine the site of fluid collection and distinguish abscess formation from cellulitis.[22] CT scans are quicker and easier to perform compared to MRI, particularly in patients with serious OCFIs in whom prolonged supine positioning in the scanner is likely to compromise the airway.

These cases emphasise the importance of prompt and effective medical and surgical management. The fundamental principles of treatment include immediate patient admission, airway support, aggressive broad-spectrum intravenous antimicrobial therapy directed against the cultured microorganisms, removal of the cause, immediate surgical incision and adequate drainage, and decompression of the involved cervico-fascial spaces.[8] This management strategy is crucial in stabilising the patient, reducing morbidity and preventing further serious complications. Failure to do this is clearly associated with significant morbidity, resulting in a prolonged hospital stay. Several reports have demonstrated that patients presenting with OCFIs frequently require long periods of hospital stay, prolonged time in intensive care and often several operations to achieve adequate incision and drainage of the OCFI,[11,21,22] resulting in significant patient morbidity with a concomitant financial burden.

Conclusion

Dental abscesses can evolve to cervico-fascial infections with potentially life threatening complications. 'Dental' abscess is a term that has often been misused or underestimated, as even in healthy young adults, albeit rarely, OCFIs can be associated with serious complications and economic cost. The dynamic nature of the infection process with the unpredictable pattern of infection progression and the limited access to urgent investigations in primary care, makes it more challenging for GDPs to make the appropriate decision as to where and when the patient should be managed. GDPs do, however, have a crucial role in primary care since they are often the first point of contact for patients. It is therefore fundamental for them to identify the early signs suggestive of significant infection and to consider the red flag signs in patient management. OCFIs exhibit a dynamic course, which can be difficult to prognosticate, so close monitoring and re-evaluation of the patient is essential. GDPs should monitor such patients managed in primary care and, when appropriate, refer immediately to hospital for further management. **Figure 2** proposes an optimal patient care pathway for use in primary care.

References

1. **Mihos, P., Potaris, K., Gakidis, I., *et al.*** Management of descending necrotizing mediastinitis. *J Oral Maxillofac Surg 2004; 62: 966-972.*
2. **Uluibau, I.C., Jaunay, T., Goss, A.N**. Severe odontogenic infections. *Aust Dent J Medications Supplement 2005; 50: S74-S81.*
3. **Vieira, F., Allen, S.M., Stocks, R.M.S., *et al.*** Deep neck infection. *Otolaryngol Clin North Am 2008; 41: 459-483.*
4. **Paonessa, D.F., Goldstein, J.C**. Anatomy and physiology of head and neck infections (with emphasis on the fascia of the face and neck). *Otolaryngol Clin North Am 1976; 9: 561-580.*
5. **Flynn, T.R., Rabie, M.S., Levi, M.H., *et al.*** Severe odontogenic infections, Part I: prospective report. *J Oral Maxillofac Surg 2006; 64: 1093-1103.*
6. **Atkinson, M.E., White, F.H**. *Principles of Anatomy and Oral Anatomy for Dental Students.* Singapore; Churchill Livingstone Press, 1992.
7. **Daramola, O.O., Flanagan, C.E., Maisel, R.H., *et al.*** Diagnosis and treatment of deep neck space abscesses. *Otolaryngol Head Neck Surg 2009; 141: 123-130.*
8. **Parhiscar, A., Har-El, G**. Deep neck abscess: a retrospective review of 210 cases. *Ann Otol Rhinol Laryngol 2001; 110: 1051-1054.*
9. **Heimdahl, A., Von Konow, L., Satoh, T., *et al.*** Clinical appearance of orofacial infections of odontogenic origin in relation to microbiological findings. *J Clin Microbiol 1985; 22: 299.*
10. **Yang, S.W., Lee, M.H., Lee, Y.S., *et al.*** Analysis of life-threatening complications of deep neck abscess and the impact of empiric antibiotics. *J Otorhinolaryngol Relat Spec 2008; 70: 249-256.*
11. **Lewis, M.A.O., MacFarlane, T.W., McGowan, D.A.** A microbiological and clinical review of the acute dentoalveolar abscess. *Br J Oral Maxillofac Surg 1990; 28: 359.*
12. **Huang, T., Tseng, F., Yeh, T., *et al.*** Factors affecting the bacteriology of deep neck infection: a retrospective study of 128 patients. *Acta Otolaryngol 2006; 126: 396-401.*
13. **Leibovici, L., Yehezkelli, Y., Porter, A., *et al.*** Influence of diabetes mellitus and glycaemic control on the characteristics and outcome of common infections. *Diabet Med 1996; 13: 457-463.*
14. **Lewis, M.A.O., Parkhurst, C.L., Douglas, C.W.I., *et al.*** Prevalence of penicillin resistant bacteria in acute suppurative oral infection. *J Antimicrob Chemother 1995; 35: 785-791.*
15. **Mariono, G., Rinaldi, R., Staffieri, C., *et al.*** Deep neck infection with dental origin: analysis of 85 consecutive cases 2000-2006. *Acta Otolaryngol 2008; 128: 201-206.*
16. **Robertson, D., Smith, A.J.** The microbiology of the acute dental abscess. *J Med Microbiol 2009; 58: 155-162.*
17. **Al-Qamachi, L.H., Aga, H., McMahon, J., *et al.*** Microbiology of odontogenic infections in deep neck spaces: A retrospective study. *Br J Oral Maxillofac Surg 2009; 48: 37-39.*
18. **Stanford, J.P., Gilbert, D.N., Moellering, R.C.** Selection of initial empirical antimicrobial therapy on clinical grounds. *The Sanford Guide to Antimicrobial Therapy, 1996.*
19. **Rega, A.J., Aziz, S.R., Ziccardi, V.B.** Microbiology and antibiotic sensitivities of head and neck space infections of odontogenic origin. *J Oral Maxillofac Surg 2006; 64: 1377-1380.*
20. **Bratton, T.A., Jackson, D.C., Nkungula-Howlett, T., *et al.*** Management of complex multi-space odontogenic infections. *J Tenn Dent Assoc 2002; 82: 39-47.*
21. **Thomas, S.J., Atkinson, C., Hughes, C., *et al.*** Is there an epidemic of admissions for surgical treatment of dental abscesses in the UK? *BMJ 2008; 336: 1219-1220.*
22. **Berge, T.I.** Management of infections requiring hospitalisation associated with partially erupted third molars. *Acta odontologica Scandinavica 1996; 54: 309-313.*

Results of data gathered at a smoking cessation counselling stand in the Dublin Dental University Hospital on Mouth Cancer Awareness Day 2012

Précis:
The smoking habits of visitors to the Dublin Dental University Hospital on Mouth Cancer Awareness Day 2012 as researched by dental hygiene students.

Abstract
Introduction: The addictive aspect of smoking is well acknowledged. Research has shown that interventions by healthcare professionals have been shown to be effective and that smokers will benefit from smoking cessation counselling before, during and after their quit attempts. Dental hygienists, as part of the healthcare team, are well positioned to provide this counselling.
Material and methods: A questionnaire was completed by patients, staff, students and members of the public, during Mouth Cancer Awareness Day 2012 in the Dublin Dental University Hospital to assess the prevalence of smoking as well as the history of smoking and quit attempts by current and former smokers.
Results: The prevalence of smoking was lower than the national average. A total of 18.3% of those surveyed were smokers, 25% were former smokers, and 68% of the smokers had their first cigarette within 30 minutes of waking, indicating high dependence.
Discussion and conclusions: The majority of the smokers (79%) had attempted to quit. Stress was the most common reason for lapsing. The most common reasons for smoking cessation were health issues. The public is well disposed to receive information regarding smoking and the methods available to quit by healthcare professionals on health awareness days such as Mouth Cancer Awareness Day.

Journal of the Irish Dental Association 2013; 59 (6): 308-310.

C. Waldron
RDH MSc MA (Health Promotion)
C. Brett,
O. Cronin,
A. Guray,
A. Hynes,
C. McGovern,
M. Ryan
(student dental hygienists),
Dublin Dental University Hospital

Corresponding author:
Catherine Waldron
DDUH
Lincoln Place
Dublin 2
Email: catherine.waldron@dental.tcd.ie
Tel: 01-612 7369

Introduction

A smoking cessation counselling stand was run by the lecturer in dental hygiene and six second-year dental hygiene students between the hours of 8.30am and 5.30pm on Mouth Cancer Awareness Day, Wednesday September 19, 2012.

Visitors to the stand included patients attending for appointments, staff and students in the Dublin Dental University Hospital (DDUH) and members of the public, who came in to visit the information stands on Mouth Cancer Awareness Day. They were provided with information on the relationship between oral/general health and smoking habits, the methods available to help in a quit attempt, and advice in relation to dealing with the barriers to quitting.

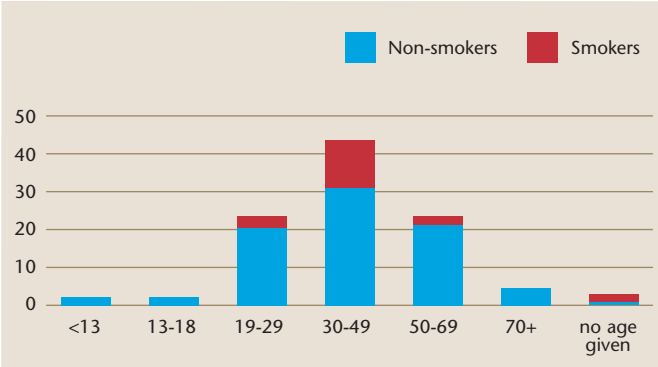


FIGURE 1: Age profile and smoking status.

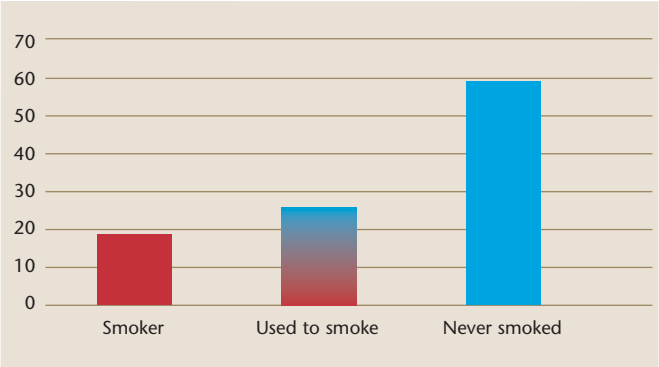


FIGURE 2: Smoking history.

