Volume 61 Number 4
August/September 2015

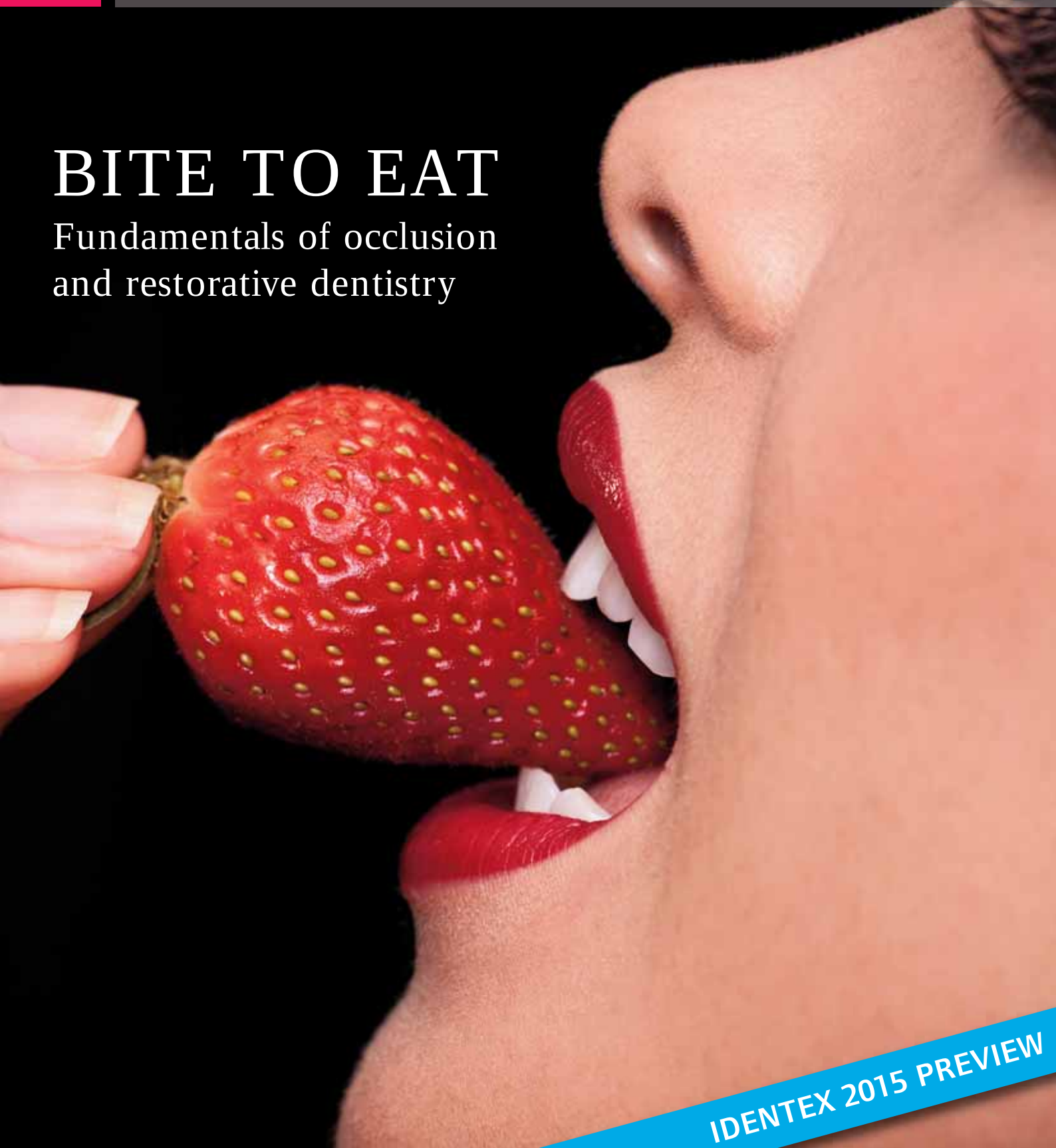
JIDA

Journal of the Irish Dental Association
Iris Cumainn Déadach na hÉireann

IDA
irish dental association

BITE TO EAT

Fundamentals of occlusion and restorative dentistry



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

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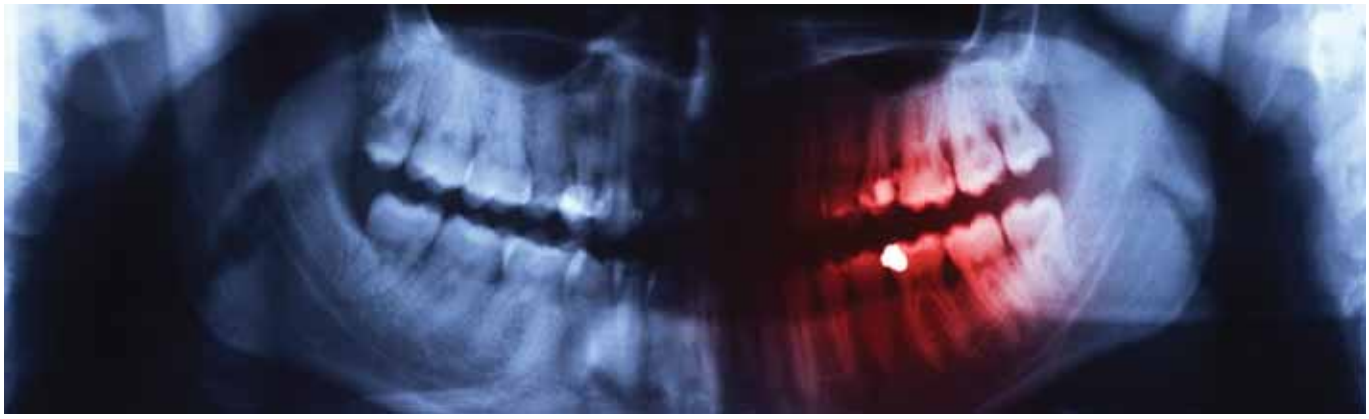
Prof. Leo F. A. Stassen
Honorary Editor



Pain, peace and practitioner health

This *Journal* provides evidence of patients' pain, interviews a dentist who helped the peace process, reminds us to mind our own health, and previews Identex 2015.

A study of the pattern and severity of odontogenic infections in patients presenting to an acute general hospital by Dr Conor M. Bowe and colleagues is published in this edition. It compares the periods before and after the cuts to access to primary dental care were made by the Department of Health. The study shows that there was an increased number of patients presenting with such infections after the changes in access to treatment, and that these patients showed an increased complexity and severity of infection. Dental professionals reading this will say – we didn't need a study; we predicted that the cuts would produce such an outcome. Less treatment is bound to cause more pain. Nevertheless, this Government and most politicians make a great virtue out of producing policy based on evidence of need. Well now we have the evidence to back up the professional opinion, and our Association should and will use it to maximum effect.

The clinical relevance of dental occlusion is well established: a sound knowledge of dental occlusion is important in order to improve dental treatment outcome and achieve a long-lasting restoration. We are, therefore, grateful to Dr Abdulhadi Warreth and his colleagues for their paper on fundamentals of occlusion and restorative dentistry, part one of which is published in this edition, with the second part to come in the next edition. It is a really useful overview.

Our clinical feature (from Dr Eoin Mullane) and our practice management article (from Dr Susan Willatt) both address the issue of broken instruments in endodontic work. Dr Mullane provides us with invaluable tips to prevent instrument separation, while Dr Willatt reviews the procedure to handle such an adverse event with a patient.

A humble and brave man

This island recently suffered 30 years of cruel and appalling violence. Getting people who hated each other into dialogue took courage on the part of many people. One man who played a vital but low-profile role in that process is a soft spoken, humble dentist from Belfast. Dr Martin McAleese trained in Dublin and practised in Bessbrook and Crossmaglen. For the first 20 years of his life, he experienced daily verbal abuse and in 1969 his family were forced out of their home. Not surprisingly, he set out to forget that first 20 years but, as you will read in this edition of the *Journal*, he ended up using his intimate knowledge of east Belfast to open dialogue with those very people who had abused him. His perspective on dentistry is also interesting because he had practised accountancy before joining our profession. It's a compelling story.

Physician heal thyself

The Sick Doctors Scheme was well known among the medical profession. It has been relaunched to cater for a much wider group of healthcare professionals, including dentists. Chief Executive of the Association, Fintan Hourihan, has been closely involved in the development of the new service, entitled The Practitioner Health Matters Programme. The Clinical Lead of the new service, Dr Íde DeLargy, is interviewed in this edition and her words make for a warning to all of us. Mental health and substance misuse issues affect a greater number of us than we might think and we need to pay attention to those issues in ourselves and in our colleagues – and then need to know that discreet and professional help is available.

Identex and the IDA

In other contexts, we have said that dialogue is good. The continuing co-operation between the Irish Dental Trade Association and the Irish Dental Association is good news for everyone. We have a symbiotic relationship. We need each other and we rely upon each other. Identex in September will be a fantastic event and will include the IDA Autumn Programme – attending it will be time well spent. This edition contains an excellent preview to give you a flavour of what to expect.

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Dr Anne Twomey
IDA President

Good governance

While we can all be justly proud about the fact that the Association boasts a record level of membership and our finances are in a reasonably healthy state, there can never be any room for complacency.

Earlier in the year we commissioned Better Boards to review governance arrangements within the Association and the Irish Dental Union.

This has been a very worthwhile exercise and I am pleased to report that they have given us a positive assessment and go on to say that "nothing emerged in the review that would currently give rise for any concern". They add that: "With the desire to undertake best practice, there are some recommendations that, if implemented, would allow the IDA/IDU to reach that standard".

They also state that: "The strengths of the current governance practice include the governance structure of the Council and Board, with appropriate delegation underpinning efficiency while maintaining representation. The commitment and dedication of the Officers and members of the Council is a key strength. The working relationship between the Board and the CEO and staff is also a strength, as it underpins a good working relationship while maintaining the appropriate oversight and performance management".

The Better Boards report followed extensive research, including interviews with key volunteers and staff in the Association, and encompassed a membership survey and a benchmarking of governance arrangements with comparable professional representative bodies. The report has also allowed us to identify areas where further improvements can be made. I am pleased that a sub-committee comprising representatives of the Board and Council has met recently to flesh out ideas that emerged from the review, and I expect that we will see proposals presented to the Board and Council in September.

Ultimately, we are aware that corporate governance is not a static exercise and that there is a need to continuously review our structures and how we do business. It has been a very worthwhile initiative and the endorsement of governance experts has been very reassuring. We are all committed to taking the necessary steps to reach best practice standards in all aspects of our governance.

Sugar tax

Readers may have noticed the emerging debate in the UK around the desirability of a sugar tax in recent times. This is an issue that has surfaced intermittently here in Ireland also. As an Association we have taken a fairly agnostic view on this issue and it is one that interests me personally very much. We are committed to producing a policy paper on this topic, but it is already apparent that we need to look at this in the broadest sense and also to look at issues such as food labelling, the impact of hidden sugars, and also the role dentists have to play in terms of general health promotion and the prevention of oral health difficulties, which are intrinsically linked with the overall health of the population.

Supreme Court case

As I prepare this message, the Union is awaiting a direction from the Supreme Court on a hearing of the appeal of the Reid and Turner case. Members will be aware that the Union committed extensive funds to supporting this case, which arose from the HSE's decision to unilaterally breach the DTSS contract in 2009. This rendered untold damage to the DTSS, and more particularly to our patients, who no longer enjoy the level of access to dental treatments that prevailed previously. The Union is determined to ensure that our members' contractual rights are vindicated and we will continue to insist to the HSE that they engage with us in an orderly manner and they respect the primacy of contracts, which dentists sign freely and which they expect the HSE to discharge in full.

General Election

We may be approaching the silly season where speculation is the order of the day and this extends very much to the political arena and the ongoing discussion as to when a general election may be called. As an Association, we worked closely with the Irish Medical Organisation and the Irish Pharmacy Union prior to the last general election, and we are making plans for similar co-operation in the coming months prior to a general election. In addition, we are preparing our own campaign, enlisting the help of members at local and regional level, in addition to our engagement with parties and politicians at a national level.

There is clear evidence showing that there is a relationship between the extent to which representative bodies engage in political campaigning and the consequences as regards decision making post the election. We have to maximise all our resources to ensure that the voice of dentistry is heard and that oral health is pushed higher up the agenda.

We firmly believe that it is not good enough to curse the darkness but actually we must seek to participate in advocating for better oral health and for our patients. This can only happen with the involvement of members in every parish and community.

Letters to the editor

Dear Editor,

We wish to express our condemnation of the Irish Government's failure to honour the agreement which it had with the women who were resident in Magdalen laundries and similar institutions. In correspondence received from the PCRS dated June 29, 2015, dentists who operate the DTSS were asked to co-operate with the Government in its failure.

As background, the women who were survivors of Magdalen laundries traded their right to pursue the State for compensation for the injustices which they suffered in their youth for a redress scheme including a healthcare package, which would be the same as that received by HAA cardholders. On February 19, 2013, the Taoiseach made a public apology to these women on behalf of the State.

In recent weeks dentists have been informed that these survivors of State abuse are being given a 'card' that identifies them as 'Magdalen' survivors for life and with this card they are entitled to the limited and incomplete treatment that the DTSS provides for most medical card holders. It is believed that more than 90% of these women who live in the State already have a medical card.

This 'compensation' or 'redress' pales into insignificance when compared to the redress scheme provided for the survivors of institutional abuse through CaraNua. These survivors have all their dental treatment needs catered for and are allowed to maintain the dignity of not having to disclose the abuse and neglect visited upon them by the State in order to obtain dental treatment. Neither is their treatment restricted and subject to the bureaucratic indignity which the DTSS has the potential to do.

I would urge the Council of the Irish Dental Association to publicly disassociate itself from this act by the Government and to speak out publicly on behalf of its members who do not accept the injustice we are expected to support.

Yours etc.

Dr Padraig O'Reachtagain, Dr Maurice Quirke, Dr Desmond Kennedy

EDITOR'S NOTE: Since receipt of this letter, Minister for Primary Care, Social Care and Mental Health Kathleen Lynch TD has requested that the HSE reissue these cards after concerns from a number of sources that they unnecessarily identified the women concerned. It is understood that new, more anonymised cards, will be issued shortly.

Dear Sir,

I would like to bring your attention to the substantial contribution dental hygienist-therapists could make to dental care.

As we are aware, all the recent cutbacks in dental services are having a devastating impact on patients and will cost in the long run. As we struggle to meet our nation's unmet health needs, and look for solutions to bolster our healthcare workforce, dental hygienist-therapists offer a tangible and proven way to deliver affordable dental care.

Dental hygienist-therapists are well established professionals who work as part of the dental team. Dental hygienist-therapists (not to be confused with ortho-therapists) receive 27 months of intense training to provide preventive oral healthcare and commonly needed services such as fillings and deciduous extractions. They work under the general supervision of an off-site dentist who pre-approves the procedures they perform. In this way, dental therapists can provide more routine oral healthcare services while referring more complex services to their supervising dentist, thus extending the reach of the entire dental care team.

Further information on the dental therapy scope of practice is available from https://www.gdc-uk.org/Newsandpublications/Publications/Publications/Standards%20for%20the%20Dental%20Team.pdf.

We currently have a number of dually qualified dental hygienist-therapists who trained in the UK and have returned to Ireland, all enthusiastic to have therapy considered in the hope that our skills may finally be recognised and put to good use. I feel that we could offer so much from the public point of view and would really appreciate a chance to prove how much we can offer. Dental therapists could play a major role in healthcare settings in treating children, the elderly and patients with special needs in a preventive and restorative role.

In summary, dental hygienist-therapists offer the opportunity to enhance the dental workforce and bring quality, affordable dental care to every community. Research has documented that utilising dental therapists is a cost-effective method of providing quality oral healthcare. Adding dental therapists to the healthcare team would be a significant strategy for improving access to care for children and adults, while reducing oral health disparities.

Yours sincerely

Jeannine Byrne, qualified dental hygienist-therapist
Skerries, Co. Dublin. jeannine.byrne@hotmail.com

Dental nurses pursuing excellence

The Irish Dental Nurses Association (IDNA) is a voluntary organisation that aims to promote, educate and develop dental nurses in Ireland. The Executive Committee is made up of a group of dental nurse volunteers who work tirelessly on behalf of the profession, to not only raise the profile of dental nurses as a whole, but also to encourage all dental nurses to gain formal qualifications, which in turn raises the standard of patient care delivered to the general public.