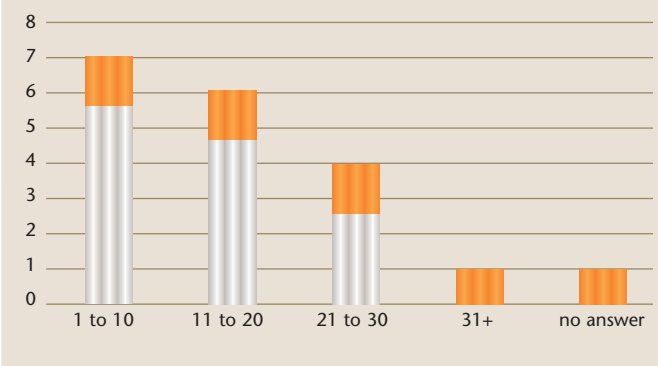


FIGURE 3: Number of cigarettes smoked per day.

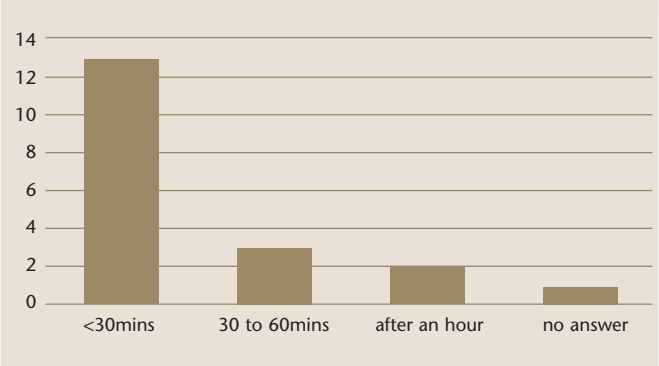


FIGURE 4: Addiction level – how soon after waking until first cigarette.

In 2000 the Cochrane Tobacco Addiction Review Group carried out a systematic review of the evidence to help inform policy makers, healthcare workers and individuals wishing to quit smoking. This was updated in 2005 and 2008 with no change to the conclusions. They concluded that intervention has been shown to be more effective than either no intervention or the provision of usual care. Those interventions using nicotine replacement therapy (NRT) or prescription drugs were shown to be more successful. Smokers who reported a desire to quit were more successful.[1]

The addictive aspect of smoking is well acknowledged, the level of addiction being similar to that of other drugs of abuse such as amphetamines and cocaine.[2] Although some smokers can quit without help, most need it. Most smokers will have several quit attempts, relapsing within days, weeks or months.[3] Smoking is increasingly recognised as a chronic health condition, requiring ongoing assessment and repeated intervention.[4] Most smokers will express a desire to quit when informed of the health risks.[5] Research has shown that smokers will benefit from smoking cessation counselling before, during and after their quit attempts.[3]

The aim of this research was to assess the smoking habits of the patients, staff, students and members of the public visiting the smoking cessation stand on Mouth Cancer Awareness Day 2012.

Material and methods

The visitors to the stand were asked to complete a short questionnaire

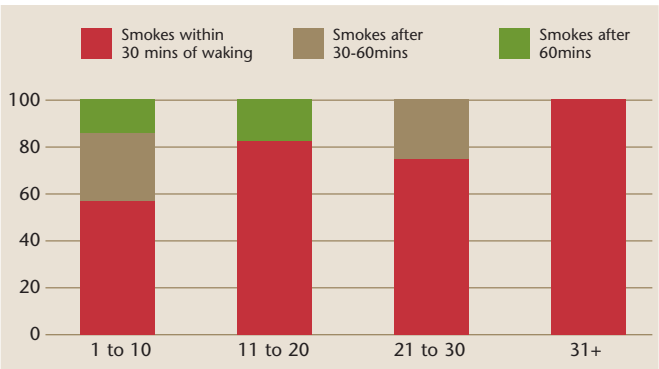


FIGURE 5: Relationship between level of smoking and addiction.

in relation to their smoking habits. The questionnaire aimed to identify the prevalence of smokers, and how many cigarettes a day they smoked. Their level of addiction was assessed by asking how soon after waking they had their first cigarette. They were asked if they had attempted to quit, what methods they had used and how long they had been successful for. Previous smokers were also asked about how they had quit and what had motivated them.

Results

In total 104 questionnaires were completed. The results of the data gathered in the questionnaires are outlined in **Figures 1-5**. There was

a broad range of age groups; the largest group (42%) was aged between 30 and 49. The smoking prevalence (18.3%) was lower than the national average (23.6%). Of the non-smokers, 69% (N=59) had never smoked and 31% (N=26) used to smoke. Of the 19 smokers, seven smoked between one and ten cigarettes a day and five smoked more than 20 cigarettes a day. Of the smokers surveyed, 68% had their first cigarette within 30 minutes of waking. There was correlation between the number of cigarettes smoked and the addiction level.

Discussion and conclusion

The prevalence of smoking in this survey (19/104) was lower than the national average (18.3% compared to 23.6%).[6] This is perhaps not surprising, as a number of staff and students were included in the survey and research shows that smoking prevalence among healthcare professionals is lower.[7]

The level of addiction of smokers can be simply determined by asking the question: "How soon after waking do you have your first cigarette?" Research tells us that those who smoke within the first 30 minutes of waking have the highest addiction levels and may find it harder to succeed with a quit attempt.[8]

Of the 19 smokers, two were not interested in attempting to quit and two would consider attempting to quit at some stage in the future. Fifteen smokers had attempted to quit in the past. Quit periods ranged from one day to six years. A total of 13% had succeeded for days, 13% for weeks, 40% succeeded for between one and 12 months, and 27% had succeeded for between one and six years. It is generally accepted that to regard a quit attempt as being successful the smoker should have quit for 12 months. The most common reason given for lapsing in the quit attempt was stress.

In relation to the methods used to quit by the current smokers, 'cold turkey' or willpower was the most common method (67%). Some 33% used various forms of NRT, and one combined NRT with the Allen Carr method. All were prepared to try to quit again. Research tells us that smokers are twice as likely to succeed with a quit attempt if they use some of the methods available to help them.[9]

Of the previous smokers (N=26), 50% "went cold turkey" or used willpower, 14% used the Allen Carr method, 7% used NRT and 4% used varenicline (Champix). Some 25% did not give details of any method used. They were not asked how many quit attempts they had before they succeeded. The design of the questionnaire was at fault in relation to the incomplete gathering of data on the methods of quitting by the previous smokers. As a result it is not possible to compare these results to other studies. The most common reasons given as motivators to make a quit attempt were health issues.

The smoking cessation stand gave us the opportunity to educate the public, to advise smokers about the methods that are available to help them, and to prepare them for the barriers they may encounter during a quit attempt. The visitors seemed very willing to complete the questionnaires and to listen to the advice given. Information leaflets were given to the visitors to bring home to family and friends. The questionnaire can be revised and refined, and can be used during future Mouth Cancer Awareness Days. The important role of dental hygienists or other healthcare workers in providing smoking cessation counselling to their patients is highlighted by this research.

References

1. **Lancaster, T., Stead, L.** Individual behavioural counselling for smoking cessation. Cochrane Database of Systematic Reviews, Issue 2, 10. 1002/14651858. CD001292.pub2; 2005.
2. **Jarvis, M.J.** Why people smoke. *BMJ* 2004; 328 (7434): 277-279.
3. **Van Schayck, O., Pinnock, H., Ostrem, A., Litt, J., Tomlins, R., Williams, S., *et al.*** IPCRG Consensus Statement: Tackling the smoking epidemic – practical guidance for primary care. *Primary Care Respiratory Journal* 2008; 17 (3): 185-193.
4. **Fiore, M.C., Bailey, W.C., Cohen, S.J., *et al.*** Treating tobacco use and dependence: 2008 Update. Quick reference guide for clinicians 2009 13/12/12. Available from: http://www.ahrq.gov/clinic/tobacco/tobaqrg.htm.
5. **WHO.** Report on the global tobacco epidemic 2009: Implementing smoke-free environments. 2009. Available from: http://www.who.int/tobacco/mpower/2009/en/index.html.
6. **Office of Tobacco Control.** Annual Report 2009. 2010. Available from: http://www.drugsandalcohol.ie/18254/.
7. **Sarna, L., Bialous, S.A., Sinha, K., Yang, Q., Wewers, M.E.** Are healthcare providers still smoking? Data From the 2003 and 2006/2007 Tobacco Use Supplement-Current Population Surveys. *Nicotine & Tobacco Research* 2010; 12 (11): 1167-1171.
8. **Smolen, A., *et al.*** Genes, time to first cigarette and nicotine dependence in a general population sample of young adults. *Addiction* 2007; 102 (4): 655-665.
9. **Stead, L.F., Bergson, G., Lancaster, T.** Physician advice for smoking cessation: Cochrane Database of Systematic Reviews. Issue 2. Art. No.: CD000165. DOI: 10.1002/14651858.CD000165.pub3. Copyright © 2008. The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.; 2005.

Student dental hygienists Oonagh Cronin and Anneka Guray at the smoking cessation stand in 2012.

Dental amalgam: is this the end?

Précis

The use of dental amalgam in dentistry and its health and environmental impacts have been a global matter of interest and controversy for the last decade.

Abstract

Dental amalgam is a reliable and effective restorative material with a well-established role in modern dentistry. Throughout the years its mercury content and the risks posed to human health were main topics of interest for many scientists.

This paper offers a review of the scientific literature on the health and environmental impact of mercury in dentistry published over the last decade. A variety of peer-reviewed, epidemiological and large-scale clinical studies on dental amalgam, as well as published reports of professional and governmental bodies, were organised thematically and analysed. The most relevant findings of the aforementioned literature are reported. No reliance has been placed on unpublished work or publicly available opinions that are not scientifically based. In order to offer an appropriate view on the topic the toxicology, health impacts and possible environmental threats are briefly presented in relation to the relevant literature published in the last ten years.

It is almost unanimously accepted that dental amalgam is a safe material, with little or insignificant adverse effect on general health. However, current and mostly unfounded environmental concerns may result in the implementation of new across the board legislation that could lead to a global dental amalgam 'phase out'.

Journal of the Irish Dental Association 2013; 59 (4): 311-317.