As the dental community will already be aware, there is no regulation of the dental nursing profession at present in Ireland; the long-awaited Dental Act is expected to introduce this regulation. In order to meet requirements that may come out of this much sought after development, and in keeping with an ethos of promoting continuing education, the IDNA provides a very successful ongoing scientific lecture series. These lectures are free of charge and open to all dental team members. The lectures count as verifiable CPD from the Dental Council and dentists, dental hygienists and dental technicians have all attended.

For further details on the IDNA and how your dental nurse colleagues might become members of the Association, check out the IDNA website – www.idna.ie – send an email via contact@idna.ie, or telephone 087-676 7500. Follow the IDNA on Twitter @IDNA Ireland.

Presidential dinner

Past Presidents of the Metro Branch gathered recently at the Branch's annual dinner. Back row (from left): Drs Colm Curneen; Adrian Loomes; George Loomes; Dermot Kavanagh; Conor McAlister; Joe Houlihan; Ray Sullivan; Gerry Owens; and, Theo Hanley. Front row (from left): Drs Des Fortune; John McAlister (RIP); Alva Hope-Ross; Michael Lavin; Laura Houlihan; Lynda Elliott; Declan Corcoran; Brian Kavanagh; and, Barry Harrington.

HMI Leaders Award for Dr Alison Dougall

The winner of the HMI Leaders Award 2015 is Dr Alison Dougall of the Dublin Dental University Hospital. The title of Alison's winning project is 'Promoting improved access to dental care for people living with haemophilia in Ireland and encouraging a culture of oral health promotion within the teams that treat them'.

Alison received her award on July 7, 2015, following presentations by the seven finalists to the National Judging Panel. Each finalist demonstrated commitment and passion for their project, which provided a wonderful learning opportunity for those in attendance.

It was a wonderful afternoon of celebration of some of the projects and research that are taking place in our health system and a positive example of some of the initiatives being implemented, which are bringing real and transformative change.

Dr Alison Dougall receiving her HMI Leaders Award from Leo Kearns, National Lead Transformation and Change, Office of the Director General, HSE.

Postgraduate Diploma in Conscious Sedation in Dentistry

The Dublin Dental University Hospital (DDUH) is inviting applications to the Postgraduate Diploma in Conscious Sedation in Dentistry, to commence in January 2016 for an 18-month course. The course is aimed at primary care dental practitioners providing support for those patients with dental anxiety and undertaking dentistry in a safe, effective and anxiety-free manner. It also aims to provide a recognised education and training programme that will equip dentists with the knowledge, skills and experience to safely and independently use conscious sedation techniques in their clinics. The Postgraduate Diploma is awarded by the University of Dublin, Trinity College, and is a registerable qualification with the Dental Council. The course will involve attendance for 11 didactic days and a minimum of 20 clinical, hands-on sessions in the DDUH or an associated hospital over an 18-month period. Applicants must have a dental qualification and be registered by the Dental Council of Ireland. As a prerequisite for acceptance on the course, students must provide evidence of satisfactory seroconversion for protection against Hepatitis B and C. Garda vetting will be required. Applicants will need to include an additional 300-word statement indicating why they wish to undertake the course.

Further details may be obtained via our website – www.dentalhospital.ie – or www.tcd.ie/graduatestudies. Applications to the course can only be made online by logging onto http://www.mytcd.ie with a closing date of August 31, 2015. Interviews will be held in the Dublin Dental University Hospital in early October. Please address any enquiries to Ms Catherine Creagh, Course Administrator, Tel: 01-612 7354, or Email: catherine.creagh@dental.tcd.ie.

Book review: *Orthodontics for the face*

Dr Dan Counihan BDS FDS FFD MOrth

Self-published, 2014 | Hardback; 414pp | Available from www.orthodonticsfortheface.com.

This is some book and a must read for all dental students, aspiring orthodontists, specialist orthodontists, and oral/maxillofacial surgeons like myself. It is an extraordinary, well-illustrated book, showing cases from the more simple to the very complicated, highlighting the problems faced and, importantly, reflecting many years of training and experience, with tips on how to get yourself 'out of jail'. Dr Counihan's approach is simple, rational and presented as a story about his patients, about whom he is obviously very caring and dedicated. He highlights the importance of the whole face, the patient, the occlusion and oral healthcare. This is a book based on personal opinion and, although well referenced, on his preferences and attitudes. It shows the importance of working with your technician and having good communications. I commend his attempts to maintain teeth, provide orthodontics on a non-extraction basis and, importantly, deal with the problems of retention, missing canines and the dental/orthodontically controversial congenitally absent lateral incisor.

My only criticisms are minor. There is no real discussion about the asymmetric case, which is a big problem in our Irish population. There is no real discussion about orthognathic/orthodontic cases and the importance of working together. I agree with the orthodontist deciding the final bite in conjunction with the surgeon, but the final decision on actual moves (splints) is a joint decision/collaboration between the orthodontist and the surgeon. I commend this book and congratulations to Dan on a lifetime's collection of patients, his meticulous records and his obvious dedication to continuous learning and peer review. I wish that I had had the opportunity to work more closely with him.

Prof. Leo Stassen, Professor/Chair of Oral and Maxillofacial Surgery, National Maxillofacial Unit, St James's Hospital.

SCD and WDF

The World Dental Forum (WDF) is a global initiative organised by a global group of dental laboratories, taking place over three days in Hong Kong from October 20-22 next. The forum presents a unique opportunity to hear from a range of highly-regarded speakers. Southern Cross Dental has announced that they will be facilitating the attendance of Irish dentists at the WDF. "We are excited to facilitate the attendance of Irish dentists for what will certainly be a once-in-a-lifetime experience," says David Reaney, Managing Director, Southern Cross Dental. Over two days, delegates will have the opportunity to listen to thirteen international experts. "The educational component of the Forum is world class and the city of Hong Kong is a superb destination, the perfect location for a conference of this calibre," says David Reaney.

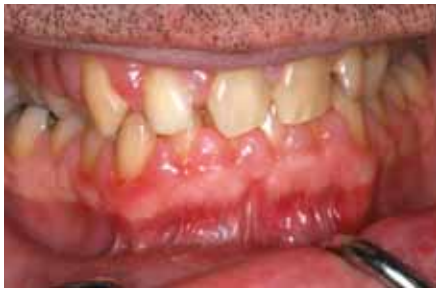

FIGURE 1: Mild hyperplasia – mouth breather.

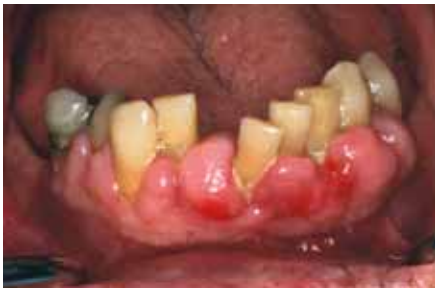

FIGURE 3: Severe hyperplasia – anticonvulsant.

FIGURE 2: Severe hyperplasia – calcium channel blocker

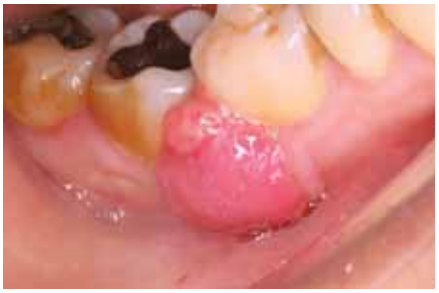

FIGURE 4: Pyogenic granuloma.

Quiz

Submitted by Donna Paton

Photos by Dr Lee Kin ©

Answers on page 210

Commonly, gingival hyperplasia can be attributed to poor oral hygiene, hormonal changes such as puberty and pregnancy, and drug-induced side effects of medications such as phenytoin, cyclosporine and calcium channel blockers.

However, gingival enlargement can often be mistakenly overlooked and can be a sign of a more serious underlying systemic disease.

If, on examination, the patient reports no associated medical history, what signs/symptoms might alert you that something more sinister could be wrong?

Mouth Cancer Awareness Day 2015

Mouth Cancer Awareness Day 2015 will take place this year on Wednesday, September 16.

Mouth Cancer Awareness Day has been a fantastic success since its inception in 2010, with over 20,000 patients availing of free mouth cancer exams and 26 cancers being detected as a direct result of the day.

This year the format of Mouth Cancer Awareness Day is slightly different. We are not asking dentists to offer free mouth cancer exams on the day, or indeed to set aside a specified period of time to offer free exams. All we ask is that you inform every patient that comes to your practice on Wednesday September 16, for any treatment, that it is Mouth Cancer Awareness Day. We also ask that you do a mouth cancer exam on each patient and tell them that you are doing this.

Patient information for your surgery on mouth cancer is available from the Irish Cancer Society – www.cancer.ie.

You don't have to register this year to take part; however, the one thing we do ask is that you let us know how many patients you saw in your practice on the day, Wednesday September 16. This form can be filled out online and will only take a few minutes to complete.

So be sure to give your patients a mouth cancer exam on September 16, and let them know that it's Mouth Cancer Awareness Day.

Joe Moloney Award

Dr Eanna Falvey was this year's recipient of the Dr Joe Moloney Award for best lecturer/presenter at the IDA Annual Conference in Cork. He is pictured receiving his award from IDA President Dr Anne Twomey (right) and Dr Mairead Harding of the Dental Health Foundation.

2015 saw a revamp of the Dr Joe Moloney Award at our Annual Conference. This annual award, kindly sponsored by the Dental Health Foundation, was awarded to the outstanding Irish presenter/lecturer at our Annual Conference in Cork as chosen by the conference delegates. Every delegate had the opportunity to nominate their chosen lecturer over the three-day event.

The overall winner of the award was Dr Eanna Falvey, who addressed delegates on the Friday on the subject matter of 'Head and facial trauma in sport'. Eanna, who is a medical physician and consultant physician to the Irish rugby team, gave a fascinating insight into the world of professional sport. His backroom video footage of the often very physical challenges on players on the rugby pitch was at times horrific and undoubtedly terrifying.

Sleep apnoea and snoring course

A full-day course on snoring and sleep apnoea will be given by Dr Roy Dookun on Saturday, November 7, in Dublin (venue to be confirmed). This very popular course was run in Cork in May this year and was over-subscribed. Anyone with an interest in this area of snoring and sleep apnoea should book this course. Dr Dookun is a GDP in the UK who has a particular interest in this area and is President of the British Society of Dental Sleep Medicine. Book early to avoid disappointment. Registration will open shortly.

Retirement Seminar

Getting Long in the Tooth

The ever popular Retirement Seminar will take place on Friday October 2 at the Radisson Hotel, Dublin Airport.

The jam-packed day will commence with registration at 9.30am followed by many interesting speakers on topics such as: looking after your health in retirement; pension planning; succession planning; selling a practice; legal implications to retiring; medical legal responsibilities on retiring; and, what to do after a life of dentistry. This year our event is sponsored by Goodbody. This day is an absolute must for those recently retired or thinking of retiring in the next few years.

For further information or to book your place call IDA House, Tel: 01-295 0072. Full details will be posted online and to members.

HSE Seminar

Due to popular demand, this year's HSE Dental Surgeons Seminar returns to the county of Carlow and the fabulous venue of Mount Wolseley Hotel for the second year running. We continue with the much improved and preferred format of holding the event over two days instead of three.

We are delighted to welcome such distinguished speakers as Professor Helen Whelton, Dean of Leeds Dental School & Hospital, Dr Edward Cotter, prosthodontist and dental oncology expert, Dublin graduate Dr Ailbhe McDonald, Consultant in Restorative Dentistry in the Eastman Dental Institute, Dr Wendy Turner, Consultant in Periodontology and Restorative Dentistry from London School of Dentistry, and many others. We are particularly delighted to welcome back Dublin graduate Professor Colman McGrath from Hong Kong.

The AGM of the HSE Dental Surgeons will take place on Thursday afternoon and all members are encouraged to attend. Reform of the dental service has been ongoing for a few years and there is still no end in sight. This is your opportunity to hear the reports of the CEO, Fintan Hourihan, and the Committee at first hand, to ask questions, and to voice your opinion. Some areas of the country are not represented on the Committee and their absence is a loss to the Committee and to you as members. There are usually just six meetings per year so please consider a nomination.

Our social evening buffet will take place at the hotel at 7.30pm and tickets are priced at a very affordable €35 – all delegates and trade colleagues are welcome to attend. A full trade show will take place on Friday, October 18.

Sensitive Dentist Awards

Following on from a sell-out awards dinner at the beautiful Royal Hospital Kilmainham last December, this year's Sensitive Dentist of the Year Awards are moving to the even bigger and more salubrious surroundings of the Concert Hall at Dublin's RDS.

This year's event will take place on Saturday, December 5, and will be attended by over 400 guests.

Patients can nominate their dentist by logging on to www.sensodynedsensitivedentist.ie and filling in the online form, or by filling in a nomination form, which you can get by contacting IDA House.

The closing date for receipt of nominations is September 30. Don't delay – get your patients to nominate you now! Best of luck!

Physician, heal thyself

The new Practitioner Health Matters Programme will offer support to dentists and other health practitioners in difficulty.

The Practitioner Health Matters Programme, launching this September, aims to support and care for dentists and other health professionals who may have a substance misuse problem or mental health issue. Formerly the Sick Doctors Scheme, which supported doctors for over 25 years, the new Programme has been updated to reflect international best practice in practitioner health, and for the first time is also open to dentists and pharmacists.

Dr Íde DeLargy, a GP based in Blackrock in Dublin, is Clinical Lead for the new Programme, having been involved with the Sick Doctor Scheme since 2008. She explained the particular issues that affect health practitioners.

"Doctors, dentists and pharmacists are very slow to come forward to declare that they might have a problem with mental health issues and alcohol or substance issues. Therefore, what we find is that they present very late and usually in crisis."

Key to overcoming this reluctance, says Dr DeLargy, is the promise that they will receive a high standard of care, coupled with complete confidentiality, and the reassurance that regulatory bodies will remain at arm's length for those who engage with the Programme.

"We want people to feel that they can come forward safely and in confidence to have their health needs met, with the intention of getting them back to work safely and well."

The other key message is to seek help as soon as possible.

"If you feel you have a problem, if you think you might have a problem, or you recognise a problem in somebody else, seek help early."

How will it work?

Dentists, doctors and pharmacists are encouraged to self-refer to the Programme, which can be accessed by logging on to their website – www.practitionerhealth.ie – or by email at confidential@ practitionerhealth.ie. Once they make that initial contact, they will be advised to come forward for assessment. A treatment plan will be put in place and agreed with the practitioner, depending on the nature of the problem. More severe cases may require some in-patient care, but those less severe can be managed on an outpatient basis, with ongoing monitoring and support. The Programme will offer follow-up and support for as long as it is needed.

"This is a model of care that has been shown to work well, and the outcomes at an international level are very positive. Practitioners who get a service from a designated programme do extremely well and about 80% of them get back to work safely and well in recovery."

Although the Programme is independent of the regulatory bodies, it has their support. "We have a memorandum of understanding with each of the regulators [including the Dental Council] so that they recognise the work that we're doing, and they support it, but they're not involved, so we do not need to refer a practitioner to them unless somebody is not willing to comply with the treatment programme and/or is putting patients at risk."

Dr DeLargy emphasises that these are extreme cases, as the vast majority of people who engage with the Programme are willing to comply with their treatment plan.

Cost

Practitioners who have problems with substance misuse or mental health issues are often in financial difficulty as a result of neglecting their practice. Alternatively, their problem may in part have been caused by the stresses of financial problems, or difficulties in running their business. Either way, cost will not be an issue for practitioners who come to the Programme for assistance. Those who have health insurance can use it to cover possible in-patient services, and those who do not will be referred to the appropriate public services; however, the assistance offered by the Programme itself, i.e., advice and counselling, etc., is free of charge. The Programme will also link to the relevant benevolent funds (medical, dental and pharmacy), so that if a practitioner needs financial support those organisations may be able to assist.

Warning signs

While the Programme's directors hope that practitioners experiencing difficulties will self-refer, they acknowledge that the person with the problem is often the last person to realise that they need help. With this in mind, what should friends, colleagues and family members look out for? Dr DeLargy says that initial warning signs can be very subtle. "For example, there might be changes in work patterns – somebody who has previously been punctual and attentive to their work starts coming in late, or missing sessions. It can be as simple as that."

A change in appearance – neglect of dress or personal hygiene – might also indicate a problem. As problems escalate, the signs become more obvious, ranging from a person smelling of alcohol, or disappearing for periods of time, to locking themselves in their consulting room in order to drink or abuse substances.