Dr Cristina Taut BDS
Wexford Dental Clinic
12 Lower George Street
Wexford Town
Co. Wexford
T: 053-917 1817
E: cristina.taut@gmail.com

Introduction

Dental amalgam was introduced in clinical dentistry over 150 years ago and has provided a valuable and relatively inexpensive service for patients ever since. While the role of dental amalgam in disease causation with a focus on its mercury content has constituted a matter of controversy for many years now, its environmental impact started to raise some concerns in the last decade, becoming a matter of political interest at international level.

Composition, toxicity, exposure

The key elements of dental amalgam are liquid mercury and a metal alloy. Conventional dental amalgam was predominant in silver (67-74%) and tin (16-28%), also known as the $\gamma(Ag_3Sn)$ phase, and contained very little copper (6%). In order to increase the strength of the amalgam alloys the copper content was subsequently increased to 13% in the dispersion type alloys, or to 30% in the high-copper content alloys.[1] The most commonly used dispensing

format for dental amalgam is sealed capsules with two compartments, one containing amalgam alloy particles – either spherical or irregular – and the other containing liquid mercury at a 1:1 weight ratio. The amalgamation reactions for high-copper content amalgam alloys are briefly presented below:[1]

$Ag_3Sn + Hg \rightarrow Ag_3Sn + Ag_2Hg_3 + Sn_7Hg$

$\gamma + Hg \rightarrow + \gamma_1 + \gamma_1 + \gamma_2$

Followed by:

$Sn_7Hg + AgCu \rightarrow Cu_6Sn_5 + Ag_2Hg_3$

$\gamma_2 + AgCu \rightarrow Cu_6Sn_5 + \gamma_1$

Set amalgam contains 50% mercury. The majority of this mercury is contained in the γ_1 phase and a minor percentage in the γ_2 phase. As is well known, set amalgam restorations are subject to tarnish and corrosion. The latter is mainly caused by the higher electronegativity of the γ_2 phase, which leads to galvanic corrosion with the release of tin and mercury. The tarnish process, however, due to the passivating effect of the deposited layer, gives the amalgam alloy a greater protection from corrosion. It is also believed that the corrosion potential of the set amalgam decreases due to surface ennoblement.[2,3]

When assessing the toxicology of dental amalgam it is widely agreed that the element of concern is its mercury content. The analytical instruments for the determination of mercury concentrations in biological samples are well developed and sufficiently sensitive; however, a number of problems with sampling, the determination of mercury speciation, and the interpretation of results are evident.[4]

Human exposure to mercury from dental amalgams may occur by inhalation of the mercury vapours, by ingestion of released elemental mercury, or by swallowing small pieces of amalgam. The absorption of ingested elemental mercury is very limited, typically lower then 0.01% of the dose ingested.[5] However, approximately 80% of inhaled elemental mercury is absorbed in the lungs, with a small part of this (7-14%) being eliminated by exhalation within a week of exposure.[6] Another small part is delivered to the central nervous system, while the rest is slowly oxidised in the blood to Hg^{2+} and distributed to all body tissues. The principal mode of action for its toxicity is by tightly binding to proteins. The elimination of elemental mercury or Hg^{2+} takes place by excretion via urine or faeces. While some studies state that the elemental mercury's half-life varies within the range of 20-90 days,[4] others assume it to be up to one to 18 years in the brain and bones.[7] Following elemental mercury and Hg^{2+} exposure, the highest concentration is contained in the kidney.[4,6]

In order to quantify the exposure from dental amalgams, measurements of mercury concentration in urine, blood, saliva, hair, nails and faeces have been proposed and used. However, it is now accepted that urine levels tend to reflect inorganic mercury exposure. Total mercury levels in whole blood are more indicative for methyl mercury exposure, while measurements of saliva, hair, nails and faeces are controversial and not always relevant.[8,9,10,11]

TABLE 1: Respiratory air concentrations, blood levels and urinary excretion of mercury in individuals with amalgam fillings compared to levels of mercury considered safe for occupational exposures.[3]

(Source: SCENIHR, The safety of dental amalgam and alternative dental restoration materials for patients and users.)

Medium	Individual with typical number of fillings	Occupational limit
Respiratory air concentration	3-17μg Hg/day	346μg Hg/day
Urinary concentration of mercury	3.5μg Hg/L	100μg Hg/L 25μg Hg/L
Blood concentration	3-5μg Hg/**L**	

The World Health Organisation (WHO) estimates the average daily mercury intake derived from amalgam restorations to be 10 g (range 3-17μg). Low concentrations of mercury, usually below 5μg/litre of whole blood, are inevitably detectable in individuals with or without amalgam fillings. No adverse effects were detected at the concentrations mentioned above.[4] The respiratory, blood and urinary mercury levels of individuals with amalgam fillings are up to 30 times lower than considered safe for occupational exposure. The estimated mercury levels are presented in **Table 1**.

A study carried out by Zimmer *et al.*, which examined the mercury concentration in blood, urine and saliva samples from 40 female subjects who claimed to suffer from serious health damage due to amalgam fillings ("amalgam-sensitive subjects") and 43 female control subjects, concluded that mercury levels in the blood (2.35-2.40μg/litre) and urine (1.5-1.8μg/litre) of the examined subjects were within the range of background levels in the general population. The median mercury blood levels were slightly lower (2.35μg/litre) in the amalgam-sensitive group, but the differences were not significant.[11]

Halbach *et al.* (2000, 2007) remarked that the plasma levels of mercury are slightly higher than the mercury in erythrocytes, and also noted that a daily intake of 7.4μg of mercury, associated with a high dental amalgam load, was well below the tolerated dose of 30μg agreed by the WHO.[12,13]

When measuring urinary concentration of mercury in children, a study carried out in Germany revealed mean levels of 0.25 g/litre, indicating some correlation with the number and integrity of amalgam restorations,[9] while another study reported a high correlation with the number of amalgam fillings and time of placement, and outlined a slight difference in urinary levels of mercury between boys and girls.[16]

Occupational exposure in dental personnel was the topic of interest of a variety of studies carried out in the last two decades. It is widely agreed that due to appropriate dental mercury hygiene and increased interest in the use of non mercury-containing restorative

TABLE 2: Brief presentation of studies into effects of amalgam by organ system.

Organ system	Epidemiological outcomes
Urinary system	Urinary mercury mean levels are higher in dentists, but there is no evidence of higher morbidity and kidney dysfunctions.[18] When comparing children with and without amalgam fillings, no statistically significant differences were found in the renal glomerular function.[32]
Neurological system	The available data does not support the existence of an association between amalgam and Alzheimer's disease.[31,33] Anti-amalgam militants, however, maintain that inorganic mercury might play a role as a co-factor in the development of Alzheimer's disease.[34] There is no conclusive evidence of an association between exposure to dental amalgam and multiple sclerosis.[35,36] However, future studies that take into consideration the size of restoration and the duration of exposure are considered to be needed by some scientists.[36] No link could be established between neuropathy and amalgam exposure.[37] Exposure to mercury from dental amalgam does not adversely affect neurological status.[38] Low-level mercury exposure does not interfere with sensory nerve function.[39]
Immune system	Mercury exposure does not cause autoimmune disease directly, but it might interact with triggering events, either genetic or acquired.[40] Mercury has the potency to induce localised mucosal reactions as a manifestation to mercury allergy.[41,42]
Reproductive system	A study carried out on a population of dental nurses showed that the group that worked with silver and copper amalgam fillings without protective gloves or ventilation was more prone to reproductive health problems, especially early hysterectomy.[43] The possibility of a weak association between exposure to mercury and some other routinely used substances and the risk of miscarriage among dental workers cannot be excluded.[44]
Psychological conditions	While many individuals attribute their neuropsychological conditions to mercury exposure from dental amalgam, there is no credible supportive data in the literature to the present date.[32,37,45] A study carried out in Norway on a group of self-assessed patients complaining of fatigue, muscle and joint pain, dizziness, headache, burning or dry mouth, and altered taste due to mercury in amalgam fillings revealed a slight decrease in the intensity of the general symptoms after the removal of the fillings. However, the intra-oral symptoms decreased significantly.[46]

alternatives, the exposure to mercury of dental personnel has decreased significantly.[17,18,19]

Both the Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health proposed a threshold limit value of 50mg/m^3 of air of mercury vapour, as time-weighted average, based on constant exposure of 40 hours per week. The WHO has adopted a recommended limit of 25mg/m^3 of air.

The main sources of exposure for dental personnel are the aerosols created in particular during placement and removal of amalgam restorations and the exhaust air from dental vacuum systems. Stone *et al.* estimated that the latter can reach values that exceed human exposure limits.[20] The urinary mercury level measured in dentists was within the range of 3-22μg, on average four times higher than that of the control group; however, there is no evidence of higher morbidity of kidney[18,21,22] or neurological dysfunction.[23]

The exposure of dental personnel to mercury vapours is multifactorial, depending on the number of working hours, the number of amalgam restorations placed and removed, and the mercury hygiene regimen adopted.[21,24,25]

Adverse effects

During the last decade, a variety of studies have focused on analysing the relationship between mercury sensitivity and localised mucosal reactions, such as lichen planus and burning mouth syndrome. These studies concluded that in mercury patch-test positive patients, the removal of the amalgam fillings should lead to improvement[26,27,28,29] or complete remission[26,30] of the symptoms.

From a systemic point of view older epidemiological studies investigated the negative effects of mercury released by dental amalgam fillings on the nervous and renal system, and also on the immune, respiratory, cardiovascular, gastro-intestinal, haematological and reproductive systems. However, the existing information does not provide sufficient evidence of a correlation between the mercury released by dental amalgam fillings and chronic disease incidence and mortality.[31]

Environmental and political aspects

Concerns over the persistence and effects of mercury in the environment, particularly in wastewater, have increased significantly over the past decade. It is believed that the mercury, being chemically bound in a metal alloy, produces a very stable compound and may only be released in a very small proportion over time as corrosion takes place.[47] Dental mercury contamination is considered to represent only a small proportion of terrestrial mercury contamination, with values ranging from 3-4%.[47,48] However, the extended impact of dental amalgam components on the environment is not fully known,[49,50,51,52,53] so source reducing and elimination stands as the best defence against environmental mercury contamination.[54,55]

In 2007, The Scientific Committee on Health and Environment Risks (SCHER) was requested to investigate environmental risks and indirect health effects connected to the use of dental amalgam. The

conclusion of this investigation was that due to lack of detailed quantitative information on the use and release patterns in all EU-27 countries, a comprehensive risk assessment could not be performed. SCHER had attempted to perform a screening level risk assessment outlining that the main concern related to the emission of inorganic mercury into the environment is its potential for bioaccumulation and biomagnification through the food chain. The conclusions of this screening were that the added risk for aquatic and soil organisms through inorganic mercury contributions from dental clinics should be considered low, and that it is essential to assess the methylation rates of inorganic mercury in order to conduct a correct evaluation.[49]

The report advised that the atmospheric emissions and further deposition of mercury from crematoria should be considered as an additional contribution of mercury from dental amalgam.[49] However, the BIO Intelligence Services (BIOIS) study entitled 'Study on the potential for reducing mercury pollution from dental amalgam and batteries', published in July 2012, reported a stabilisation in mercury emissions from crematoria since 2005. The number of crematoria equipped with mercury abatement devices in European countries is increasing progressively.[56]

The dental profession worldwide has shown an ethical and responsible attitude to the often-perceived problem with dental amalgam.[47] Various representative organisations for the dental profession expressed their interest and concern in the environmental issue, and developed guidelines and recommendations for handling dental amalgam waste. In November 2010, The Council of European Dentists (CED) encouraged national dental associations to support their members in compliance with EU waste management laws, and in November 2011 it adopted a statement on responsible practice regarding dental amalgam.[57,58]

At national level, some countries have adopted their own protocols and legislation in relation to the use of mercury alloys in dentistry. In an attempt to phase out the use of dental amalgam the federal governments of Norway, Finland, Denmark and Sweden had enacted legislation requiring that dental patients receive informed consent information about the dental restorative material that will be used, and that other materials than amalgam are to be considered as first choice. Later in 2008 and 2009, Norway, Sweden and Denmark prohibited the use of dental amalgam in tooth restorations unless the patient presents special medical circumstances (allergies to alternative filling materials or treatment under general anesthetic). Through UN negotiations, Norway is actively pursuing a legally binding global agreement on the reduction of the use and release of mercury with the final aim of implementing a global ban on the use of products containing mercury.[59] Some scientists, however, vehemently express their disapproval of the banning of dental amalgam, voicing their concern about the impact that this could have on dental health. It is considered that this is a political issue, which will have an insignificant impact on total worldwide mercury pollution, and which could be very well managed by adopting an adequate mercury hygiene regimen, including ISO-approved amalgam separators.[60] DW Jones estimated that the environmental impact of mercury from 800,000 dental offices worldwide would represent between 0.04 and 0.2% of the total worldwide environmental mercury pollution from all sources, and this could be significantly reduced by using amalgam traps.[60]

At international level, in Maine, California, Connecticut, and Vermont the state governments have enacted informed consent legislation for dental patients receiving amalgam dental restorations.[61] In 2009, the US Food and Drug Administration issued final regulations that classified dental amalgam into class II (moderate risk) and released a guidance document that contains the special control measures imposed.[62] A report released in 2010 states that after the Geneva meeting in 2009, the WHO encourages a global phasing down of the use of dental amalgam, and considers that an immediate ban is not appropriate, suggesting a multi-pronged approach with short-, medium- and long-term strategies. It also outlined that there is a need for more research into the performance, possible adverse effects and viability of alternative dental materials, and that strengthening of disease prevention and health promotion policies is highly important in reducing the need for restorative dental care.[63]

The European Commission (DG Environment) adopted the mercury strategy in 2005 with the aim to reduce mercury levels in the environment. The BIOIS study, carried out for DG Environment and made public in July 2012, estimated that in 2010 the EU demand for mercury in dentistry was an average of 75t Hg/year. The same study estimated that the dental amalgam contribution to overall EU mercury emissions to the air and surface water are as high as 21-32% and 9-13%, respectively. Mercury pollution from dental amalgam is considered to arise from both historical use of amalgam fillings (i.e., burial, crematoria) and current practice. The European Commission agreed that mercury release from dental practices might decrease progressively with the introduction of amalgam separators and also due to constantly increasing aesthetic demands from patients. However, this was not considered enough to reduce the environmental impact, so the study proposed the introduction of specific policy actions aiming to minimise mercury emission from historical dental mercury sources and, where feasible, to eliminate the source of pollution (i.e., dental amalgam). The report advised that a dental amalgam ban would eliminate the environmental impact in the longer term, and the cessation of mercury usage would only be significant after about 15 years; therefore, both policies need to be employed to reduce mercury release in the short term as well.[56] The study suggested that if such a ban was to be implemented in 2013, dental amalgam would be phased out by 2018.

The conclusion of the BIOIS study was that the combination of policies should not create implementation difficulties from a political point of view, and that the associated costs would be reasonable for the various stakeholders and would be outweighed by the environmental benefits. The study admitted that due to a lack of accurate quantitative information and uniformity of national protocols, rough estimations and approximations had to be considered in order to assess the environmental burden of dental amalgam.

The CED strongly criticised the methods used in conducting this study. The lack of established evidence and the significant number of

rough estimations and assumptions is rigorously outlined in the CED response to the BIOIS final report. It is rightly considered that a strong emphasis should have been placed on the 2009 WHO consensus expert report on 'Future use of materials for dental restoration' developed by experts in material science and dental teaching and practice; however, the BIOIS draft report made insignificant reference to this study. While acknowledging the need for improvement in the enforcement of waste legislation regarding dental amalgam, the CED fully agrees with the conclusion of the WHO report, which advises on a "phasing down" rather than a "phasing out" approach of dental amalgam at the current time. The CED response highlighted the complexity of the problem, strongly advising the implementation of well-funded prevention programmes as a medium- and long-term alternative to reduce environmental pollution from dental practices. The CED considered it important that more research was done in order to establish the toxicology and the environmental impact of waste products generated by the use of alternative materials.[64]

A news release posted on the British Dental Association website at the end of 2012 voiced newly emerged concerns that the United Nations Environmental Programme (UNEP) Intergovernmental Negotiating Committee (INC) seemed to be favouring the implementation of an outright dental amalgam ban rather than the phasing down approach proposed by the WHO[65] and the CED.[64] However, the outcome of the fifth and final INC meeting on January 13 in Geneva appears to be a positive one. The committee decided to take a balanced approach that recognises the benefits brought by dental amalgam to oral health. It is now believed that the multilateral environmental agreement on mercury, due to be released during this year, will reinforce the need for a gradual reduction in the use of dental amalgam, committing to a global phase down approach.[66]

Conclusions

Dental amalgam is an effective restorative material, its popularity arising from its ease of use, good long-term performance and low cost. A variety of scientific studies carried out during the last decade show that the material is safe to use. While dental amalgam might be associated with very low rates of local adverse effects, there is no conclusive evidence suggesting risk of adverse systemic effects. Mercury exposure from dental amalgam has decreased significantly in recent years due to responsible professional conduct and proper mercury hygiene protocols.

Due to lack of detailed information on the country-specific use and release patterns for dental amalgam, it is very difficult to quantify the environmental burden of mercury in dentistry. The evidence brought by studies assessing the environmental risks is based on estimations and assumptions; therefore, no concrete conclusions can be drawn.

Against the valid hypothesis proposed by some scientists that the environmental impact of dental amalgam is almost insignificant, there are vehement voices at both European and international level demanding the introduction of new polices that would restrict the use of dental amalgam, therefore reducing its environmental impact.

Dental amalgam 'phase down' would most certainly have its implications on national dental health, affecting and possibly reducing treatment alternatives. However, this approach would have a milder impact on dental professionals and dental health than the introduction of an outright dental amalgam ban. A transitional period would allow time for increased concentration on preventive care and implementation of possible changes to national health insurance schemes.

Despite the fact that dental amalgam has a well-established position in modern dentistry and that the vast majority of dental professionals have adopted responsible practice protocols, it appears that the days of dental amalgam use in dentistry might be coming to an end. It seems that 2013 could prove to be quite a decisive year for the future of this low-cost, highly effective direct restoration material.

References

1. **O'Brien, W.J.** *Dental Materials and their Selection*. Quintessence Publishing Co., Inc., 2002.
2. **Sutow, E.J., Maillet, W.A., Taylor, J.C., Hall, G.C., Millar, M.** Time-dependent corrosion potential of newly-placed admixed dental amalgam restorations. *Dent Mater* 2007; 23: 644-647.
3. **Karam, J.R., Rinchuse, D.J.** Dental amalgam corrosion in vacuum-formed retainers. *Orthodontics (Chic.)* 2011; 12 (1): 70-74.
4. **Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR).** The Safety of Dental Amalgam and Alternative Dental Restoration Materials for Patients and Users. May 2008.
5. **Klaassen, C.D.** *Casarett and Doull's Toxicology. The Basic Science of Poisons.* New York; McGraw-Hill Medical Publishing Division, 2001.
6. **Clarkson, T.W.** The three modern faces of mercury. *Environ Health Perspect* 2002; 110 (Suppl.) 1: 11-23.
7. **Mutter, J., Naumann, J., Walach, H., Daschner, F.** Amalgam risk assessment with coverage of references up to 2005. *Gesundheitswesen* 2005; 67 (3): 204-216.
8. **Berglund, M., Lind, B., Björnberg, K.A., Palm, B., Einarsson, O., Vahter M.** Inter-individual variations of human mercury exposure biomarkers: a cross-sectional assessment. *Environ Health* 2005; 4 (20): 1-11.
9. **Pesch, A., Wilhelm, M., Rostek, U., Schmitz, N., Weishoff-Houben, M., Ranft, U., *et al.*** Mercury concentrations in urine, scalp hair, and saliva in children from Germany. *J Expo Anal Environ Epidemiol* 2002; 12: 252-258.
10. **Ohno, T., Sakamoto, M., Kurosawa, T., Dakeishi, M., Iwata, T., Murata, K.** Total mercury levels in hair, toenail, and urine among women free from occupational exposure and their relations to renal tubular function. *Environ Res* 2007; 103 (2): 191-197.
11. **Zimmer, H., Ludwig, H., Bader, M., Bailer, J., Eickholz, P., Staehle, H.J., *et al.*** Determination of mercury in blood, urine and saliva for the biological monitoring of an exposure from amalgam fillings in a group with self-reported adverse effects. *Int J Hyg Environ Health* 2002; 205: 205-211.
12. **Halbach, S., Vogt, S., Köhler, W., Felgenhauer, N., Welzl, G., Kremers, L., *et al.*** Blood and urine mercury levels in adult amalgam patients of a randomised controlled trial: interaction of Hg species in erythrocytes. *Environ Res* 2008; 107 (1): 69-78.
13. **World Health Organisation (WHO).** Concise International Chemical Assessment Document 50. Elemental mercury and inorganic mercury

compounds: human health aspects. Geneva; World Health Organisation, 2003.