Dr DeLargy and her colleagues are more than willing to speak to anyone who is concerned about a colleague or family member. Often, she says, the initial contact and discussion serves to confirm that there is a problem, and they will be advised to speak to the person concerned and advise them to seek help. She acknowledges that this is often extremely difficult to do, but the Programme is here to help.

"We can talk them through the steps – what they might say to the individual and how they might go about it. It's a tough conversation to have, but it could be

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

Dr DeLargy will address the IDA's Retirement Seminar – 'Getting Long in the Tooth' – on Friday October 2 at the Radisson Hotel, Dublin Airport. Dr DeLargy praised both the Dental Council and the Irish Dental Association, both of which have been involved in helping to develop the Programme and to support it. Association CEO Fintan Hourihan is Secretary/Director of the Programme, and Dr DeLargy praised his commitment and support.

life saving in certain circumstances. It could be the kindest thing you ever do for a colleague – sit them down and say: 'I can see what's happening and I think you should go for help'. A lot of the time, particularly in the past, we haven't done that – we've just ignored it, which can have devastating consequences."

Facing up to the realities

The rates of substance misuse and mental health problems among health professionals are broadly similar to those among the general population – 10-15% – although, as stated earlier, health professionals tend to present much later for help. Another difference is a higher prevalence of abuse of prescription medicines, which the practitioner may be prescribing for him or herself.

"As a profession we need to realise that, whether we like it or not, this issue exists. There are nearly 19,000 registered doctors in Ireland, so that gives us a figure of at least 1,900 who might have these problems, but we're seeing nowhere near that – even among doctors we're seeing maybe 50 to 60 people [seeking help]." With approximately 2,500 registered dentists, a similar analysis would indicate a significant number who may be in need of help.

"There's clearly a huge unmet need out there. We need to recognise our own vulnerabilities. We know that people who have a family history, say, of mental health or addiction problems, are more likely to run into difficulties. For others, stress-related problems, e.g., financial problems, bereavement – can be the tipping point."

The traditional demographic associated with these problems – males in their middle years – is still the most common group affected. In recent times, however, a newer group of practitioners presenting with difficulties has emerged, and this is a cause for concern.

"There is increasing evidence that younger female practitioners are starting to present more frequently in programmes such as ours. [This may be linked to] the fact that there are a lot of additional pressures on women in terms of trying to manage their family life and all of the career pressures that exist."

Dr DeLargy mentions in particular the pressure on young female doctors of having to move every six months in the early part of their career. "This is a huge risk factor, particularly for women, because if you've a young family you're losing all your connections – your support network – every time you move."

She feels that the pressures on young female dentists are likely to be similar, and with women making up more and more of these professions, these are issues that need to be dealt with.

"I think that's something we're going to have to acknowledge, and alert women to the fact that those risk factors exist – they need to be aware of them and try to develop supports. We also need to talk about how the professions are organised and try to minimise all this moving around."

Looking after yourself

Another important issue that Dr DeLargy is keen to raise, and that will be a key issue for the Programme, is the fact that many health professionals do not have their own GP, despite the fact that Medical Council guidelines require doctors to do so. This can mean that they manage apparently minor ailments themselves, without seeking an objective opinion. In certain circumstances what starts as a small prescription, for backache for example, can spiral out of control.

"We feel: 'I can manage these things. I don't really need a GP' – but you do. So that is a very important recommendation that the Programme will be promoting as good health practice."

Dr DeLargy and her colleagues hope to visit the third-level institutions to speak to undergraduates in the relevant disciplines and start getting the message about self-care and early identification of problems across at the very beginning of their careers.

"We want to let them know that the programme is there, and get these relatively simple messages out early: looking after yourself in the most appropriate way is going to pay dividends in the long run. Let somebody else look after your medical needs – don't try to manage them yourself. And if you start to develop problems, know what supports are there for you."

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[2] Septodont is the only company producing 500 million dental cartridges per year

[3] Source SDM data, YTD Q3 2012

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Identex, the major trade show for the dental profession in Ireland, will take place at Citywest Hotel on Friday and Saturday, September 18 and 19 next. The IDA Autumn CPD Programme will take place at Identex and includes a full programme with workshops and hands-on courses, all of which will be available to those who attend.

WIN A CAR AT IDENTEX

The IDTA is celebrating its thirtieth birthday this year and to mark the occasion, the members of the Association are giving away a car in a prize draw. The car will be a Volkswagen Up. To enter the draw, dentists, practice managers or surgery staff must place an order of a minimum of €250 plus VAT. They must already be account holders. The draw will take place in December, once payment has cleared on all orders.

The IDA, in association with Henry Schein, is particularly delighted to offer members practical workshops on the new Code of Practice on infection prevention and control. These short (40-minute) workshops will offer dental teams the opportunity to be walked through a purpose-built decontamination area and ask questions of leading clinical experts. Places are strictly limited and

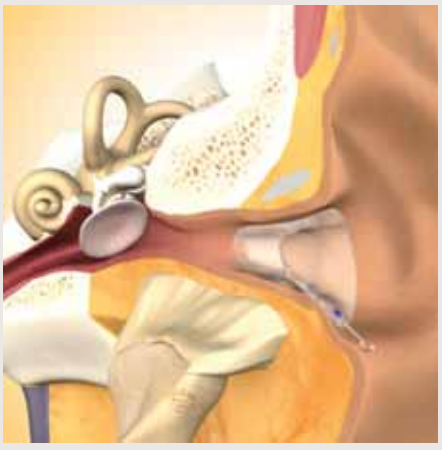
A new solution for TMJD pain relief

The new FDA-cleared Cerezen device is now available in the UK and Ireland as a safe and effective aid to reducing the pain associated with temporomandibular joint (TMJ) disorder and associated symptoms such as grinding of teeth and headaches.

The comfortable device comprises two custom-made, removable hollow ear canal inserts – a unique new way to treat the disorder. The treatment provides pain reduction and, unlike a bite-splint, can be worn all day and night.

Be one of the first practitioners in the UK and Ireland to incorporate the Cerezen device into your practice.

Meet us on Stand 3 at Identex to find out how it works and how it could be a profitable addition to your practice. For more information, please visit us at www.cerezen.eu.



Cerezen insert for relief of TMJ pain.

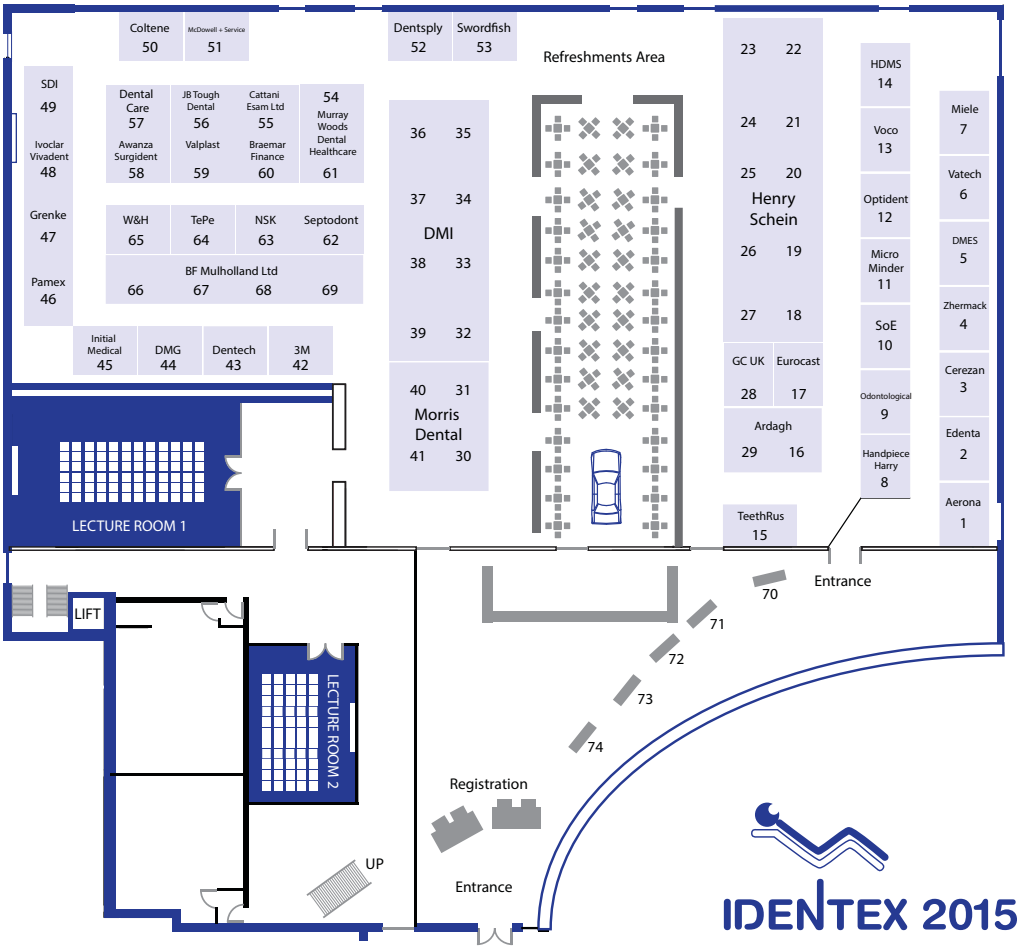
Decontamination unit on display

Decontamination is one of dentistry's hottest topics and the professionals at Henry Schein Ireland understand how important it is for dental practices to have not only the most suitable equipment, but also an appropriate room layout, compliant testing protocols and excellent service levels. With so much to think about, Henry Schein Ireland's team of in-house decontamination specialists provides expertise that will help satisfy decontamination requirements for dental surgeries.

Henry Schein Ireland decontamination specialists assist and advise dentists on all local decontamiantion unit (LDU) design requirements, regardless of budget or surgery size. Are you compliant with the latest guidelines?

Why not visit the decontamination area of the Henry Schein Ireland stand at Identex for advice and information on mandatory requirements, design, equipment and products. For more information, see www.henryschein.ie.

See the decontamination unit on the Henry Schein Ireland stand.



Stand	Exhibitor
1	Aerona
16+29	Ardagh Dental
58	Awanza Surgident
60	Braemar Finance
3	Cerezen

Stand	Exhibitor
55	Cattani Esam
50	Coltene
43	Dentech
52	Dentsply
44	DMG

Stand	Exhibitor
32-39	DMI
5+6	DMES
2	Edenta
17	Eurocast
28	GC UK

Stand	Exhibitor
47	Grenke
8	Handpiece Harry
14	HDMS
45	Initial Medical Services
48	Ivoclar Vivadent
56	JB Tough Dental
57	Dental Care Ireland
51	McDowell+ Service
7	Miele
11	Micro Minder
30,31,40,41	Morris Dental
54+61	Murray Woods Dental
63	NSK
66-69	BF Mulholland LTD
9	Odontological
12	Optident
46	Pamex
49	SDI
62	Septodont
10	Software of Excellence
53	Swordfish Medical
15	TeethRus
64	TePe
18-27	Henry Schein
5+6	Vatech
59	Valplast
13	Voco
65	W&H
4	Zhermack
42	3M

Wide range at Morris Dental

Morris Dental is exhibiting its range of products on stands 30/31 and 40/41 at Identex. On show will be:

- the Belmont equipment showcase, which comes with free, extended five-year parts and labour warranties;
- the NSK iClave, which, according to the company, is the best autoclave it has ever sold, and there will also be NSK handpiece offers;
- Digora OPTIME – digital plate x-ray system and digital OPG;
- ITENA composites at fantastic prices and samples will be available;
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- W&H handpieces and washer disinfectors; and,
- Metasys suction motors and amalgam separation units.

Meet Peter Morris and the Morris Dental team on stands 30/31 and 40/41.

Remember – dentists who purchase €250 plus VAT worth of materials at Identex could win a car, and customers can also avail of special offers at the show. See www.morrisdental.ie.

we encourage members to book early on receipt of the registration forms.

Half-day hands-on courses will take place on composites by Professor Brian Millar, King's Dental Institute, and on endodontics by Dr Derek Duggan, an endodontist based in Dublin. A further half-day practical workshop on medical emergencies will be given by Survival Linx on both Friday and Saturday. These workshops proved very popular during our Annual Conference in Galway and will provide core CPD training for all dental team members.

Peter Morris, the President of the IDTA, said: "Identex is the show at which the members of the Irish Dental Trade Association present our new products and services to the dental profession. We get to demonstrate the latest developments and technologies to dentists, nurses, practice managers, dental technicians and hygienists, and we are delighted to be able to combine our

excellent trade show with the IDA Autumn Meeting. We believe that every dental professional who visits Identex 2015 will benefit in many ways."
President of the IDA, Dr Anne Twomey, said: "The IDA is delighted to partner with the IDTA once again this year for Identex 2015. Identex and the IDA Autumn Meeting is the perfect combination of superb trade exhibition, hands-on courses, and lectures on practice management and clinical issues, which will earn CPD points for you and your team members. The IDA is very pleased to be working with the IDTA in this venture where dentists benefit from the input of both bodies. We hope that you enjoy the experience of the show and the lectures, and that you will find both to be of great benefit for you."

FRIDAY September 18

Workshops will take 30 minutes with an additional 15 minutes for questions and answers to the experts. All workshops must be booked in advance. Places are limited.

BOOKING INFORMATION available from the IDA at 01-295 0072.

Lecture Hall 1

11.00am **Medical emergencies workshop**
Survival Lynx

3.00pm **Composites hands-on course – Be creative with composites**

Professor Brian Millar BDS FDSRCS PhD FHEA

Brian is Professor of Blended Learning in Dentistry at King's College London. This course is ideal for GDPs who want to learn new skills for quicker, better composite restoration with new materials, to treat tooth wear, occlusal problems and aesthetics.

Lecture Hall 2

11.00am **Infection control workshop**
Dr Jane Renehan, Dr Nick Armstrong, with John Rice and Pete Gibbons, Henry Schein

12.30pm **Effective complaints handling for the dental team**
Dr Martin Foster, Dental Protection
This presentation will look at professional and effective complaints handling for dental team members.

2.00pm **Infection control workshop**
4.00pm **Infection control workshop**

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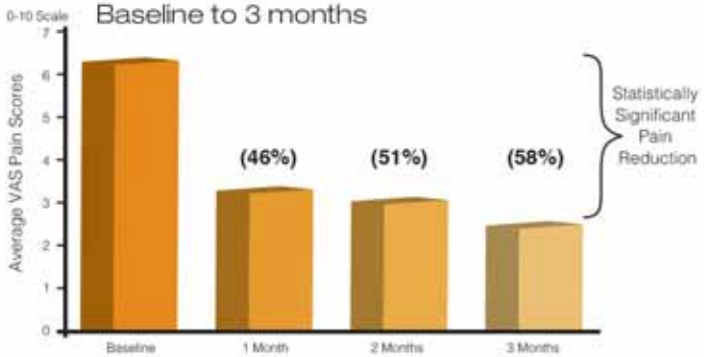
VAS Pain Reduction Score*
Baseline to 3 months



Visual Analogue Scale (VAS) scores range from 0 (no pain) to 10 (worst) pain imaginable

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*Tavera A, et al: Approaching Temporomandibular Disorders From a New Direction. A Randomized Controlled Clinical Trial of the TMDes Ear System. J Craniomandibular Practice July 2012; Vol 30, No 3, 172-181.

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Septodont special offers

Since its foundation in 1932, Septodont has developed, manufactured and distributed a wide range of products for dental professionals. Due to its long tradition of innovation, the company is at the forefront of the dental pharmaceutical industry. From local anaesthetic cartridges, topical gels, dental needles, obturation powders and pastes to restorative solutions, Septodont can meet dentists' needs in pain control, endodontics, restorative dentistry, infection control and more.

Today, the company employs over 1,000 people. It has six manufacturing plants in France, North America and India, and an international distribution network that serves dental professionals in more than 150 countries.

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Meet Gerry Lavery at the Septodont stand – number 62.

Gerry Lavery looks forward to welcoming you to Stand number 62 at Identex where new and existing customers can avail of some very special promotions.

SATURDAY September 19

Lecture Hall 1

11.00am **Infection control workshop**
Dr Jane Renehan, Dr Nick Armstrong, with John Rice and Pete Gibbons, Henry Schein

1.00pm **Medical emergencies workshop**
This workshop is designed to update dental professionals on how to manage patients presenting with a medical/cardiac emergency while awaiting the ambulance service. The course will address what medical emergency drugs are required and how these drugs are prepared and administered.