14. **Barregard, L.** Mercury from dental amalgam: looking beyond the average. *Occup Environ Med* 2005; 62: 352-353.
15. **Barregard, L., Horvat, M., Mazzolai, B., Sallsten, G., Gibicar, D., Fajon, V., *et al.*** Urinary mercury in people living near point sources of mercury emissions. *Sci Total Environ* 2006; 368: 326-334.
16. **Woods, J.S., Martin, M.D., Leroux, B.G., DeRouen, T.A., Leitão, J.G., Bernardo, M.F., *et al.*** The contribution of dental amalgam to urinary mercury excretion in children. *Env Health Perspec* 2007; 115 (10): 1527-1531.
17. **American Dental Association (ADA) Council on Scientific Affairs.** Dental Mercury Hygiene Recommendations. *J Am Dent Assoc* 2003; 134: 1498-1499.
18. **Hörsted-Bindslev, P.** Amalgam toxicity – environmental and occupational hazards. *J Dent* 2004; 32: 359-365.
19. **Duncan, A., O'Reilly, D.S., McDonald, E.B., Watkins, T.R., Taylor, M.** Thirty-five-year review of mercury monitoring service for Scottish dental practices. *Br Dent J* 2011; 210 (3).
20. **Stone, M.E., Cohen, M.E., Stone Debban, B.A.** Mercury vapour levels in exhaust air from dental vacuum systems. *Dent Mater* 2007; 23: 527-532.
21. **Dodes, J.E.** The amalgam controversy – an evidence-based analysis. *J Am Dent Assoc* 2001; 132: 348-356.
22. **Ritchie, K.A., Burke, F.J.T., Gilmour, W.H., MacDonald, R.D., Dale, I.M., Hamilton, R.M., *et al.*** Mercury vapor levels in dental practices and body mercury levels of dentists and controls. *Br Dent J* 2004; 197: 625-632.
23. **Thygesen, L.C., Flachs, E.M., Hanehoj, K., Kjuus, H., Juel, K.** Hospital admissions for neurological and renal disease among dentists and dental assistants occupationally exposed to mercury. *Occup Environ Med* 2011; 68 (12): 895-901.
24. **Ritchie, K.A., Gilmour, W.H., Macdonald, E.B., Burke, F.T.J., McGowan, R.D., Dale, I.M., *et al.*** Health and neuropsychological functioning of dentists exposed to mercury. *Occupat Environ Med* 2002; 59: 287-293.
25. **Morton, J., Mason, H.J., Ritchie, K.A., White, M.** Comparison of hair, nails and urine for biological monitoring of low level inorganic mercury exposure in dental workers. *Biomarkers* 2004; 9: 47-55.
26. **Issa, Y., Duxbury, A.J., Macfarlane, T.V., Brunton, P.A.** Oral lichenoid lesions related to dental restorative materials. *Br Dent J* 2005; 198: 361-366.
27. **Wong, L., Freeman, S.** Oral lichenoid lesion (OLL) and mercury in amalgam fillings. *Contact Dermatitis* 2003; 48: 74-79.
28. **Thornhill, M.H., Pemberton, M.N., Simmons, R.K., Theaker, E.D.** Amalgam contact hypersensitivity lesions and oral lichen planus. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2003; 95: 291-299.
29. **Laeijendecker, R., Dekker, S.K., Burger, P.M., Mulder, P.G., Van Joost, T., Neumann, M.H.** Oral lichen planus and allergy to dental amalgam restorations. *Arch Dermatol* 2004; 140: 1434-1438.
30. **Pigatto, P.D., Guzzi, G., Persichini, P., Barbadillo, S.** Recovery from mercury-induced burning mouth syndrome due to mercury allergy. *Dermatitis* 2004; 15: 75-77.
31. **Bates, M.N.** Mercury amalgam dental fillings: an epidemiological assessment. *Int J Hyg Environ Health* 2006; 209 (4): 309-316.
32. **Bellinger, D.C., Trachtenberg, F., Barregard, L., Tavares, M., Cernichiari, E., Daniel, D.** Neuropsychological and renal effects of dental amalgam in children. A randomized clinical trial. *J Am Med Assoc* 2006; 295: 1775-1783.
33. **Bates, M.N., Fawcett, J., Garrett, N., Curtess, T., Kjeilstrom, T.** Health effects of dental amalgam exposure: a retrospective cohort study. *Int J Epidemiol* 2004; 33: 894-902.
34. **Mutter, J., Curth, A., Naumann, J., Deth, R., Walach, H.** Does inorganic mercury play a role in Alzheimer's disease? A systematic review and an integrated molecular mechanism. *J Alzheimers Dis* 2010; 22 (2): 357-374.
35. **Casetta, I., Invernizzi, M., Granieri, E.** Multiple sclerosis and dental amalgam: case-control study in Ferrara, Italy. *Neuroepidemiology* 2001; 20 (2): 134-137.
36. **Aminzadeh, K.K., Etminan, M.** Dental amalgam and multiple sclerosis: a systematic review and meta-analysis. *J Publ Health Dent* 2007; 67 (1): 64-66.
37. **Kingman, A., Albers, J.W., Arezzo, J.C., Garabant, D.H., Michalek, J.E.** Amalgam exposure and neurological function. *Neurotoxicology* 2005; 26: 241-255.
38. **Lauterbach, M., *et al.*** Neurological outcomes in children with and without amalgam-related mercury exposure: seven years of longitudinal observations in a randomized trial. *J Am Dent Assoc* 2008; 39 (2): 138-145.
39. **Franzblau, A., *et al.*** Low-level mercury exposure and peripheral nerve function. *Neurotoxicology* 2012; 33 (3): 299-306.
40. **Silbergeld, E.K., Silva, I.A., Nyland, J.F.** Mercury and autoimmunity: implications for occupational and environmental health. *Toxicol Appl Pharmacol* 2005; 207 (Suppl. 2): 282-292.
41. **Garner, L.A.** Contact dermatitis to metals. *Dermatol Ther* 2004; 17: 321-327.
42. **Khamaysi, Z., Bergman, R., Weltfriend, S.** Positive patch test reactions to allergens of the dental series and the relation to clinical presentations. *Contact Dermatitis* 2006; 55: 216-218.
43. **Jones, L., Bunnell, J., Stillman, J.** A 30-year follow-up of residual effects on New Zealand school dental nurses from occupational mercury exposure. *Hum Exp Toxicol* 2007; 26: 367-374.
44. **Lindbohm, M.L., Ylöstalo, P., Sallmén, M.** Occupational exposures in dentistry and miscarriage. *Occup Environ Med* 2007; 64: 127-133.
45. **Factor-Litvak, P., Hasselgren, G., Jacobs, D., Begg, M., Kline, J., Geier, J., *et al.*** Mercury derived from dental amalgam and neuropsychologic function. *Environ Health Perspect* 2003; 111: 719-723.
46. **Lygre, G.B., Gjerdet, N.R., Björkman, I.** A follow-up study of patients with subjective symptoms related to dental materials. *Community Dent Oral Epidemiol* 2005; 33: 227-234.
47. **Jones, D.W.** Putting dental mercury pollution into perspective. *Br Dent J* 2004; 197 (4): 175-177.
48. **Chin, G., Chong, A., Kluczewska, A., Lau, A., Gorjy, S., Tennant, M.** The environmental effects of dental amalgam. *Aust Dent J* 2000; 45 (4): 246-249.
49. **Scientific Committee on Health and Environmental Risks (SCHER).** Preliminary Report on the Environmental Risks and Indirect Health Effects of Mercury in Dental Amalgam. November 2007.
50. **Condrin, A.K.** The use of CDA best management practices and amalgam separators to improve the management of dental wastewater. *J Calif Dent Assoc* 2004; 32 (7): 583-592.

51. **American Dental Association.** Best management practices for amalgam waste. In A–Z topics. Available from: www.ada.org/prof/resources/topics/amalgam_bmp.asp.
52. Amalgam in dental office wastewater. Addressing the issue. *J Am Dent Assoc* 2002; 133 (5): 585-589.
53. **Canadian Dental Association.** Dental amalgam waste protocol. 2005. Available from: http://www.cdaadc.ca/en/dental_profession/practising/amalgam_waste/index.asp.
54. **Hitz, M.** The environmental impact of dentistry. *J Can Dent Assoc* 2007; 73 (1): 59-62.
55. **Barron, T.** Mercury in our environment. *J Calif Dent Assoc* 2004; 32 (7): 556-563.
56. **European Commission DG Env, BIO Intelligence Service.** Study on the Potential for Reducing Mercury Pollution from Dental Amalgam and Batteries. 2012.
57. **Council of European Dentists (CED).** CED Resolution. Dental amalgam. November 2010.
58. **Council of European Dentists (CED).** CED Resolution. Responsible practice. November 2011.
59. **Climate and Pollution Agency.** Review of the Norwegian Experiences with the Phase-out of Dental Amalgam. Oslo, 2010.
60. **Jones, D.W.** A Scandinavian tragedy. *J B Dent Assoc* 2002; 204: 233-234.
61. **U.S. Food and Drug Administration.** Banning Mercury Amalgam. Available from: www.fda.gov/MedicalDevices/MedicalDevicesAdvisoryCommittee/DentalProductsPanel/UCM236379.pdf.
62. **U.S. Food and Drug Administration.** FDA News Release. 2009. Available from: www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2009/ucm173992.htm.
63. **World Health Organisation (WHO).** Future Use of Materials for Dental Restoration. Report of the meeting convened at WHO HQ, Geneva, Switzerland, November 16-17, 2009. 2010.
64. **Council of European Dentists (CED).** CED Response. BIOIS Draft Final Report. Study on the potential for reducing mercury pollution from dental amalgam and batteries. April 2012.
65. **British Dental Association.** BDA News Release. BDA urges action on potential amalgam ban. December 2012. Available from: www.bda.org.
66. **British Dental Association.** BDA News Release – BDA welcomes sensible treaty on Mercury use. January 2013. Available from: www.bda.org.

Impact of implantoplasty on strength of the implant-abutment complex

Chan, H.-L., Oh, W.-S., Ong, H.S., Fu, J.-H., Steigmann, M., Sierraalta, M., et al.

Purpose
Implantoplasty, a procedure that is done to smooth contaminated implant surfaces, has been used in the treatment of peri-implantitis. It reduces the implant diameter, which might compromise the implant's strength. This *in vitro* study was designed to evaluate the effect of implantoplasty on implant strength.

Materials and methods
A total of 32 tapered implants were used; half were 3.75mm in diameter (narrow) and the other half were 4.7mm in diameter (wide). All implants were connected to 20-degree angled abutments. The apical half of each implant was embedded in acrylic resin. Eight 3.75mm and eight 4.7mm diameter implants were randomly assigned to receive implantoplasty. The remaining implants did not receive implantoplasty (control group). Implantoplasty was performed with a series of diamond and polishing burs. The specimens were then loaded 30 degrees off axis in a universal testing machine until fracture failure occurred. Bending and fracture strength values were recorded and analysed statistically (α=0.05). The fractured surfaces were evaluated under a scanning electron microscope.

Results
All narrow implants failed by fracture at the implant platform. The mean bending strength of narrow implants was statistically significantly reduced by implantoplasty (511.4 ± 55.9N versus 613.9 ± 42.8N). Implantoplasty did not affect the strength of wide implants; fracture failures occurred at the abutment screw. The fracture mode was ductile and the crack growth was oblique in direction, indicating complex stress distribution and concentration under loading.
Conclusion: Within the limits of this study, implantoplasty appeared to weaken the strength of narrower implants. Therefore, this procedure should be performed with caution on narrower, freestanding implants that are subject to greater occlusal force (e.g., posterior regions). Validation of these results is needed for different implant systems.

Journal of Oral and Maxillofacial Implants 2013; 28 (6): 1530-1535.

The detection of vertical root fractures in root filled teeth with periapical radiographs and CBCT scans

Patel, S., Brady, E., Wilson, R.

Aim
To compare *ex vivo* the diagnostic accuracy of cone beam computed tomography (CBCT) with periapical radiography in detecting artificially prepared incomplete and complete vertical root fractures (VRFs) in the presence of a gutta-percha root filling in human teeth.

Methodology
The root canals of 20 extracted human premolar and molar teeth were radiographed and scanned with CBCT before a simulated VRF was induced (group 1). These teeth were radiographed and scanned with CBCT again after incomplete (group 2) and complete (group 3) VRFs were induced. A suitably sized gutta-percha point was inserted into the prepared root canal prior to each series of radiographs and CBCT scans being taken.

Results
There was no improvement in the detection of artificially created VRFs in root filled teeth using CBCT compared with periapical radiographs. The overall area under the curve (AUC) value of incomplete and complete VRF was 0.53 for periapical radiography and 0.45 for CBCT (P=0.034). The overall sensitivity of periapical radiography (0.05) was lower than CBCT (0.57) regardless of the extent of the VRF (P=0.027). Periapical radiographs (0.98) had a higher overall specificity than CBCT (0.34) (P=0.027).

Conclusions
Under the conditions of this *ex vivo* study, periapical radiographs and CBCT were not accurate in detecting the presence and absence of simulated VRF. The imaging artefacts caused by the gutta-percha root filling within the root canal most probably resulted in the overestimation of VRF with CBCT and also the overall inaccuracy of this system.

International Endodontic Journal 2013; 46 (12): 1140-1152.

Factors affecting treatment decisions and outcomes of root-resected molars: a nationwide study

Yuh, D.-Y., Cheng, G.-L., Chien, W.-C., Chung, C.-H., Lin, F.-G., Shieh, Y.-S., et al.

Background: Treatment of furcation-involved molars presents a clinical challenge. This study retrospectively investigates the demographic parameters affecting treatment decisions and outcomes of root-resected molars using a nationwide population-based dataset.

Methods: De-identified data from 471 eligible patients were obtained from a representative cohort composed of one million of Taiwan's population. Demographic factors that influence treatment decisions and outcomes of root-resected teeth were examined. Cox regression was performed to statistically analyse the factors.

Results: The overall survival rate for root-resected molars was 91.1%. The survival times of the extracted and surviving teeth were 303.0 ±

274.6 and 551.8 ± 327.2 days, respectively (P<0.001). The analysed patient-related factors, such as living district, urbanisation level, medical institution and monthly income, have remarkable influence on treatment decisions; however, there is no statistically significant difference in survival rate between root-resected molars receiving flap surgery and those that do not (P=0.504). After adjusting for other factors, patients aged >74 years have 3.33 times (hazard ratio = 3.33; 95% CI=1.04 to 10.66; P=0.043) higher rates of molar extraction than younger counterparts.

Conclusions: The overall survival rate of root-resected molars was satisfactory. Patients with advanced age (>74 years) had a higher risk of extraction occurrence on resected molars. Patient-related factors may influence the treatment decision of whether molars receive flap surgery. These findings suggest that demographic factors should be carefully evaluated before and after performing root-resection procedures because these factors may eventually impact the outcome of root-resected molars.

Journal of Periodontology 2013; 84 (11): 1528-1535.

Clinical and radiographic outcomes of the use of four dressing materials in pulpotomised primary molars: a randomised clinical trial with two-year follow-up

Fernández, C.C., Martínez, S.S., Jimeno, F.G., Lorente Rodríguez, A.I., Mercadé, M.

Background
Although multiple materials have been suggested for pulpotomised primary molars, there is no reliable evidence of the superiority of one particular type.

Aim
To compare the effectiveness of formocresol (FC), mineral trioxide aggregate (MTA), ferric sulphate, and sodium hypochlorite (NaOCl) as pulp dressing agents in primary molars after two years.

Design
One hundred primary molars requiring pulp treatment were allocated randomly to the control (FC) and experimental groups (MTA, ferric sulphate and NaOCl). Clinical and radiographic evaluations were performed at six, 12, 18, and 24 months. Statistical analysis using Fischer's exact test was performed to determine the significant differences between groups.

Results
In the FC and MTA groups, 100% of the available teeth were clinically successful at all follow-up appointments. In the NaOCl group, one clinical failure was found at 18 months, and two clinical failures in the ferric sulphate group were noted at 12 and 24 months, but no significant differences were found among the groups (P=0.41). No significant differences in radiographic success were found among all the groups at 24 months of follow-up (P=0.303).

Conclusions
No statistically significant differences among the four materials were found at 24 months, suggesting that NaOCl may be an appropriate substitute for FC.

International Journal of Paediatric Dentistry 2013; 23 (6): 400-407.

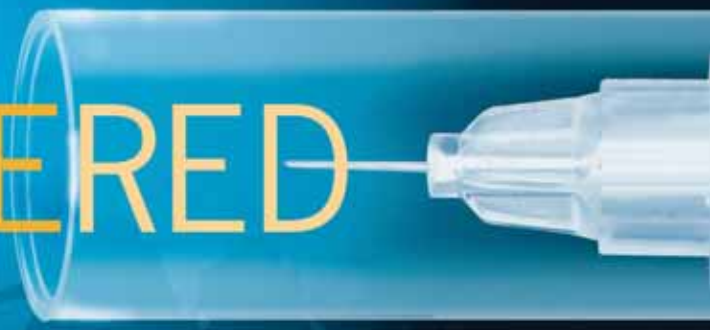
Quiz answers

(Questions on page 278)

1. In a B cycle steriliser a vacuum pump removes all the air out of the chamber, including the air in any lumens present. When the steam enters the chamber there is no air in the lumen to stop the steam entering the lumen and sterilising it. A Helix test is a long lumen and all the air has to be removed: the steam can then enter and change the colour of the ink on the indicator strip (obturator). In an N cycle machine the air is displaced by the steam entering the chamber and air is not removed from any lumens present.
2. Some S cycle autoclaves have a cycle that sterilises handpieces, and then a Helix test specifically designed for that model of steriliser must be used. Some S cycle autoclaves on the market do not sterilise handpieces and will fail a Helix test as they are not effective at sterilising lumens due to air still being present in the lumen.
3. No. It is unlikely that all the air would be removed from the lumen in the handpiece and so it cannot be sterilised.

NEW REGULATIONS ON NEEDLE INJURIES

GET COVERED



COMPLIANT WITH NEW REGULATIONS[1]!

ULTRA SAFETY PLUS
THE SAFE INJECTION SYSTEM.

As the world leader in dental pain control [2], 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.[3]

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

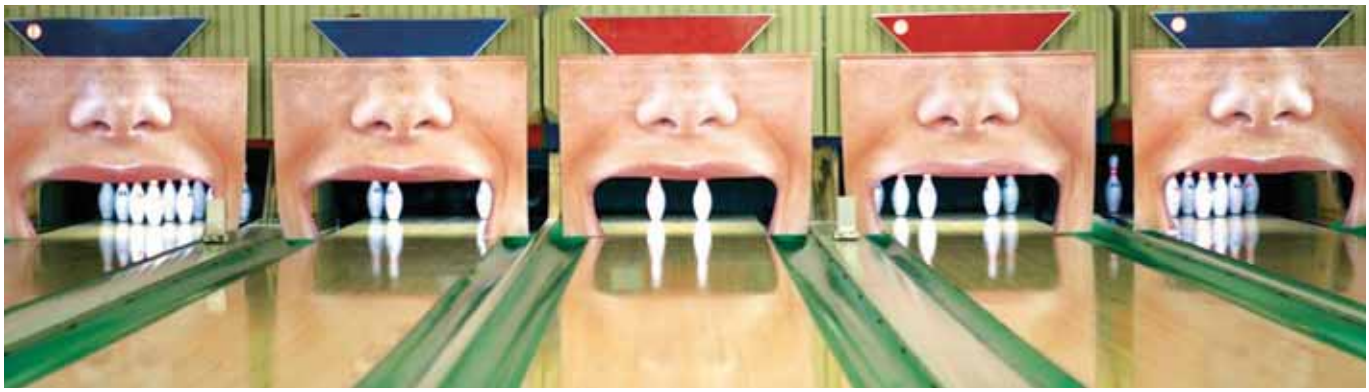
Ultra Safety Plus. Get Covered.

septodont

[1] Council Directive 2010/32/EU of 10 May 2010
[2] Septodont is the only company producing 500 million dental cartridges per year
[3] Source SDM data, YTD Q3 2012

Tel: +44 (0)1622 695520
www.septodont.co.uk
To arrange a demonstration contact
Gerry Lavery on: +44 (0)7836 255274

Time to get creative with your advertising



BRIAN EDLIN of Dental Protection offers an overview of the codes and regulations pertaining to advertising for dentists in Ireland.