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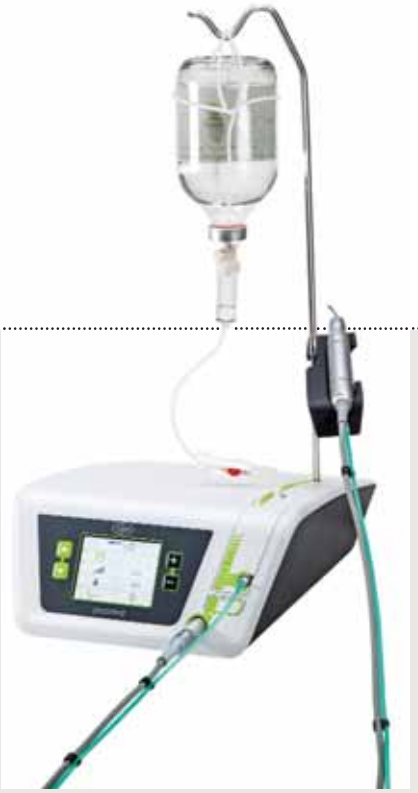
With 125 years' experience, W&H is a leading manufacturer of dental and surgical handpieces and equipment, as well as a complete range of decontamination equipment, including the Lisa steriliser and Assistina 3X3 handpiece maintenance system. W&H has a reputation for product innovation, quality and reliability. Exciting products from W&H include the SyneaVision range of top quality handpieces, with a unique five-ring LED for unrivalled 100% shadow-free daylight quality illumination of the treatment site. W&H also manufactures a comprehensive range of surgical handpieces, the Implantmed and the Piezomed ultrasonic bone surgery unit with innovative ultrasound technology ensuring high precision resection of bone substance while the surrounding soft tissue remains uninjured. Instruments are available for bone surgery, periodontology, extraction, retrograde endodontics, and lateral sinus lift. For more information visit our stand – number 65 – or see www.wh.com.



The Piezomed control unit with hand piece.

Lecture Hall 2

10.00am **Composites hands-on course – Be creative with composites**

2.00pm **Endo hands-on course – Managing challenging root canal anatomy**

Dr Derek Duggan (right), practice limited to endodontics, Dublin

Derek spent the last five years as a faculty member, Endodontic Department, UNC, Chapel Hill, US.

This half-day course is aimed at general practitioners and those with an interest in endodontics. The aim is to improve the standard of endodontics for the participants by means of practical hands-on instruction.

A man for all seasons

Dr Martin McAleese is a dentist, a former accountant and Senator, husband of former President of Ireland, Mary McAleese, and has been a significant player in the peace process on this island.

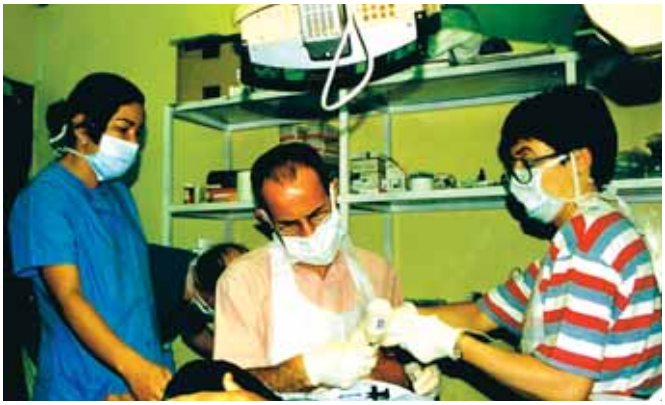
Paul O'Grady
Journalist and managing editor at Think Media

paul@thinkmedia.ie

Most of us are lucky, or more likely unlucky, if we have one significant story to tell from our life. Martin McAleese has many. His stories involve a great deal of adversity, a desire to use every and any ability he might have, failure, success, forgiveness, and a willingness to try. A Catholic nationalist raised in a Protestant and staunchly loyalist area of Belfast, he suffered verbal abuse for the first 20 years of his life. What does that mean? It means that many days as a child and a teenager that he was out of the house, he was told he was a Papist, Fenian bastard and several variations of that. Intimidation was so frequent as to be normal, and physical abuse was occasional but regular. That's one story.

Another is how his parents valued education and he went on to study physics at Queen's University, despite failing his 11-plus exam. Then he graduated but decided business, not science, was his future and joined Stokes Kennedy Crowley & Co, the chartered accountants firm, in Dublin. Before he left for Dublin, he had captained the Antrim minor football team of 1969, won a Sigerson Cup with Queen's in 1971, and his family had been forced out of their home by the eruption of the Troubles. After his family left their home, Martin says he decided to start his life afresh and completely forget the first 20 years. It would, of course, play a significant role later in his life – but he wasn't to know it then.

The Queen's University Belfast Gaelic football team that won the Sigerson Cup in 1971. Martin is pictured fourth from left in the second row.



Dr McAleese was part of a team that carried out humanitarian work in Honduras in 2000.

His personal demeanour is really interesting – at least to this observer. He is a very engaging and warm person. He is thoughtful and considered and remarkably open to discourse (a journalist's delight), but he speaks very softly. His body language is of a man who learned to blend into the background very early in life. Not to stand out. Not to draw attention to himself. Behind the soft voice though, is a man who can do something rare: blend a fine intellect with what lately has been called emotional intelligence. The soft voice will put you at ease as he talks with you. I suspect it did so when he was talking with those former neighbours who were loyalist paramilitaries, and when talking to the Queen and other members of the British Royal Family.

The dentist's story

So which story will we tell? In this *Journal*, we must focus on the dentistry. The route to dentistry in Martin's life is through his desire to learn. The spark for that desire was failure and disappointment.

Secondary education was free in Northern Ireland from 1948 and Martin's mother was determined her family would avail of it. In Martin's case, he was far more concerned about football and having fun than about working for the 11-plus exam. That sounds perfectly normal for a young lad, but the terrible disappointment in his mother's face shook Martin when he failed the 11-plus. She marched him down to the Christian Brothers Grammar School in Belfast and "basically bullied" the headmaster into accepting Martin. Apparently you could pay for the first year and if the child passed the end-of-year review, he or she could continue on through secondary education up as far as A-Level. So Martin got the message and from that point worked hard at his studies. Out of that failure – and his mother's acute disappointment – came a strong set of A-Levels in pure maths, applied maths, physics and chemistry, as well as access to third-level education.

And so into Queen's University where Martin says he enjoyed the full student experience. Lectures were missed every now and again, football was played, parties were enjoyed, and exams, he says, often required all-night cramming. No doubt Martin was enjoying university life, but his brain was in gear too. He came to the conclusion that he would be well-served in life by gaining a good understanding of accounting and of business. So when the Dublin-based accountants Stokes Kennedy Crowley came to Queen's on a recruitment mission, Martin got himself a start as a trainee accountant. Off to Dublin he went and at one point shared a house with Moss Keane, Denis Coffey and Jim Coughlan – all of whom he had met playing university football, and sadly, all of whom are dead now.

Shortly after he got married, he became financial controller and company secretary of two Aer Lingus travel subsidiaries. Four years later, with Mary working in Trinity as Reid Professor of Criminal Law, Criminology and Penology and doing some work in RTÉ, Martin left work to enter Trinity as a student of dentistry. Why on earth did he leave such good work to go back to study dentistry? "I have always believed that what ever you work at – most people would like change. We often think about change. I think that change is the most energising and rejuvenating thing that you can do. Why do a lot of people not grasp change? First of all, there has to be an opportunity. The things that hold people back are mortgages, commitments, self doubts, complacency."

Where did the idea spring from? "At 30 years of age you have got to be very

Early life

"My mother and father were country people who came to Belfast in the late 1940s. My father was from Portglennone in County Antrim, and my mother was from Lisnaskea in County Fermanagh. They came from big families on small farms. My father was one of the very few Catholics who got a job in Short Brothers. As a result, they bought a house near to his work – right in the heart of Protestant, loyalist east Belfast. We grew up, therefore, disconnected from our own community. Loners in our own community. Those circumstances led to a very difficult upbringing because of the exclusion and the sense of fear and intimidation and of sectarianism."

Mary gets sense!

"Mary went to St Dominic's High School in Belfast and we met through a debating competition when we were 17 years of age. I went to her 18th birthday party. She invited me because she was interested in my friend…but she ended up with me! We are married 40 years next year. We got engaged. Broke off. She got engaged to another fella …but she got sense! I would say that anyway."

The McAleese family at the opening of the Mary McAleese Boyne Valley Bridge: from left: Mary, Justin, Sara, Emma and Martin.

Following an injury that ended his football career, Martin became an avid runner, taking part in several marathons over the years.

careful that what you change to will vindicate the change, that it will give you a good return and allow you to comfortably support your family. Dentistry for me fulfilled that requirement. I knew that if I did dentistry, I would have a reasonable quality of life. The second thing is that it gave me a great contrast. If you can imagine, I was in an office with a door closed struggling with balance sheets, deadlines, board meetings, monthly management accounts, taking work home and all of that.

Dentistry is completely different. You are working with people and you are working with your hands. One of the things that also struck me was that you finished your work at half-five or six o'clock and you cannot take your patient home with you. But you do take your worries home with you. Will a problem develop overnight? Will you be met with an irate patient at half-eight the next morning? Litigation? You take your worries home with you. I didn't realise that until I practised."

Martin's father's story

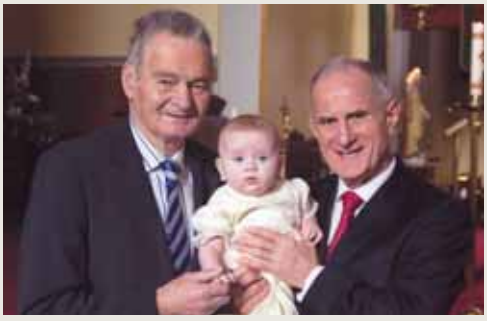
"Emma arrived in September 1982. We would get up very early and I would drop her off at the crèche and then the staff at the crèche went on strike. That was a big problem because we had no infrastructure. My mother died at the end of December 1981. My father, Charles, retired three months later. It was very sad. I remember phoning him in early 1983 and asking him would he come down? So he came down to Dunshaughlin. To see a man who was, in my mind, "only a breadwinner" getting involved with Emma, doing the house work, minding her, feeding her, changing her, cooking meals for us when we came home. It was fantastic. A man of 66 years of age and he was enjoying it. If that strike hadn't happened in the crèche, in my mind, my father may only ever have been a breadwinner. He got an opportunity to express all those other things and he did it in such a way that was fantastic. And he stayed with us for 19 years. He never went back and ended up being waked in the Áras. He was taken in a coffin from the Áras to Ballymena and on to Portglennone. That was some story. People talk about Mary being elected to the Áras but behind that was a story of a man who was the eldest of 11 children from Paisley country in north county Antrim, who existed on the fruits of a very small farm which never had running water and for whom I am sure in the early part of his life, everything looked very bleak. Fast forward years and here he is in his coffin being waked in the Áras with the Taoiseach, Government ministers and Ambassadors coming to pay their respects. And that is a big story.

He died in 2001 at the age of 84. When he was born the Lord Lieutenant was still in the Park. His funeral was attended by the Garda Commissioner and the Chief Constable of the PSNI. I think there was a great pride in the Protestant community of Northern Ireland about Mary because she came from their place. And I remember the goodwill that came from that funeral. The write ups in the local press reflected great pride on both sides of the community."

On his outreach to loyalist paramilitaries

"… when I first sat down with some loyalist paramilitaries and began the process of outreach and engagement, the greatest asset that I could bring to the table was the first 20 years of my life. …They couldn't say that you don't understand. I knew their streets, their pubs, their clubs, their schools, their churches. I had lived among them and their people. I understood their accents and could share their sense of humour. All of those things conspired to give a great street credibility that was absolutely crucial in that engagement and the subsequent development of relationships. It is an aside but what I was leaving behind came back as a tremendous asset."

Proud grandfathers



Martin is photographed with his grandson Charlie O'Connell, with Charlie's other grandfather, the legendary Kerry footballer, Mick O'Connell.

Dr Martin McAleese: timeline in brief

1951	Born in Belfast
1962	Fails 11-plus exam but still goes to Christian Brothers Grammar School
1969	Goes to Queen's University; studies physics
1971	Wins Sigerson Cup
1972	Graduates and goes to Dublin to train as an accountant
1976	Marries Mary Leneghan, the Reid Professor of Law in TCD; moves to Dunshaughlin
1980	Enters TCD to study dentistry
1982	Daughter Emma is born
1984	Graduates and joins Dr Des Casey in his practice in Bessbrook, Co. Armagh
1985	Twins Justin and SaraMai are born. Becomes a partner and opens second surgery in Crossmaglen. Mary becomes Director of the Institute for Professional Legal Studies in Queen's and the family moves to Rostrevor, Co. Down
1997	Mary elected President of Ireland; family moves into Áras an Úachtarain
1999	Sells his share of dental practice
2002	Opens communications with loyalist paramilitaries
2011	With Mary, welcomes Queen Elizabeth II to Ireland
2011	Appointed Senator, Chairs Inter-Departmental Committee on Magdalen Laundries; appointed Chancellor of DCU
2013	Resigns as a Senator, appointed to the Public Interest Board of PwC, appointed Chair of the Oversight Committee to resolve the Priory Hall housing issue

Training was first class

Did he ever feel afterwards that he should have stayed with accountancy? "No. The training in the Dental Hospital was first class. It pre-dated problem-based learning but it was excellent. The only criticism I would have would be the lack of business training. So I arrived up in Bessbrook and started work with Des Casey and it was a mixed practice: two locations, and private and NHS. We referred very little and I thought that was the norm. So we would have extracted wisdom teeth, performed complex crown and bridge work, orthodontics, we did general anaesthetics in the surgery, which you wouldn't even dream of now. The only thing that I remember referring was difficult lower wisdom teeth. That was normal. We were very busy. The Dublin Dental Hospital prepared me very well for that. There was no situation that I found myself in when I was practising that I didn't know what to do. And I knew what not to do."

Having the advantage of being mature and having business training, what could he do that helped the business? "I did the annual accounts of the practice. If you do that, you know exactly what is going on. You know where the issues are, you know where remedial action is required. You know how to manage the patient base, you know how to efficiently run the practice. We were one of the first practices in the North to computerise.

"Don't forget, dentists are healthcare providers but you can't be a healthcare provider if you run your business at a loss. You really have to know how to run your business and I don't know if that has changed a lot in recent years in undergraduate training."

Lessons

Was he happy as a dentist? "I was very happy. I think I am very fortunate to have enjoyed every moment of everything I have done. The business experience was crucial. That thing about bringing worries home – I think that should be explained as being normal. That is not something that is unique to a dentist when he or she feels it for the first time. That is a common thing. No dentist should ever be under the illusion that what they are experiencing in terms of being worried is exceptional or abnormal. The very knowledge of it being normal goes a long way to making it easier. … (Another) lesson is that working with someone else, or two other dentists, is a great comfort and I think it is better for both dentists and their patients.

"The other lesson is the treadmill effect: it is very easy to become absorbed in your work. You end up spending all of your good quality time on your dental work. And then poor quality, leftover time goes to family, friends, recreation. I was very bad at this, which is why I feel so strongly about it. Apportion your quality time over all the things that are important in your life.

"Communication with patients is very important. You have to strike a balance between the cold, detached professional, and the dentist who is too involved with the patient. I believe you can warmly engage with your patient and still maintain a certain detachment. Getting that right is hugely important. Working in a pub from 14 to 20 taught me how to engage with people. The skills I got from that have been a phenomenal foundation for my life. Life is about engaging with people and I enjoyed that pub job as much as any." A modest statement to conclude from a man for all seasons.

Favourite moment of Mary's Presidency

"The Queen's visit. Mary had met the Queen a good number of times before she was elected President. If we could get to the point where the Queen could visit Ireland and be well received, we felt that things would never be the same again. We could never go back. And that is what happened. It took the 14 years and I thought I would never see the day, but it happened. That was the highlight. We knew that she wanted to come. She's a very warm person. There never were any tensions in any of our relationships with any member of the Royal Family.There is a lot of ordinariness about people. Everybody has that. She was very well informed on Irish history and genuinely wanted to make an impact. And she did – at the Garden of Remembrance, through her speech at Dublin Castle and, of course, visiting Croke Park."