Members of the public have become more discerning when choosing healthcare providers, and want to be able to conduct their own research to make sure the dentist they choose fits their individual preference. To do this successfully they need sufficient information about the dentist, not only in relation to experience and skills, but also to form a holistic view. Most regulatory bodies around the world have, at some time, regarded advertising as unprofessional. Indeed, some dentists have had their registration questioned as a result of such activity.

Adapting

Times have changed, and with pressure from consumer groups and competition authorities, as well as members of the profession, we have seen a general relaxation of the approach adopted by regulatory bodies towards practice promotion. There has also been a paradigm shift in the whole dental environment, with patients seeking elective as well as therapeutic treatments. Understandably, this provides patients and members of the public with an additional reason for getting to 'know' both the dentist and their practice, and the services provided, before making an appointment – even if they have come on the recommendation of an existing patient. The current economic climate and increasing competition has provided the catalyst for Irish dentists wishing to inform new, and existing, patients about their practice.

The law

There is an obligation on dentists who wish to market their services in Ireland to comply with the law as it applies to consumers, the guidance set out by the Advertising Standards Authority, and the codes of practice issued by the Dental Council in relation to ethical promotion of dental practices. Until a few years ago, the Dental Council exercised very tight control on how dentists could promote their practices, and although this has been relaxed to some extent, dentists still need to be aware of the restrictions. The regulatory framework on advertising is now being considered in relation to the new Dental Bill.

Codes

The Dental Council codes of practice relating to the promotion of dentistry in Ireland tend, to some extent, to dovetail with current legislation. Guidance documents on this topic can be accessed from the Dental Council's website. They are:

- The Code of Practice pertaining to Public Relations and Communications;
- The Code of Practice relating to Display of Private Fees in Dental Practices;
- The Code of Practice relating to Professional Behaviour and Ethical Conduct; and,
- The Code of Practice relating to Non-Surgical Cosmetic Procedures.

If a dentist fails to comply with or adhere to any of these codes, the Dental Council may institute disciplinary proceedings against them through their fitness to practise procedures.

The regulator

The Dental Council's view on advertising is intended to encourage dentists to improve patient awareness about the services they offer, and the prices they charge. The Council expects dentists to display details of their fees so that they are visible and comprehensible. Interestingly, the Dental Council encourages dentists to become involved in expounding the profession's views on dentistry through the media, but does not permit dentists to use magazines articles, or radio or television interviews, to promote their own practices in case it creates a professional advantage. Complaints that are made to the Dental Council about the way a dentist has marketed a practice rarely originate from members of the public, but from other dentists!

DPL's experience in Ireland, where we serve the vast majority of dentists, is that the Dental Council will often take a very sensible and pragmatic approach towards a dentist who inadvertently breaches the

Code of Practice on advertising for the first time, but makes it quite clear that a second offence will not be treated so leniently!
Dentists are strongly recommended to make themselves aware of the various codes of practice, and should not hesitate to seek advice from DPL or their indemnifier, either if they have difficulty in interpreting a particular regulation, or if they wish to seek advice before spending money on marketing their practice.

Drawing a line

It is perfectly acceptable for dentists to make members of the public aware of where they practise, as well as providing them with details of the various facilities they offer. Dentists should ensure that any promotion of their practice is likely to be seen as legal, decent and honest, as well as accurate in content. There should be no reference to any kind of 'pre-eminence'. In other words, the publicity should make no reference to the dentist being superior to their colleagues even if they genuinely believe that to be the case!
Any information that forms the content of an advertorial website should be factually correct and not written in a way that could be construed to mislead or to take advantage of uninformed or vulnerable patients in order to influence them to attend your practice. Over the past few years the Dental Council has relaxed its position on the size and content of dentists' nameplates. Dentists should, however, be sensitive to local planning regulations before considering advertising on a massive billboard just outside the front door of their practice.

Specialisation

Dentistry has evolved rapidly over the past few years, with more dentists obtaining postgraduate qualifications and developing expertise in the various specialties. We see an increasing number of these dentists establishing a reputation, which often results in an increased number of patients referrals from colleagues. Often these dentists will offer treatment involving implants, periodontology, endodontics and pain medicine. Currently in Ireland there are only two specialist lists in dentistry in Ireland: oral surgery and orthodontics. Unless a dentist is registered as a specialist oral surgeon or orthodontist with the Dental Council they cannot refer to themselves as specialists. Dentists must not imply that they have specialist skills or that they 'specialise' in any particular type of dentistry unless they are on one of the specialist lists. If, however, they only practise one particular aspect of dentistry in their practice, such as endodontics, then there is nothing to stop them stating in their promotional material and nameplate that their practice is 'limited to endodontics'.

Announcements

When it comes to displaying a nameplate outside a practice or designing practice stationery, the names of all the dentists practising there, together with their registrable qualifications, must be displayed. These should be the same qualifications as those that appear against their name in the Dentists Register. It is not acceptable to display qualifications or details of membership of associations or societies that do not appear in the Register. Practice owners should be aware that when a dentist leaves their practice their nameplate must be removed within a month. The Dental Council encourages the use of practice brochures and websites that can make patients aware of the facilities that are available, as well as providing important information about the practice. They should also contain details of how patients can access emergency treatment out of normal surgery hours.

Cosmetic issues

The Dental Council's Code of Practice relating to the use of non-surgical cosmetic procedures (the use of botulinum toxin and fillers) has recently been amended after going out to consultation. Dentists who carry out these procedures for cosmetic rather than therapeutic reasons should make themselves aware of the national guidance on such procedures. They are not considered to be the practice of dentistry by the Dental Council, but this doesn't mean that the Council has no interest in any dentist's involvement in them.
Dentists who wish to carry out cosmetic procedures using botulinum toxin are obliged to market these procedures separately to treatments that normally constitute the practice of dentistry. To use the internet, they need a separate website. Dentists must also display the Code of Practice prominently, so patients who are undergoing this type of treatment can read it before requesting treatment. As mentioned before, all advertisements must be legal, honest and decent. Any treatment offered should always be in patients' best interests.

Competition

The Competition Authority in their publication 'Competition in Professional Services – Dentists' (October 2007) stated that competition in dental services was restricted and hampered by an outdated system of regulation, resulting in consumers paying uncompetitive prices. This was addressed to some extent by the Dental Council who, soon after, published a new Code of Conduct pertaining to Public Relations and Communications in February 2008. Some would argue that the Dental Council has not taken things far enough and should align itself more closely with the guidance from the Advertising Standards Authority. Access to information is the only way that patients can develop an awareness of the training, experience and focus of interest of the dentist they choose to be treated by or referred to. Any such move, if it were to be supported by the new Dental Bill, must be in the patients' best interests.

Advice

Irish dental members who contact DPL's dento-legal advisers regularly ask what they can and can't do when it comes to advertising. We are very happy to assist any member who is considering placing an advert. In the space available, it is only possible to provide an overview of this subject. By focusing on some of the lesser known rules and regulations, it hopefully provides readers with a better understanding of what is currently acceptable.

Brian Edlin BDS is Head of Dental Services in Leeds with a special responsibility for dental members in Ireland.

Classified advert procedure

Please read these instructions prior to sending an advertisement. Below are the charges for placing an advertisement for both members and non-members. 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 January 10, 2014, 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**

Non-members must send in a cheque in advance with their advert. The maximum number of words for classified ads is 40.

Only if the advert is in excess of 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
- Unwanted/Second Hand Equipment for Sale

Classified adverts must not be of a commercial nature. All commercial adverts must be display advertisements, and these can be arranged by contacting Paul O'Grady at Think Media, Tel: 01 856 1166.

POSITIONS VACANT

Experienced associate required for a busy practice in Virginia, Co. Cavan (one hour from Dublin). Monday, Tuesday, Friday and Saturday. Computerised/orthodontist/hygienist/OPG/oral surgeon. Apply by email to info@virginiadentalsurgery.com.

Associate position, Belfast. A unique opportunity in Northern Ireland. The award-winning practice offers care including implants, orthodontics and sedation. Postgraduate training and CPD, management support and unlimited development. Please contact Anne Crawley including CV, Email: acrawley@wearedentalexcellence.com.

Full-time associate required for busy Dublin city centre practice. Experience essential. OPG, fully computerised, etc. Send CVs with references to dentaldublin@gmail.com.

West of Ireland. Associate needed to join busy periodontal practice. Excellent income. High profile location. Practice expansion possible. Fully computerised. Excellent equipment/staff. Flexible options including self-employed. Tel: 086-807 5273, or Email: niall@innovativedental.com.

Experienced associate required for a busy Dublin city centre practice. Three to four days per week available. Modern surgery and equipment, excellent support staff. Email CVs to annemariemoran@live.co.uk.

Enthusiastic associate required for busy long-established family-centred practice in Dublin. PRSI/private only. CV essential. Post to commence ASAP. Email: dentistsearchd15@gmail.com.

Associate wanted. Hardworking, enthusiastic associate required for busy thriving practice in Co. Tipperary. Minimum five years' experience. Computerised practice, digital x-ray, modern fully-equipped surgery with excellent support team. Contact Linda, Tel: 087-228 1282, or Email: lindaryan001@gmail.com.

Galway. Associate to take over from retiree. Full-time book in modern, purpose-built multi-surgery practice. Tel: 086-854 5656, or Email: charles@irishdentist.com.

Dentist required for short-term contract from mid-November for sessional work (all disciplines). Potential to become permanent. Saturday mornings included. Busy multiple surgery practice in Newbridge. Experience essential. Apply with CV by email only to dentalcolleagues@gmail.com.

Part-time dentist required for busy practice in Trim, 30 minutes from Dublin. Private and GMS (panel number will be required). Apply by email with CV to navangatedental@gmail.com.

Limerick. Experienced (minimum five years), ambitious dentist required for high-profile modern clinic. Full-time position, extremely busy book, long-established practice, private only. Computerised OPG/new equipment/excellent staff. Self-employed contract/generous terms. Email: limerickdentaljob@gmail.com.

Exciting full-time opportunity available for motivated dentist in Dublin 4. Fully computerised. Apply with CV to andrewcox204@gmail.com.

Part-time motivated dentist required for practice in Navan. Willing to build and develop book. An interest in orthodontics would be an advantage. Tel: 087-923 6274, or Email: dentalpractice39@gmail.com.

Very busy three-day position for experienced general dentist in Dublin 12. Mixed private/medical card. Well-equipped, modern, computerised practice. Specialist practice on site. Must have strong interest/skillset in adhesive dentistry as well as prevention! Email: maher.kemmoona@web.de.

Exciting and unique full-time opportunity to join a local practice in Dublin 4 working in partnership with a prestigious organisation. Min five years' experience required. Email: andrewcox204@gmail.com.

Experienced dental surgeon required to manage a busy Cork practice. Three chairs, modern equipment, fully digital OPG, computerised administration, excellent laboratory background. Full-time, long-term. No medical cards. Associate is also wanted. Reply with CV and references: gorbejudit@hotmail.com.

Full-time dentist required South West Dublin to be self-employed. Modern digital practice. Also, part-time dentist in same practice for two days a week. Please forward CVs to wmunroe@eircom.net.

Dentist required to replace existing colleague in purpose-built, modern, friendly practice in Lisnaskea, Co. Fermanagh. Full list immediately available. 50% private patients with opportunity to grow. Tel: 0044-079-7004 8087, or Email: brendanmckeogh@mac.com.

Dentist specialising in endodontics wanted for private practice clinic in Doha, Qatar. Long-established and family-oriented practice. Must be willing to relocate to Qatar, but attractive package on offer to do so. All information from me, Dr M Alsaid, Email: mss-medical@hotmail.com.

Dental locum required in Castleknock for two days a week for the first two weeks in January. Please Tel: 086-821-8898 evenings and weekends, or Email: kenbyrne6@hotmail.com.

Part-time locum dentist – Portadown. A unique opportunity in one of the best presented practices in Northern Ireland. Unlimited development opportunities and long-term position for the right candidate. Cover to start December 2013. Contact Anne Crawley with CV, Email: acrawley@wearedentalexcellence.com.

Limerick City. Locum dentist to cover maternity leave December 2013 for three months. Predominantly private, good staff, fully computerised, OPG, Cerec omnicam. Opportuntity to stay on for a further three months part time. Must be will to work evenings and Saturdays. Email: annette_odonovan@hotmail.com.

A private dental centre in Qatar is offering the following full time positions: 1. endodontist specialist 2. dental nurses 3. oral hygienist 4. secretary receptionist 5. secretary accountant – all for full-time positions in Qatar. Tel: 0097 455 558 076, or Email: mss-nha@hotmail.com.

Visiting endodontist required for sessional work on a fee-sharing basis in a busy multiple practice in Newbridge. Apply with CV to dentalcolleagues@gmail.com.

Orthodontist required to replace departing colleague in well-established Dublin 3 dental practice. Staff experienced in orthodontics. Potential available to develop position. Immediate start. For details please contact Margaret, Tel: 01-833 8985, or Email: reception@fairviewdentalclinic.ie.

Orthodontist required in very busy orthodontic practice in North County Dublin. Two days per week. Digital OPG/ceph. Please email for further details: dentistcodublin@gmail.com.

Experienced team available to visit your practice and provide anti-wrinkle treatments in a professional manner. We have our own insurance and would consider percentage or room rental offers. Our team includes a dental surgeon and clinical nurse specialist (MSc RNP). Tel: 087-978 3103, or Email: antiwrinkle1234 @gmail.com.

Part-time hygienist required for progressive, busy practice in New Ross for two-day week (Thursday and Friday) to replace departing colleague. Positive attitude, good interpersonal and motivational skills essential. Replies to dillondental2@gmail.com.

Qualified dental nurse required for general practice in D18 for three days – Monday, Tuesday and Thursday. Computer skills preferred. Please email CV to admin@cdpractice.com.

Dental nurse required in busy orthodontic practice in Cork city centre. Experience desirable but not essential. Please email CV to info@corkclinicorthodontics.com.

Qualified dental nurse required for Galway City. Dental nursing qualifications essential. Full time position Monday to Friday (no weekend work). Please send CV to kavanaghcreanorthodontics@gmail.com.

Busy specialist dental practice requires friendly, enthusiastic, motivated dental receptionist to join their team. Please send your CV to mags@ncdental.ie.

PREMISES WANTED

I am looking for a dental surgery to rent in Dublin city centre – Dublin 1 or Dublin 2. To start lease in January 2014. Email: cropalat@hotmail.com.

EQUIPMENT FOR SALE/TO LET

For sale – Dublin. Full surgery equipment/instruments – one lot: chair, compressor, suction motor, licenced intra-oral x-ray, rotary filing system, RA system with attachments for nitrous oxide oxygen cylinders. Reasonable offer secures. Available immediately. Tel: 086-807 5273, or Email: niall@innovativedental.com.

PREMISES FOR SALE/TO LET

Dental surgery to let on a sessional basis in specialist dental practice in Cork city centre. Contact corkdentaljobs@gmail.com.

Unique opportunity. Private practice sale – giveaway price. Long-established leasehold, special interests in preventive and cosmetic dentistry, plus functional arch development orthodontics. Located in the north-east, one hour from Dublin, expansion possible, retiring practitioner will help with takeover. Email: nopain@mytooth.com.

Single chair practice for sale 5km from Dublin city centre. Low-cost, low stress with good mix of patients. Over 50 years established, fully functional but some TLC needed. Please text or Tel: 087-337 9403 for details, or Email: terof2001@yahoo.com.

Dental practice sales throughout Ireland. Leasehold, freehold, single and multi-surgery practices. Email us for a full list: Charles@irishdentist.com.

Selling your practice. We are retained by dentists with sanctioned funding. Contact me for a confidential discussion. Tel: 086-854 5656, or Email: Charles@irishdentist.com.

Christmas closing time

The offices of the IDA will be closed from Monday, December 23, 2013, and will reopen on Thursday, January 2, 2014. May we wish all our members and their families a very Happy Christmas.

JANUARY

Munster Branch Meeting – Preventive dental care for children
January 15 *Maryborough Hotel, Douglas, Cork*
Meeting at 8.00pm. Speaker is Dr Jennifer McCafferty.

Hands on course: Cone beam imaging IDA MEMBERS ONLY
January 18 *IDA House, Dublin*

Hands-on course: Crown lengthening IDA MEMBERS ONLY
January 25 *IDA House, Dublin*

Joint Irish Endodontic Society/Metropolitan Branch Meeting
January 30 *Hilton Hotel, Charlemont Place, Dublin 2*
Speakers are Drs Willy Pertot and Luc van der Sluis.

Irish Endodontic Society – Annual Scientific Meeting
January 30 and 31 *Hilton Hotel, Charlemont Place, Dublin 2*
Thursday evening in conjunction with the IDA Metro Branch
Friday morning – The Future of Endodontics

FEBRUARY

IDA MEMBERS ONLY

IDA Annual Practice Management Seminar
February 1Convention Centre, Dublin
This year's seminar will focus on how to get patients back into the dental clinics and looking after their dental care.

Metropolitan Branch Annual Scientific Meeting
February 7, Hilton Hotel, Charlemont Place, Dublin 2

Hands-on courses, lectures and trade show. Topics will include endodontics, medical emergencies and posterior composites.

Hands-on course: Cone beam imaging IDA MEMBERS ONLY
Feburary 8 *Lyrath Hotel, Kilenny*

South Eastern Branch – Annual Scientific Meeting
February 21 *Tower Hotel, Waterford*

Hands-on course: Clinical photography IDA MEMBERS ONLY
22ndFebruary 22 *IDA House, Dublin*

CPD Roadshow – Cork IDA MEMBERS ONLY
February 22 *Rochestown Park Hotel, 10.00am to 1.00pm*

North Munster IDA – Branch Meeting
February 25 *The Strand Hotel, Limerick, 8.00pm*
Speaker is Dr Christine McCreary, Consultant in Oral Medicine, UCC.

Irish Endodontic Society Meeting IDA MEMBERS ONLY
February 27 Small Lecture Theatre, Dublin Dental Hospital, 7.30pm
Case presentation night.

MARCH

CPD Roadshow – Galway IDA MEMBERS ONLY
March 1 *Clayton Hotel, 10.00am to 1.00pm.*

Metropolitan Branch IDA – Branch Meeting
March 6 *Hilton Hotel, Charlemont Place, Dublin 2*
Speakers are Drs John Hogan and Katherine Condren.

CPD Roadshow – Limerick IDA MEMBERS ONLY
March 8 *Strand Hotel, 10.00am to 1.00pm.*

North Munster Branch IDA – Branch Meeting
March 13 *The Strand Hotel, Limerick, 8.00pm*
Speaker is Professor Robert McConnell, Consultant in Restorative Dentistry, Queen's University, Belfast.

Irish Academy of Aesthetic Dentistry (IAAD) – Meeting
March 14 *Radisson Royal Blu Hotel, Golden Lane, Dublin*
Speaker is Dr Palo Malo on 'Total rehabilitation of the edentulous jaw, surgical and prosthetic protocols using the All-On-4 Malo Clinic treatment concept'.

Irish Endodontic Society Meeting – Recent Graduates Night
March 27 Small Lecture Theatre, Dublin Dental Hospital, 7.30pm

CPD Roadshow – Sligo IDA MEMBERS ONLY
March 29 *Radisson Hotel, 10.00am to 1.00pm*

APRIL

CPD Roadshow – Dublin IDA MEMBERS ONLY
April 5 *Radisson Dublin Airport Hotel, 10.00am to 1.00pm*

CPD Roadshow – Kilkenny IDA MEMBERS ONLY
April 12 *Lyrath House Hotel, 10.00am to 1.00pm*

North Munster Branch IDA – AGM and Meeting IDA MEMBERS ONLY
April 22 *The Strand Hotel, Limerick, 8.00pm*
AGM followed by speaker Dr Eoin Mullane BDS MS Cert. Endo on 'Endodontics: Use and Abuse of Antibiotics'.

MAY

IDA Annual Conference 2014
May 15-17 *Lyrath House Hotel, Kilkenny*

DeCare Dental

INSURING IRISH SMILES since 2004

Check out our new direct to consumer dental insurance plans at www.decaredental.ie

new

1 COMPLETE
SENSITIVITY TOOTHPASTE

SPECIALLY DESIGNED WITH
7 BENEFITS*

Powered by **NovaMin®**

*With twice daily brushing

SENSODYNE®