The visit of Queen Elizabeth II to Ireland in 2011 was the highlight of the years in the Áras.

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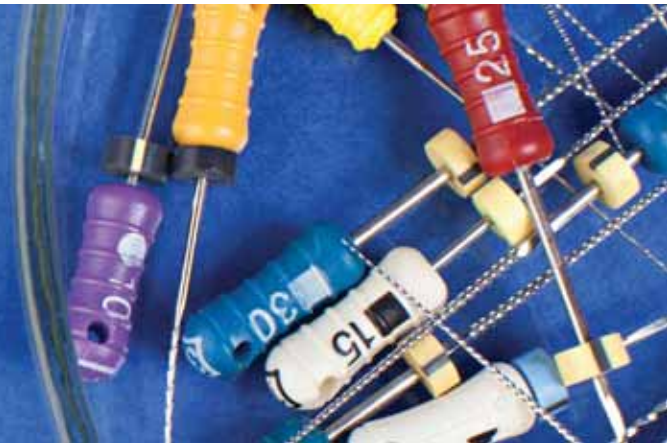
An instrument of two parts

Broken instruments and other common problems in endodontics should be dealt with in a caring, supportive and professional manner.



The most common dento-legal problem involving endodontic procedures is probably the broken instrument. 'Fracture' and 'breakage' are particularly emotive words and so phrases such as 'separated instrument' are preferable. While instrument separation is not itself automatically considered to be negligent practice, failure to recognise the complication and to advise the patient that it has occurred can seriously undermine any defence.

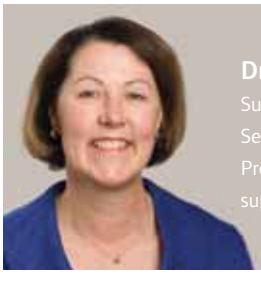
It is absolutely essential that clinicians understand and adopt correct procedures as far as their instrument use is concerned. It makes good sense to read and follow the manufacturer's instructions with great care, and to inspect and discard instruments at the first sign of damage. This applies to all techniques, whether they involve rotary techniques or reciprocating-action handpieces.

Tell the patient

Dental Protection advises members to tell patients if something has gone wrong, for whatever reason, apologise if appropriate, and explain how it can be rectified. Where necessary, reassurance should be given to any patient who is concerned about an adverse treatment outcome.

When complications and errors arise, you should be prepared to give your patients objective factual information about what has happened, in a caring and supportive fashion. You are encouraged to explain any clinical issues in terms that the patient is likely to understand. In this way, a clinician can comply with The Dental Council Code of Practice relating to Professional Behaviour and Ethical Conduct, which states:

> "You must tell your patient of the nature and possible consequences of an adverse event should one occur in the course of treatment.
> You must respond openly, honestly and professionally to any questions from your patient or, where appropriate, a parent, guardian or carer, in language they can understand."



Dr Susan Willatt BDS MBA LLM
Susan is Head of Dental Services and Secretary to the Board of Dental Protection. She is part of the team that supports members in Ireland.

Patients have a right to be informed of any matters that relate to treatment provided for them; you should try not to withhold objective factual information, or an expression of regret or sympathy where appropriate. Saying that you are sorry that an incident has occurred, or expressing your regret that a patient is upset or unhappy, is not necessarily an admission of guilt, fault or liability.

Managing the situation

When procedural error does occur there may be a need for referral to a specialist endodontist. Indeed, there are a number of other situations when a second opinion from a more experienced colleague might be offered to the patient – particularly if you feel that a situation is beyond your own skill set. Apart from the retrieval of a fractured instrument these might include:

- anaesthetic problems;
- trauma and its sequelae;
- removal of root fillings if proved difficult;
- canal location;
- post removal;
- perforation repair; and,
- surgical endodontics.

When referrals are received, it is helpful to have available any previously taken radiographs that are of diagnostic quality to aid diagnosis and avoid duplication. Digital radiographic images should be transferred in a standard format (e.g., jpeg) or printed with a quality printer on photographic paper. While some colleagues will also accept digital images via email, care should be taken to ensure that patient details remain secure and cannot be accessed by a third party.

There will inevitably be challenges encountered in endodontics, but the procedure continues to offer a predictable treatment strategy. As with any dental treatment, careful case selection, open patient communication, recognising your limitations and knowing when to refer will all help to improve the predictability of root canal treatment and patient satisfaction. An adverse incident does not necessarily mean that a patient will make a complaint or a claim. In fact, a clinician can use an adverse incident to good effect to demonstrate his or her professionalism. A clinician who understands the patient's concerns and takes the time to reassure the patient and to resolve the clinical issue, can become more highly thought of in the eyes of the patient.

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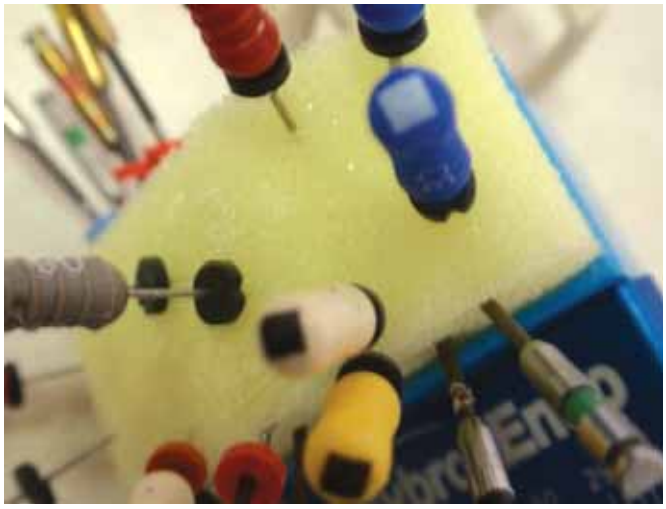

FIGURE 1: Rotary and hand files. Note the sponge.

FIGURE 2: Separated NiTi rotary file.

Tips to avoid instrument separation in endodontics

In the practice of endodontics, clinicians may encounter a variety of unwanted procedural accidents and obstacles to normally routine therapy, at almost any stage of treatment.

One of these procedural problems is intracanal instrument fracture. Fractured root canal instruments may include endodontic files (**Figure 1**) and Gates Glidden burs. Instruments are made from nickel titanium (NiTi), stainless steel or carbon steel.

Fracture often results from incorrect use or overuse of an endodontic instrument, and seems to occur most commonly in the apical third of a root canal. This demonstrates the importance of correct training in the use of rotary NiTi files.

The relatively recent advent of rotary NiTi root canal instruments has led to a perceived high risk of instrument fracture. Fracture of rotary NiTi instruments may occur without warning, even with brand new instruments. Distortion of rotary NiTi instruments is often not visible without magnification. Fracture of stainless steel files is preceded by instrument distortion, serving as a warning of impending fracture.

Much research has been undertaken to understand the reasons for instrument fracture and how it may be prevented rather than treated. It goes without saying that prevention is always the best approach.

Dr Eoin M. Mullane
Currently in practice limited to endodontics in Limerick (www.mullaneendo.ie) and Dublin.

A review of the literature reveals that the average prevalence of retained fractured endodontic hand instruments (mostly stainless steel files) is approximately 1.6% and the average clinical fracture frequency of rotary NiTi instruments is approximately 1.0%. Therefore, the frequency of fracture of rotary NiTi instruments may actually be lower than that for stainless steel hand files. This is contrary to popular anecdotal belief.

It is important to note that the reasons for fracture of rotary NiTi instruments (**Figures 2** and **3**) are complex and multifactorial. One of the most important factors is the operator's skill and experience. Operator-related factors, such as proficiency with the instruments and the decision on the number of uses of the instruments, may help to explain the variation in the prevalence of fractured instruments reported among the various studies.

The purpose of this article is to provide clinical tips to assist in the prevention of instrument separation.

Tips to prevent instrument separation

Rubber dam tooth isolation

One should never insert a file into a dry canal, and in order to guarantee a pulp chamber soaked in sodium hypochlorite, rubber dam tooth isolation is a must. Debris is kept in fluid suspension (in theory) and the sodium hypochlorite acts as a lubricant.

Coronal pre-flaring and glide path

Coronal pre-flaring (with NiTi instruments) (**Figures 4** and **5**), and creating a glide path with hand instruments to full root canal working length, are major factors in reducing the fracture rate of NiTi instruments. The glide path creates a guide path for the NiTi rotary instrument tip to enable it to safely reach full working length. A glide path prepared to a size 15-20 stainless steel hand file is sufficient.

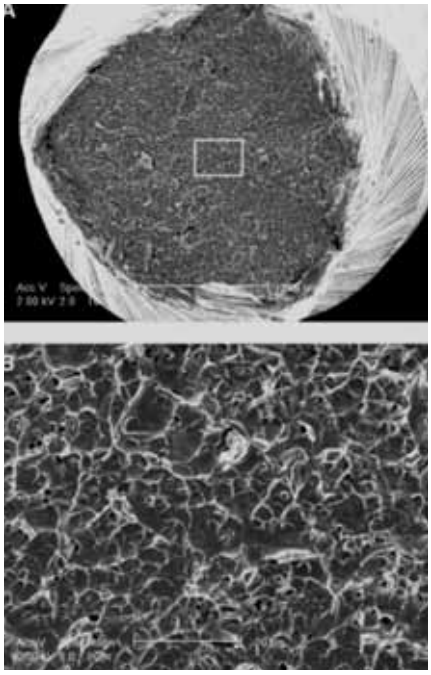

FIGURE 3: A. Magnified fractured surface of a rotary NiTi instrument showing dimpling resulting from cyclic fatigue. B. Higher magnification of the dimpling.

FIGURE 4: Access opening in a lower first molar demonstrating coronal pre-flaring and a middle mesial root canal.

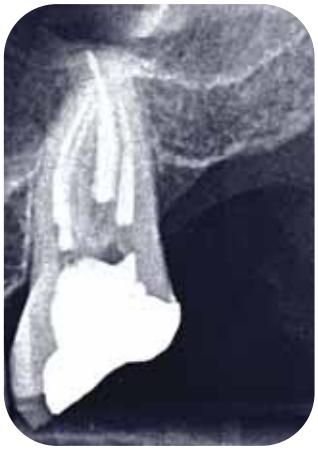

FIGURE 5: An upper left second molar root canal treatment. Note the straight line access and the coronal pre-flaring of the root canals.

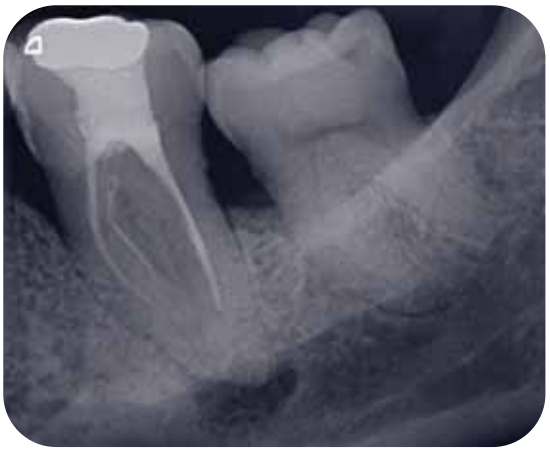

FIGURE 6: NiTi rotary instrument fractured in the mesiobuccal canal of a lower molar. Note the inadequate root canal treatment and the peri-apical lesion.

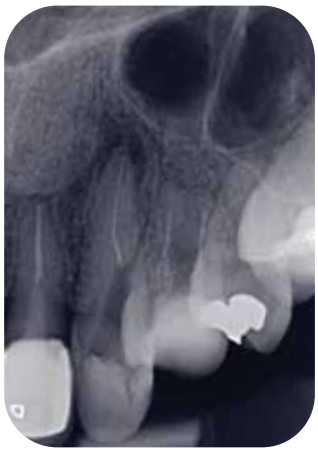

FIGURE 7: Hand file separated at full working length in an upper left canine.

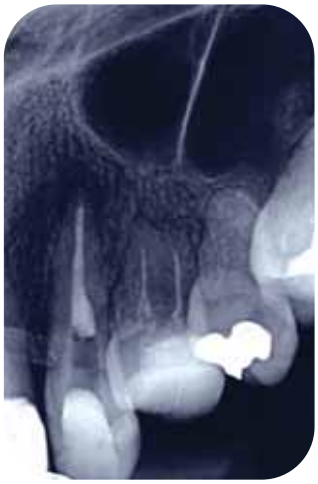

FIGURE 8: Hand file removed (from Figure 7) with minimal dentine removal (during instrument removal). The root canal was obturated to full working length.

Straight line access

Failure to achieve adequate straight line access to a root canal, prior to attempting to obtain a glide path to full working length, will predispose to excess instrument stress and cause NiTi rotary and hand file instrument separation (**Figure 6**).

Dynamics of instrument use

Light apical pressure and brief use of the instruments, with a continuous pecking motion, may contribute to the prevention of fracture in NiTi rotary instruments. Never force a NiTi rotary or hand file into a canal (**Figures 7** and **8**).

Single use of hand files and rotary instruments

Partially fatigued instruments, when flexed, will reveal fractures associated with surface flaws, and prolonged clinical use of rotary NiTi instruments significantly reduces their cyclic flexural fatigue resistance. But the number of uses of rotary NiTi instruments will depend on a number of variables, including instrument properties, canal morphology and operator skill.

Cleaning instrument flutes during instrumentation of the root canal

Use of an endodontic sponge (SybronEndo) will assist with debris removal (**Figure 1**), thus avoiding debris accumulation on the file and allowing the file flutes to refill with debris between each individual canal instrumentation.

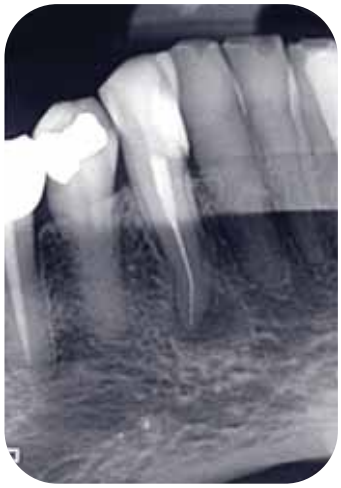

FIGURE 9: A lower right canine with a NiTi rotary separated at full working length. Note the peri-apical lesion.

QUICK REFERENCE TIPS

- Always create a glide path and patency with small (at least No.15) hand files.
- Ensure straight line access and good finger rests.
- Use a crown-down shaping technique (depending on the instrument system).
- Use stiffer, larger and stronger files (such as orifice shapers) to create coronal shape before using the narrower, more fragile instruments in the apical regions.
- Use a light touch only, ensuring to never push hard on the instrument.
- Use a touch-retract (i.e., pecking) action, with increments as large as allowed by the particular canal anatomy and instrument design characteristics.
- Do not hurry instrumentation, and avoid rapid jerking movements; beware of clicking.
- Replace files sooner after use in narrow and curved canals.
- Examine files regularly during use, preferably with magnification.
- Keep the instrument moving in a chamber flooded with sodium hypochlorite.
- Avoid keeping the file in one spot, particularly in curved canals, and with larger and greater taper instruments.
- Practice is essential when learning new techniques and new instruments.

Inspect instruments during instrumentation of root canals

Examine hand files and NiTi files for signs of unwinding during treatment. NiTi files may spontaneously fracture with no evidence of flexural fatigue.

Canal configuration

Instrumentation of teeth with complex root canal anatomy may lead to torsional failure. Inability to visualise root canal isthmus' (between root canals or arising from a canal) can cause instrument separation if an instrument is inadvertently inserted into one. Careful diagnosis and treatment planning is vital in these cases.

Instrument diameter

Instruments with larger diameters succumb to flexural fatigue earlier than those with thin diameters. Therefore, be careful when pre-bending large diameter hand files. However, instruments with a larger diameter have increased resistance to torsional failure.

Electropolished NiTi rotary instruments

Electropolishing eliminates or reduces the number and extent of surface defects, and data indicates that the smoother surface of an electropolished NiTi rotary instrument results in a stronger instrument that is more resistant to fracture. Examples of electropolished NiTi rotary instruments are BioRaCe (FKG Dentaire) and the Endosequence file (Brasseler USA).

Conclusion

It may not be 'doom and gloom' if an instrument separation occurs. Clinical studies document that the prognosis is not significantly affected by the fracture and retention of an instrument. The presence of a preoperative peri-apical radiolucency, rather than the fractured instrument per se, is clinically more significant and demonstrates the major negative influence of established and advanced root canal infections (**Figures 9** and **6**). Consider the time of fracture; the earlier in the instrumentation procedure, the greater the likelihood of inadequate canal debridement. Therefore, the inability to adequately cleanse and shape the canal because access is impeded by a fractured instrument will undoubtedly result in failure.

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Does access to general dental treatment affect the number and complexity of patients presenting to the acute hospital service with severe dentofacial infections?

Abstract

Aim: This is a retrospective study to review the treatment and management of patients presenting with odontogenic infections in a large urban teaching hospital over a four-year period, comparing the number and complexity of odontogenic infections presenting to an acute general hospital in two periods, as follows: Group A (January 2008 to March 2010) versus Group B (April 2010 to December 2011). The background to the study is 'An alteration in patient access to primary dental care instituted by the Department of Health in April 2010'.

Objectives: a) to identify any alteration in the pattern and complexity of patients' presentation with odontogenic infections following recent changes in access to treatment via the Dental Treatment Services Scheme (DTSS) and the Dental Treatment Benefit Scheme (DTBS) in April 2010; and, b) to evaluate the management of severe odontogenic infections.

Method: Data was collated by a combination of a comprehensive chart review and electronic patient record analysis based on the primary discharge diagnosis as recorded in the Hospital In-Patient Enquiry (HIPE) system.

Results: Fifty patients were admitted to the National Maxillofacial Unit, St James's Hospital, under the oral and maxillofacial service over a four-year period, with an odontogenic infection as the primary diagnosis. There was an increased number of patients presenting with odontogenic infections during Group B of the study. These patients showed an increased complexity and severity of infection. Although there was an upward trend in the numbers and complexity of infections, this trending did not reach statistical significance.

Conclusions: The primary cause of infection was dental caries in all patients. Dental caries is a preventable and treatable disease. Increased resources should be made available to support access to dental care, and thereby lessen the potential for the morbidity and mortality associated with serious odontogenic infections. The study at present continues as a prospective study.

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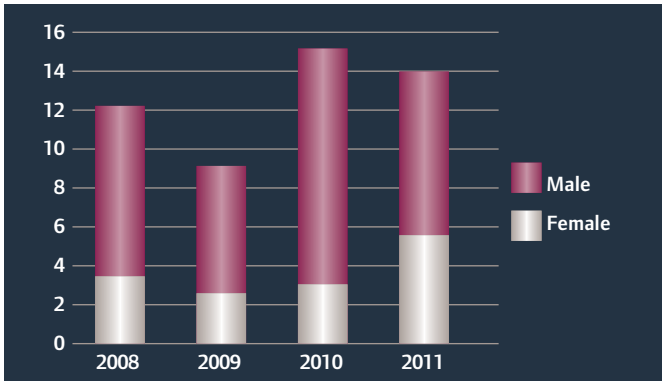

FIGURE 1: Number of patients admitted per year.

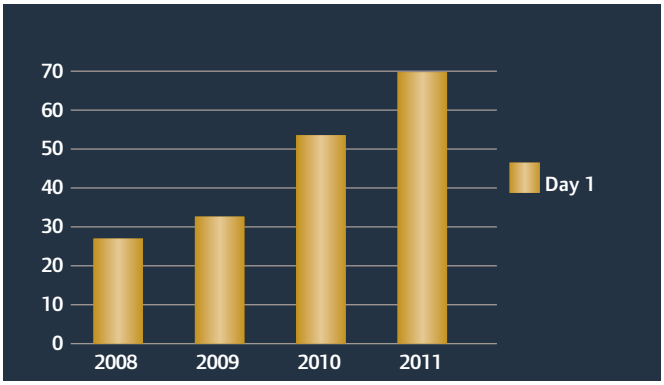

FIGURE 2: Percentage of patients attending theatre on the first day of admission.

Introduction

Spreading dental orofacial infections are potentially life threatening. The airway can be compromised and there is also the potential for spread to the deep anatomical fascial spaces and the mediastinum.[1] Patients commonly present to oral and maxillofacial surgery units for the acute management of severe odontogenic infections.[2] There is a significant morbidity, and on occasion mortality, associated with these infections. There remains a reported mortality of 8% from deep cervical abscesses, despite early antibiotic and surgical management.[1,3]

In April 2010 the Department of Health and Children altered the access to primary dental care for a significant percentage of the population. Two million people are entitled to benefit under the Dental Treatment Benefit Scheme (DTBS, i.e., pay-related social insurance [PRSI] payers and their dependant spouses). A further 1.4 million people are covered under the Dental Treatment Services Scheme (DTSS, i.e., people entitled to a medical card). The current economic difficulty in Ireland has resulted in fewer patients attending for regular dental care. Since 2010, most patients with a medical card are now only entitled to an annual oral examination and two emergency fillings or extractions free of charge. Those who are covered under the PRSI scheme are now only entitled to an annual oral examination.[4]

In the United Kingdom, research has shown a dramatic increase in the number of patients requiring admission for the management of spreading dental infections following the alteration from the fee per item system in 2006 to a banding system within the UK National Health Service.[5]

This study aims to evaluate whether the alteration in access to primary dental care has resulted in a changing pattern of patient presentation at the acute hospital setting for the management of severe dentofacial infections, and also to develop best evidence-based practice for the management of these patients.

Methods

This retrospective study was conducted at the National Maxillofacial Unit, St James's Hospital, one of the largest urban hospitals in Ireland. Children are not treated in this hospital and were not included in the study. The study evaluated patients with a primary discharge diagnosis of odontogenic maxillofacial infection. These patients were retrospectively identified and selected from St James's Hospital patients with WHO ICD 10 discharge codes: K122 (cellulitis and abscess of the mouth); J391 (other abscess of the jaw); K052 (acute periodontitis); K113 (abscess of salivary gland); and, K102 (inflammatory conditions of the jaw) between January 1, 2008, and December 31, 2011. Information was gathered by a combination of chart review and electronic patient record analysis to ensure that only patients with an odontogenic infection were included. Those with non-odontogenic infections were excluded. The following information was sourced from the database: patient demographics; referral source; length of hospital stay; infection source; investigations undertaken; documentation of mouth opening; antimicrobial therapy; and, management undertaken by the oral and maxillofacial surgery team. The information collected was analysed using a Microsoft Excel database. The study population (n = 50 patients) was divided into two groups as follows: Group A – January 2008 to March 2010 (26 months); and, Group B – April 2010 to December 2011 (20 months). The alteration in the schemes for patient access to primary dental care commenced in April 2010.

Results

Fifty patients were admitted to the National Oral & Maxillofacial Unit over the study period (January 2008 to December 2011) with severe odontogenic infections. The study population (n = 50) was divided into two groups as follows: Group A (Period 1: January 2008 to March 2010 [26 months], 21 patients; and, Group B (Period 2: April 2010 to December 2011 [20 months], 29 patients). The alteration in patient access to primary dental care occurred in April 2010. This represents a 38% (21 vs 29 patients) increase in the number of patients admitted to hospital in the two years following the introduction of the changes in access to dental care. A trend towards increasing admissions is observed after the implementation of the changes to the patients' entitlements under the DTSS and PRSI schemes (**Figure 1**). The increase in patient numbers, although showing an upward trend, was not statistically significant; however, of note, the timeframe for Group A (26 months) was less than the timeframe for Group B (20 months), but despite this there was a 38% increase in the numbers of patients presenting.

Gender

A male to female predominance was seen each year, with a total of 34 males (68%) and 16 females (32%) (**Figure 1**). There were 14 males and seven females in Group A and 20 males and nine females in Group B.

Age

The age range was 15-91 years, with a mean of 38.5 and median of 33 years (**Figure 2**). There was a non-significant increase in age in Group A (34.2) versus Group B (41.2) ($p = 0.33$).

Table 1: Patient referral source

Referral source	%	n
Acute hospital	52	26
GDP/GMP	20	10
Dental hospital	16	8
Self-referral	12	6

Table 2: Percentage of involvement of fascial space

	%	n
Submandibular	42	21
Buccal	16	8
Infraorbital	12	6
Parapharyngeal	8	4

Table 3: Comparison of patient groups

	Group A 2008/2009	Group B 2010/2011
Mean age	34.26	41.20
Gender	14 M 7 F	20 M 9 F
Referral source	15 acute hospital 6 primary care	27 acute hospital 2 primary care
Involved tooth	LL7	LL6/LL7
Length of hospital stay	4.18	6.79
CT scan	2/21	15/29
General anaesthesia	14/21	21/29
Local anaesthesia	5/21	5/29

Referral source

Tertiary referrals from other acute hospitals were the most common referral source (n = 42, 84%), where oral and maxillofacial services are not available, with the further referrals from primary carers, namely general medical practitioners and dentists (n = 8, 16%). In Group A there were 15 acute hospital referrals versus six from primary care, and in Group B there were 27 acute hospital versus two primary care referrals.

Comorbidity

Predisposing factors such as alcoholism, immunosuppression, uncontrolled diabetes mellitus and multiple underlying medical conditions are reported to increase the risk of odontogenic infection. Medical history was recorded in all patients (n = 50). A total of 76% (n=38) of patients had an unremarkable medical history. One patient had documented evidence of type II diabetes mellitus. Other conditions recorded included hypertension, alcoholic liver disease, hypothyroidism, COPD, ischaemic heart disease and hyperlipidaemia. No patients were on steroid therapy, chemotherapy or radiotherapy.

Admission temperature

Admission temperature in the emergency department was recorded in 44% of cases (n = 22). A pyrexia is considered to be a temperature of greater than 37.5˚C.[6] Only one case of pyrexia was recorded in these patients at 38.5˚C. No pyrexia was recorded in Group A and one pyrexia was recorded in Group B.

Trismus

Mouth opening was identified in 40% (n = 20). The interincisal distance recorded ranged from 3-30mm, with a mean of 17.4mm. Severe trismus can lead to increased difficulties for anaesthetic colleagues, with intubation often requiring the use of awake fibreoptic intubation and operative difficulties in relation to tooth extraction. The mean mouth opening was 11.5mm in Group A versus a mean of 18.6mm in Group B.

Tooth involvement

Chow *et al*. in 1978 identified how infections most commonly involve the mandibular molar teeth.[7] In this study, 58% (n = 29) of the carious teeth involved the mandibular molar teeth. The mandibular second molar was the tooth most frequently involved (24%, n = 12). The left side is more frequently involved than the right. Dental caries was the only cause of odontogenic infections identified. The involved tooth was most commonly the mandibular left second molar in Group A, versus the mandibular left second molar and mandibular left first molar in Group B.

Anatomic space

Odontogenic soft tissue infections usually spread through the fascial spaces in their vicinity. The most frequent single space infection was the submandibular (42%, n = 21), followed by the buccal (16%, n = 8), infraorbital (12%, n = 6) and parapharyngeal (8%, n = 4). There were five submandibular space infections in Group A versus 16 in Group B. Multi-space infections most frequently involve the submental and submandibular spaces bilaterally, giving rise to Ludwig's angina, which occurred in 8% (n = 4).

Radiographic investigations

Facial radiographs, including orthopantomogram (OPG) or computed tomography (CT) scans, were performed on all patients on admission. In Group A, 2/21 patients had a CT whereas in Group B 15/29 had a CT.

Admission white cell count

All patients had an initial full blood count carried out. Leucocytosis was identified in 44% (n = 22), with an elevated white cell count (WCC) above the laboratory reference ranges of 4-11 x 10^9. The WCC ranged from 3.8-23.8, with a mean of 11.09. There was a non-significant difference between Group A and Group B (p = 0.5).

Hyperglycaemia

Fasting and/or random blood glucose levels were checked in 74% (n = 37) of patients. A total of 16% (n = 6) of these patients demonstrated hyperglycaemia. This may signify the presence of underlying diabetes mellitus or the body's response to stress, which the infection causes. There were three patients in both Group A and Group B.

Antimicrobial management

All patients received high dose intravenous antibiotics. The most commonly prescribed regimen consisted of broad-spectrum cover with co-amoxiclav and metronidazole given to the patients empirically on admission. Patients with an allergy to penicillin were treated with intravenous clindamycin. A microbiological swab was sent for culture and sensitivity in 58% (n = 29). In 22% of cases (n = 11), the choice of antibiotic was changed or an additional antibiotic was required. This was due to an infection not responding to treatment, or when culture and sensitivity results from a microbiological swab of the abscess advised a change of regimen.

Surgical management

Some 92% (n = 45) of patients required surgical intervention from the oral and maxillofacial team. This included formal incision and drainage of the abscess in 28% (n = 14), or incision and drainage with dental extractions also

being performed in 62% (n =3 1). Some 10% (n = 5) of patients were treated by antibiotics only and did not require surgical intervention.

Some 70% (n = 35) of patients who required operative interventions were managed under general anaesthetic, with the remaining 22% (n = 10) of procedures being performed under local anaesthetic. Fourteen operations were performed under general anaesthetic in Group A compared to 21 under general anaesthetic in Group B.

The length of time from admission to surgical intervention was assessed, with 44% (n = 22) of patients brought to the operating theatre on the first day of admission over the four-year period. It was found that an increased number of patients were brought to theatre on the first day of admission as the years progressed: eight patients in Group A compared to 14 patients in Group B.

Length of stay

The length of stay (LOS) ranged from two to 37 days, with a median of 5.5 days. The LOS increased from 4.18 days in Group A to 6.79 days in Group B. This difference in LOS was not statistically significant (p = 0.33).

Discussion

This study has shown that odontogenic infections are a significant source of morbidity. It is accepted that these infections also have the potential for mortality in the population. The study reviewed 50 patients over a four-year period. The retrospective nature of the study would predispose to an underestimation of the number of patients presenting with odontogenic infection requiring hospital admission, and an upward trend during the study period is evident. It is likely that many more patients are suffering from dental abscesses, not requiring hospital admission, and are managed in the community. Changes in patient access to primary dental care since April 2010, and the burden this has placed on the population with medical card and DTBS entitlements, has placed a barrier for patients receiving appropriate and timely primary dental care. This has led to the worrying trend of increasing numbers of patients accessing the emergency department, and ultimately requiring secondary and tertiary level care for the management of dental infections. This pattern of clinical presentation and treatment of these patients also has significant financial implications for the health service with the need for prolonged hospital and often ICU admission, investigations, advanced imaging and surgical care. This is particularly relevant in regard to dental caries, which is a preventable and treatable disease, invariably treatable in a primary dental care setting.

Odontogenic infections are more common in males and this is reflected in our and other studies.[8] This male–female predominance has been documented in several similar studies, including a five-year retrospective study at San Francisco General Hospital, where a 65% male predominance was seen.[9]

Infections of dental origin affect a very wide age range.[8,10] Age was not a statistically significant factor in increased admissions between the 2008/2009 cohort and the 2010/2011 cohort (p = 0.33). It is hypothesised that the older population may be at less risk because they have fewer teeth. However, this is likely to change due to better oral hygiene and dental care leading to patients retaining their teeth for longer. However, all adults in Ireland over 70 years are entitled to a medical card, so arguably they have been most affected by the decreased availability of services on the scheme, and the advantages accrued by earlier action will be reduced.

The most frequent source of referrals are other acute hospitals, and this highlights the need for improved access to primary dental care at an earlier point in the disease process. Dental caries is both a preventable and treatable disease. There was an alarming trend, with an 80% (n = 12) increase in referrals from acute hospitals between the 2008/2009 cohort and the 2010/2011 group. This is at variance with other studies but may reflect the centralisation of the oral and maxillofacial service in Ireland.[2]

The presence of coexisting medical conditions can increase the risk of developing severe infection or sepsis. Peters *et al*. in 1996 showed the underlying medical condition and the location of the infection to be the best predictors of length of hospital stay.[8] However, the majority of our patients had an unremarkable medical history, which highlights the unpredictable nature of odontogenic infections and again is indicative of advanced untreated dental disease.

Temperature is an accepted clinical predictor of acute infection and a way to monitor the patients' response to treatment.[10] An area of poor record in the study is that admission temperature in the emergency department is recorded in less than half the patients (44%, n = 22). This may reflect a deficiency in the record keeping, but temperature is recorded routinely on the wards.

The clinical examination is critical in the assessment of these patients with reference to the severity of the infection and the potential for airway compromise. Restricted mouth opening is an important predictor of the difficulty of intubation and is important for operative access. With trismus identified in 40% (n = 20) of the patients, the early consultation with anaesthetic colleagues is essential to avoid the possibility of making a difficult intubation even more cumbersome. Early intervention is of importance in these cases.

This study confirms the results of previous studies in relation to the mandibular dentition being the source of the majority of the infection, with the left second molar tooth being most commonly associated.[7] The submandibular space is most frequently involved, which is unsurprising given the anatomic relationship to the roots of the posterior mandibular molar teeth.

The increased use of CT in relation to odontogenic infection over time is indicative of the increased concern for potential airway compromise. It also reflects the increased access to CT technology, which has significantly improved clinicians' knowledge of the extent of the disease.

However, it also highlights the increased use of a valuable resource to treat an essentially preventable disease. This may suggest a trend towards more serious infection in which it was felt the airway was compromised and a CT would be required to allow the anaesthetist to assess the difficulty of intubation preoperatively.

Peters *et al*. concluded that the WCC on admission appears to have positive correlation to the length of hospital stay.[8] However, with less than half of the study population showing a leucocytosis on admission, the importance of good clinical examination is emphasised. Further analysis is required to rationalise whether WCC is most useful in assessing improvement or regression of a patient's response to therapy, rather than as a predictor of actual patient status. The initial WCC on presentation to hospital was not statistically significant between the two groups analysed (p = 0.5). However, a trend towards increased WCC on presentation was noted.

All patients required high dose intravenous antibiotics. In 10% (n = 5), surgical intervention was not required. However patients were admitted for the administration of the antibiotics and the monitoring of vital signs and

supportive care. Despite the conclusions of Wang *et al*., culture and sensitivity is an important part of the management, as this led to a change of antibiotic regimen in some cases and reflects the complex microbial environment of odontogenic infections.[9] Burnham *et al*. in 2011 highlighted the overprescription of antibiotics by non-dental trained health professionals in the UK, without adequate follow-up or intervention.[5] Ideally, dental abscesses should be seen and managed early in the community with oral antibiotics and treatment of the cause, with extraction or drainage if needed. The patient should then be reviewed to ensure that the infection has not progressed to a cervicofacial infection.[2,12]

Most patients in this study required surgical intervention, either formal incision and drainage, alone or with extraction of the offending teeth. This showed a worrying increase in the number of patients requiring surgical intervention for severe odontogenic infections secondary to dental caries, a condition that is preventable and eminently treatable in the early stages. Interestingly, a higher percentage of patients were brought to theatre on the first day of admission – 38% in Group A compared to 48% in Group B – likely reflecting the more advanced and complex nature of the abscess at presentation. Similarly, this early operative intervention had little impact on length of stay, with the average LOS at 4.9 days in 2008 and 5.6 days in 2011. Again, it is likely that these patients were more seriously septic and took more time to improve despite efficient drainage and antimicrobial therapy. This is unsurprising, as it has been shown that operating room use is a strong predictor of hospitalisation duration.[8] The majority of patients required a general anaesthetic, which in itself is associated with morbidity and mortality.

Severe odontogenic infections can vary from a local swelling to a life-threatening condition.[3,12,13] Patients usually remain hospitalised until the infection resolves or is controlled, and the patient has returned to their baseline functional status. The number of patients with an LOS of greater than four days was also analysed, as this is defined as an unfavourable outcome according to Peters *et al*.[8] After the introduction of the changes to access to dental care in 2010, in excess of 50% of patients had an LOS greater than four days, indicating more serious infection. However, due to the relatively small numbers of patients in both cohorts, the LOS analysed was not statistically significant ($p = 0.33$).

It was also found that location of infection had a significant impact on length of stay.[8] Some 8% ($n = 4$) of patients in our study developed Ludwig's angina with no mortality reported. Patients seriously ill from these odontogenic infections commonly require admission to an ICU for airway management and other supportive care. Death from isolated dental infection is rare, but progression to Ludwig's angina increases the risk of mortality.[3,14,15] This highlights the advanced nature of these serious dental infections involving bilateral submental and submandibular spaces and with the mortality associated with Ludwig's angina recognised at 10%. Early aggressive surgical drainage, with adjunctive intravenous antibiotics and supportive care, are critical to ensuring a good outcome.

Conclusion

Odontogenic infections are serious infections with the potential for significant morbidity and potential mortality if treatment is delayed or neglected.

The number of patients requiring secondary and tertiary care for the treatment of odontogenic infections has increased since the introduction of the changes in access to primary dental care in April 2010.

The mean length of stay is increasing, with most patients having an in-patient hospital stay of 5.5 days.

There is increased use of valuable resources at a secondary level for a preventable and treatable disease, which ideally would be treated in the primary care setting.

The primary cause of the odontogenic infection was dental caries in all patients. Increased resources should be made available to reduce barriers to access and thereby lessen the potential for morbidity and mortality associated with serious odontogenic infections.

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Fundamentals of occlusion and restorative dentistry. Part I: basic principles

Abstract

This article presents the basic principles of dental occlusion and an overview of this subject area, which is important for dental professionals.

Clinical relevance: A sound knowledge of dental occlusion is important in order to improve dental treatment outcome and achieve a long-lasting restoration.

Introduction

One of the goals of restorative treatment is maintenance and/or re-establishment of a good dental occlusion when the treatment is completed.[1,2] Therefore, restorative treatment should be aimed at the achievement of smooth unhindered mandibular movements during function. The outcome should not result in an occlusal interference, nor should it lead to generation of excessive force on the teeth, the periodontal apparatus or the temporomandibular joints (TMJs).[3,4] All members of the masticatory system should work in harmony and accommodate the changes in occlusal morphology of the finished restoration well.[4] Therefore, dentists must have a sound knowledge of dental occlusion and masticatory systems.

This article provides clarification of the basic principles of dental occlusion, as well as an overview of this subject area, which is vital for every dental student and dentist. To avoid confusion, the terms and definitions of the *Glossary of Prosthodontics*[5] are used.

Occlusion

Occlusion is the static relationship between the incising or masticating surfaces of the maxillary or mandibular teeth or tooth.[5] It is a static position, as the mandible is not moving. On the other hand, the dynamic relationship of the mandible to the maxilla is known as an articulation, and indicates the contact relationship between the incising or masticating surfaces of the teeth during function and mandibular movements.[4,6]

Temporomandibular joint

To understand how the mandible moves, it is important to know the anatomy of the TMJ. Basically, the TMJ consists of the glenoid fossa, the condyle and the articular disc, which is located between the condyle and the fossa, and divides the joint into lower and upper compartments (**Figure 1**). The upper compartment is located between the inferior surface of the glenoid fossa and the superior surface of the articular disc. In this compartment only translational movements occur.[7] The lower compartment exists between the superior surface of the condyle and the inferior surface of the articular disc. In this compartment only rotational movements occur. A synovial membrane lines the joint capsule and produces the synovial fluid that fills these two compartments.[8]

The articular disc is composed of avascular fibrous connective tissue.[7] It has three well-defined regions: the anterior; intermediate; and, posterior bands.[4,8] The disc has a very low coefficient of friction and is stabilised between the condyle and the articular eminence by its thick rim, which has special viscoelastic properties.[9] An important masticatory muscle is the lateral pterygoid muscle, which has two heads: the superior, and, inferior. The superior head is attached to the articular disc and the inferior head is attached to the neck of the condyle.[10] Nonetheless, it has been reported that the superior head of the lateral pterygoid muscle is attached to the anterior medial portion of the capsule, with varying degrees of attachment to the lateral aspect of the capsule.[10] Parts of the superior head of the lateral pterygoid muscle were also reported to attach to the mandibular condyle. However, no direct insertion of

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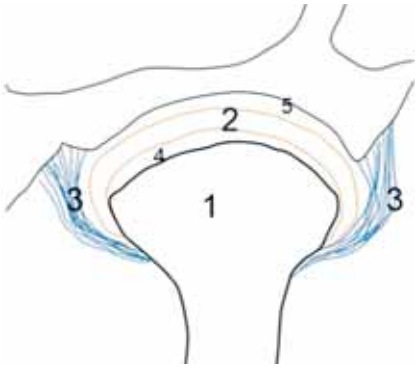

FIGURE 1: Structures of the temporomandibular joint.

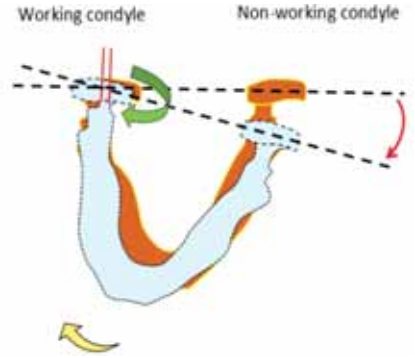

FIGURE 2: Working and non-working condyles.

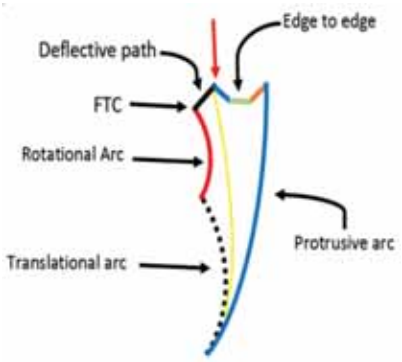

FIGURE 3: Centric relation and maximum intercuspal position of the mandible on the mandibular border movements in the sagittal plane.

the superior head of the lateral pterygoid muscle into the disc was found.[10] The posterior band of the disc is attached to two layers: a superior (elastic); and, an inferior (inelastic) layer. The two layers are collectively known as a bilaminar (retrodiscal) zone. The superior layer, being elastic, allows the disc to maintain its relationship with the condyle during translational mandibular movements. The inferior layer is inelastic; therefore, it maintains a normal relationship between the disc and the condyle. In the bilaminar zone blood and nerve supply are present. The joint is also composed of ligaments such as the stylomandibular and temporomandibular ligament. The joint is also surrounded by a capsule. The various structures of the TMJ are displayed in **Figure 1**.

Types of mandibular movements

The mandible can perform two types of movements: translational and rotational. In general, translational movements occur when all parts of a body move in the same direction at the same speed. In the TMJ, the condyle and disc move together along the articular eminence as in the mandibular protrusive movements. This movement takes place in the upper joint compartment. Rotational movement occurs when the condyle rotates around an imaginary axis. These rotational movements occur in the lower joint compartment.

Rotational mandibular movements are described around three imaginary axes: horizontal (also known as the terminal hinge axis; THA); vertical; and, sagittal. The THA is an imaginary axis, which passes through the two condyles. In centric relation (CR), the mandible can only execute hinge opening and closing. These rotational movements occur in the sagittal plane and in the range of 20-25mm when measured between the upper and lower incisors.

The vertical axis passes through the working condyle during lateral excursion of the mandible. The sagittal axis is an anteroposterior axis, which passes through the working condyle during the lateral excursion of the mandible. In this case the non-working condyle is seen rotating downwards and medially.

Working and non-working side

During mandibular lateral excursions, the side of the mouth to which the mandible has moved is known as the working side, while the side of the mouth from which the mandible has moved away is known as the non-working side. The condyle of the working side is denoted as the working or rotating condyle, and the condyle of the non-working side is called a non-working or orbiting condyle. While the working condyle rotates around the vertical axis during mandibular lateral excursion, it may also move laterally as well as backwards, upwards and downwards (**Figure 2**). However, the translatory part of lateral movement of the mandible in which the non-working condyle moves is straight and medial as it leaves the CR.[5] This movement is known as an immediate side shift. This side shift describes a lateral translation of the mandible towards the working side in which the non-working condyle moves medially before its forward movement occurs. This was previously called the Bennett movement. It is important to highlight that this immediate side shift represents the lateral movement of the whole mandible sideways towards the working side, and it precedes the rotational movement of the working condyle.[5,11,12] The amount of the immediate side shift may differ among patients and bilaterally within patients.[13]

There is also another side shift called a progressive side shift. This represents a translatory portion of mandibular movement as viewed in a specific body plane and occurs at a rate or amount that is directly proportional to the forward movement of the non-working condyle.[5] Both movements (immediate and progressive) represent the lateral translation movement of the mandible and have an effect on the occlusal morphology of teeth, and consequently on mandibular movements.[11-13]

It is important to mention that the immediate and progressive side shifts describe the lateral translation of the mandible towards the working side in relation to the movement of the non-working condyle. Furthermore, both movements have a role to play in mandibular lateral excursive movements.

Mandibular positions

Two mandibular positions are important from a restorative point of view, i.e., maximum intercuspal position (MIP) and CR.[15] MIP is also known as maximal intercuspation, intercuspal position, habitual occlusion, habitual centric, centric occlusion and acquired centric. CR is also called centric maxillomandibular relationship (CMMR) and retruded axis position.[4,6]

Maximum intercuspal position

MIP is defined as the complete intercuspation of the opposing teeth independent of condylar position in the glenoid fossa, also referred to as the best fit of the teeth regardless of the condylar position.[5] It is a tooth-determined position, in which the mandible occupies its most cranial position as it is stopped definitively by the tooth contact.[17-20] In MIP the condyle-disc assembly is usually anterior and inferior and/or medial or lateral, or a

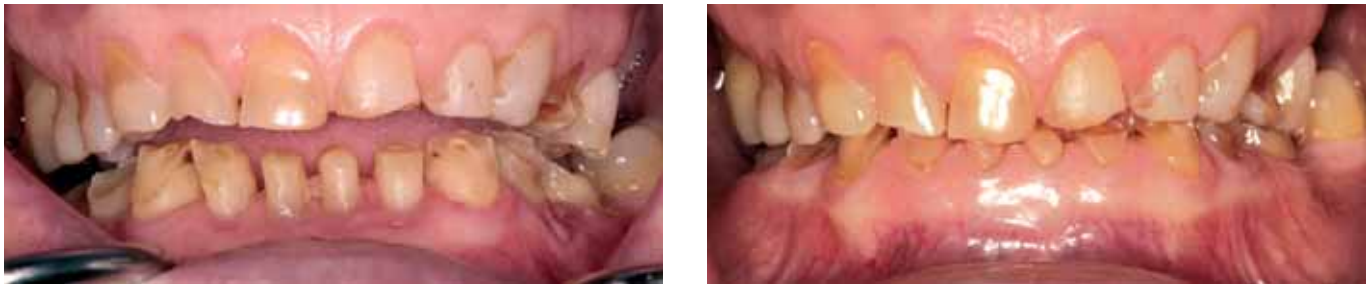

FIGURE 4: Two clinical pictures in which the centric relation is used to restore the form and function.

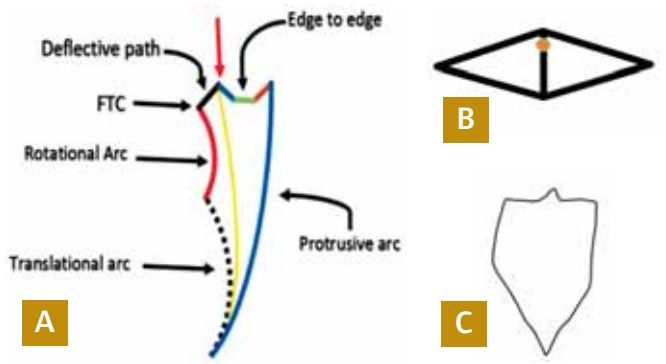

FIGURE 5: Movements of the lower incisors when viewed in the sagittal, frontal or horizontal plane.

combination of the above, compared to their position in CR. The average distance between CR and MIP in 90% of the population is 0.5-2mm.[20,21] In this position, a maximum occlusal force can be applied and the maximum number of occlusal contacts is found. Therefore, it is the position of maximum stability of the mandible. MIP provides a steady position for the mandible during swallowing and severe physical exertion.[6,16,22] In a subject with normal physiological occlusion the MIP is a precise, readily identifiable position when an adequate number of posterior teeth is present. It is the most commonly used reference position in the clinic.[17,18,23]

Centric relation

CR is a position of the condyles when they articulate with the thinnest avascular portion of their respective discs and the condyle-disc assembly is in the anterior-superior position against the articular eminences.[5,6] This position is independent of tooth contact. The CR is actually not a mandibular position but an axis around which the mandible can rotate. It is restricted to a purely rotational movement about the THA.[6,19] The CR is clinically identifiable, recordable and reproducible in patients with no pain or derangement in the TMJ.[6,20] The position of the condyle in CR is usually taken as a starting point when the MIP is not satisfactory, or when occlusal rehabilitation is needed (**Figures 3** and **4**) and is also used in edentulous patients when complete dentures are planned.

In order to record the CR clinically, several methods are used. These include bimanual mandibular manipulation with or without a jig, chin point guidance with or without a jig, and Gothic arch tracing. The bimanual manipulation method has been found to be more consistent than the other two methods.[14] The CR and MIP of the mandible on the mandibular border movements in the sagittal plane are shown in **Figure 3**.

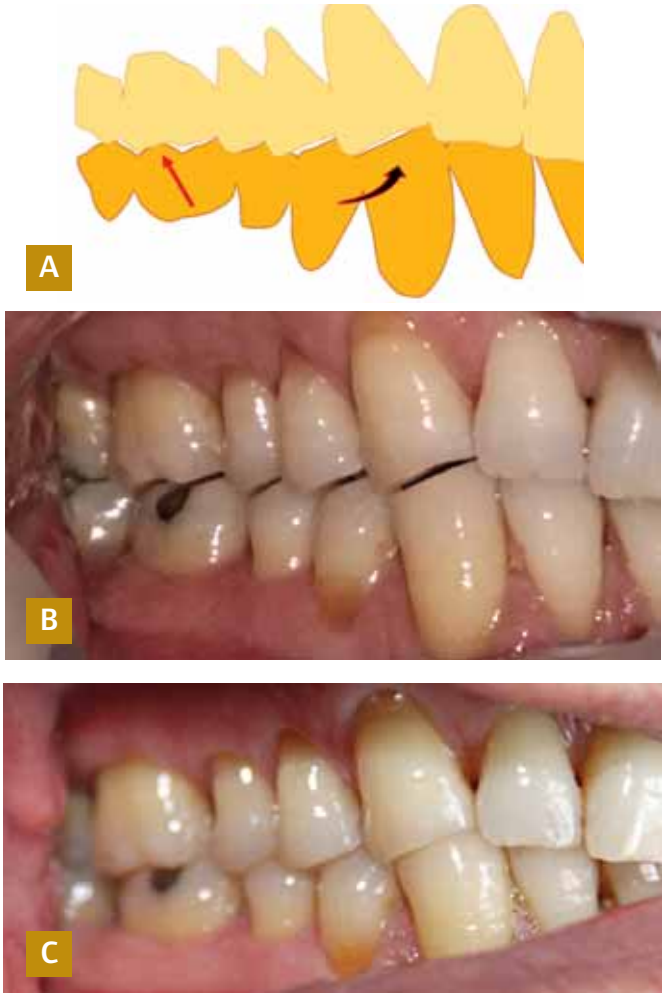

FIGURE 6: Schematic (A) and clinical pictures (B and C) represent the mandible when it is at the first tooth contact position (B) and when the mandible is pushed into the MIP (C). The red arrow indicates the FTC between the mesial inclined of the disto-buccal cusp of the upper first molar and the distal incline of the disto-buccal cusp of the lower first molar in the CR. The black arrow shows forward and upward mandibular movements as the mandible is pushed by the FTC if the patient is asked to close his/her mandible.

Border movements of the mandible (**Figures 3**, **5** and **6**)

Extreme or border movements of the mandible are described as an envelope of motion or Posselt's envelope of motion.[17,20,24] These movements can be demonstrated by tracing the movements of the lower incisors when viewed in the sagittal, frontal or horizontal plane (**Figure 5**).

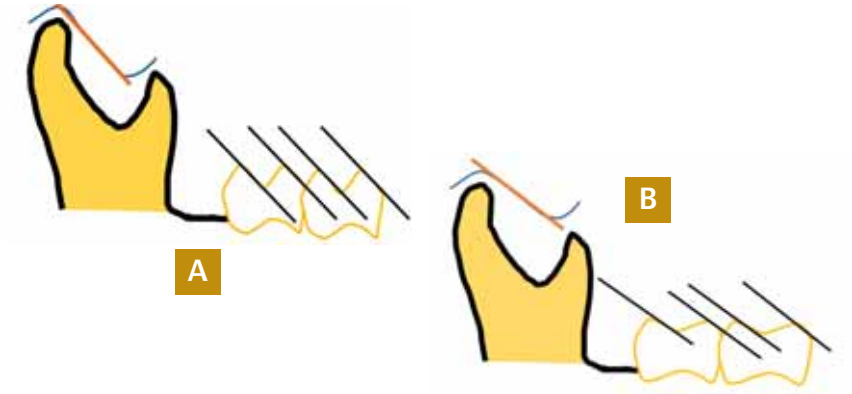

FIGURE 7: The greater the angle of the articular eminence, the greater the steepness of the cuspal angle and the deeper the fossa.

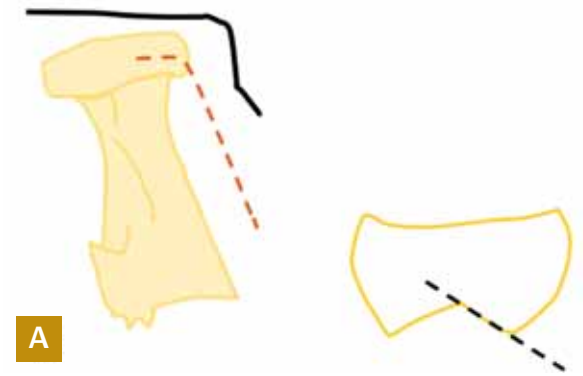

FIGURE 8A: Immediate side shift.

The cranial extent of Posselt's envelope of motion is controlled by the teeth, while the mandibular movements along all other borders and within the envelope are mainly controlled by the TMJ. The border movements can be described as follows:

1. The mandible initially opens with a hinge movement about the THA, with the condyles in the CR. The red arc in **Figure 5** represents this rotational movement. This creates an incisal separation of 20-25mm.
2. If the mandible is guided to move along the arc of rotation in the CR, it usually slides on the upper tooth/teeth, which then bring the mandible into the MIP. The tooth contact in this position is known as first tooth contact (FTC) or slide or retruded contact (RC) (**Figures 5** and **6**). The FTC guides the mandible along the deflective path (black slope in **Figures 3** and **5**) into the MIP. This movement usually has both vertical and horizontal components, and is typically less than 1mm in the anteroposterior direction. Clinically, this contact may be identified when the patient is relaxed and the clinician guides the mandible into the CR and then the patient is asked to close.

   It is also important to mention that the patient usually avoids the FTC and closes the mandible straight to the MIP along the habitual path (yellow arc in **Figures 3** and **5**).
3. The upper limit of the envelope of motion consists of edge-to-edge relationship, incisal guidance, MIP and FTC.
4. On further opening, the condyles translate downwards and forwards along the articular eminences of the glenoid fossa to a point of maximum opening. This movement represents the mid-sagittal depression during the clinical examination. The transitional arc is represented by a dashed line in **Figures 3** and **5**.

Table 1: Examples of anterior and posterior determinants and their effects

Determinant	Condition	Effect: degree of the cuspal angle
Condylar guidance	Steeper	More steep
Immediate side shift	Greater immediate side shift	Less steep
Anterior guidance	Greater vertical overlap (overbite)	More steep
	Greater horizontal overlap (overjet)	Less steep
Curve of Spee	More acute curve	Less steep

5. When the mandible moves from the maximum mouth opening in the upward and protrusive direction (blue arc in **Figure 5**) until the lower teeth make contact with the upper teeth, this arc of movement is known as a protrusive arc. It represents the extreme movement of the mandible in a protrusive direction.

Determinants of occlusion

Occlusion and mandibular movements are controlled by three determinants (factors): the TMJ, known as the posterior determinant; the teeth, known as the anterior determinant; and, the overall neuro-masticatory system (**Table 1**). Clinicians have no control over the posterior determinants (TMJs), as these are unchangeable, but they can change the anterior determinant (teeth) to good or bad.[14] The neuro-masticatory system is required to deal with what we have restoratively created.

A. The posterior determinant: TMJ

The influence of the TMJ on mandibular movements can be expressed by the inclination of the articular eminence (condylar inclination), the morphology of the medial wall of the glenoid fossa and the shape of the condyle. These three factors influence the mandibular movements, as they dictate the direction, duration and timing of mandibular movements and consequently affect occlusal morphology such as steepness of the cuspal angle and the direction of ridges and grooves.[12] For instance, the shape and angle of the articular eminence of the glenoid fossa affect the movement of the mandible and teeth by the path that the condyles must travel when the mandible moves. The range of angulation of articular eminence at the midpoint inclined plane is between 17 and 77 .

The posterior determinant can be divided into vertical factors that affect the steepness of the cuspal angle and horizontal factors that affect the ridge and groove directions of the occlusal morphology. Only a few examples of these factors are discussed in this article:

1. Condylar inclination denotes the angle at which the condyle descends along the articular eminences in the sagittal plane. For example, the greater the angle of the articular eminence, the greater the steepness of the cuspal angle and the deeper the fossa (**Figure 7**). When the mandible protrudes, the posterior part of the mandible drops down in a greater angle than if the angle of the articular eminence is less steep. Therefore, the prospective restoration with a steep cuspal angle is permissible as the teeth are less likely to clash.

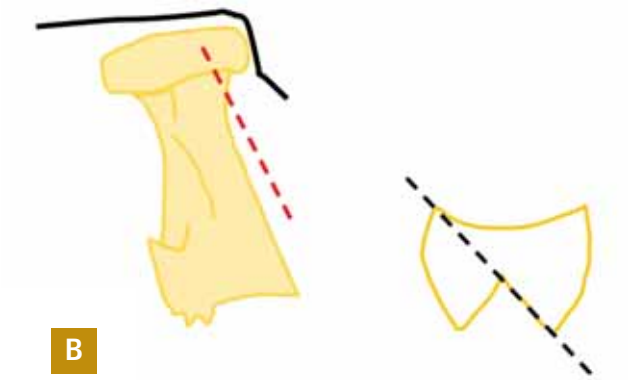

FIGURE 8B: Steep cuspal angle.

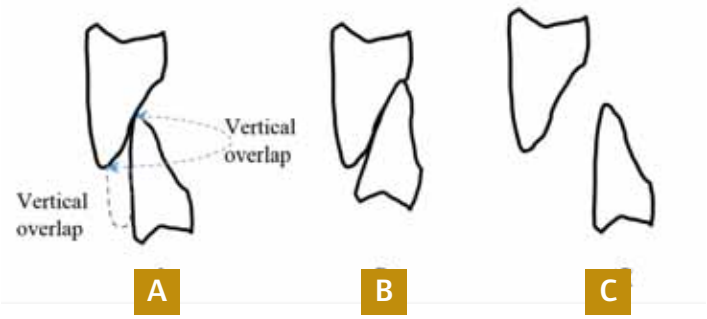

FIGURE 9A-C: Incisal guidance.

2. Mandibular side shift and the steepness of the cuspal angle
   The mandible may bodily shift sideways during its lateral movements as mentioned earlier. If there is a bodily shift, there will be a downwards, forwards or medial component. During lateral excursion movement, the non-working condyle moves downward, inward and forward. The inward movement of the non-working condyle is affected by two anatomical factors: (1) the morphology of the medial wall of glenoid fossa and its proximity to the medial pole of the non-working condyle; and, (2) the inner horizontal part of the temporomandibular ligament that is attached to the lateral pole of the working condyle. These two factors dictate if there will be a lateral mandibular side shift (immediate or progressive).[12] For example, if the temporo-mandibular ligament attached to the working condyle is tight and the medial wall of the glenoid fossa is close to the medial pole of the non-working condyle, no immediate side shift will occur and therefore a steep cuspal angle is allowed (**Figure 8B**). However, if the temporomandibular ligament is loose and a space exists between the non-working condyle and the medial wall of the glenoid fossa, an immediate side shift will occur (**Figure 8A**). When teeth are restored, the presence of an immediate side shift allows a lesser steepness of the cuspal angle, shorter cusps and a shallower fossa, and also requires grooves to let the opposing cusp escape. A progressive side shift allows for a steeper cuspal angle, greater cusp height and consequently a deeper fossa (**Figure 8B**).

It is important to mention that both the direction and timing of the side shift also affect the steepness of the cuspal angles. Additional to its rotating movement, the working condyle can also move superiorly, inferiorly, posteriorly and anteriorly. All these movements influence the occlusal morphology of the teeth.

Also, downward movements of the non-working condyle in relation to the horizontal plane affect the occlusal morphology of posterior teeth, as the greater the angle of the path, the greater the steepness of the cuspal angles and the deeper the fossa.

B. The anterior determinant: teeth

The anterior determinant indicates factors within dentition that influence the occlusal morphology and the mandibular movements. The posterior teeth provide end-stop (vertical stop) of the mandible, while the anterior teeth guide the mandible into the MIP and also in the right and left excursion, and in protrusive movements. However, in a patient with an anterior open bite, the influence of anterior teeth is lost and the posterior teeth may guide the mandible during the lateral excursions and protrusive movements. It is important to note that the anterior determinant represents both anterior and posterior teeth and their effect on the mandibular movements, and not only anterior teeth. Examples of elements of the anterior determinant:

1. Incisal guidance (vertical and horizontal overlap of anterior teeth).
2. Occlusal plane.
3. Curve of Spee.
4. Curve of Wilson.

1. Incisal guidance **(Figure 8)**

Incisal guidance indicates the effect of the contacting surfaces of the maxillary and mandibular anterior teeth on the mandibular movements. This guidance forms an angle with the horizontal plane. It is represented by the vertical (overbite) and horizontal overlap (overjet) of the anterior teeth. When the mandible moves from the MIP to an edge-to-edge relationship, their path is determined by the palatal surfaces of the maxillary anterior teeth (**Figures 3**, **5** and **9**). The angle and length of the movement is determined by the incisor relationship. For instance, in Class II division 2 occlusions, the movement is almost vertical, as the lower incisors are locked palatal to the upper incisors and cannot easily slide forward (**Figure 9B**). Consequently, when the vertical overlap is increased the cusps of the posterior teeth can be longer and vice versa. However, when horizontal overlap is considered, the greater this overlap the shorter the cusp height will be in order to avoid cusp collision. On the other hand, when this horizontal overlap is reduced, the cusp height increases.

The anterior teeth are suitable to guide the mandible in protrusive and lateral excursions. Firstly, the anterior teeth (including canines) usually have a vertical overlap, which allows them to disengage the posterior teeth when the mandible moves from the MIP. Secondly, the heights of cusps of the posterior teeth decrease posteriorly, which also facilitates their disengagement when the mandible moves from the MIP. Thirdly, the mandible is a type III lever (like a nut cracker); hence, the occlusal force on these teeth will be less than that imposed on the posterior teeth. Fourthly, the proprioceptors' threshold and reflex reaction reduces the load on anterior teeth.[6,14] Then, anterior teeth are suitable to protect the posterior teeth during excursion movements of the mandible without a negative effect being imposed on them.

The incisal guidance is of paramount importance for function, aesthetics and phonetics. Therefore, when the incisal guidance is satisfactory, it should be

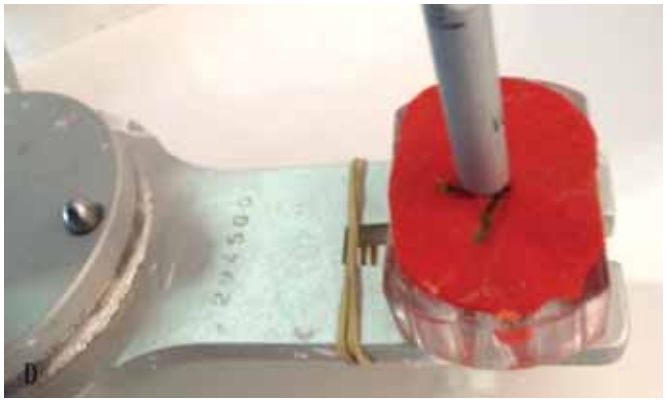

FIGURE 9D: Incisal guidance.

FIGURE 9E: Incisal guidance.

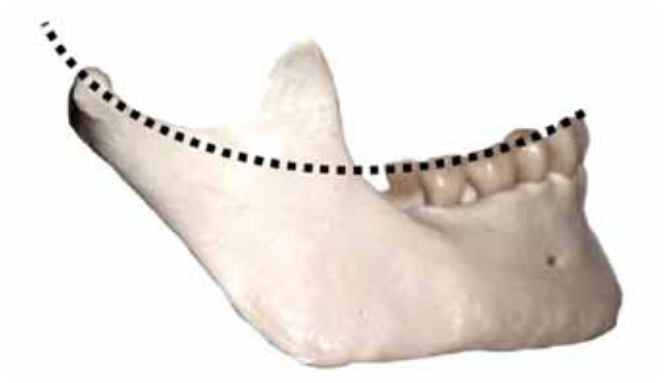

FIGURE 10: Curve of Spee.

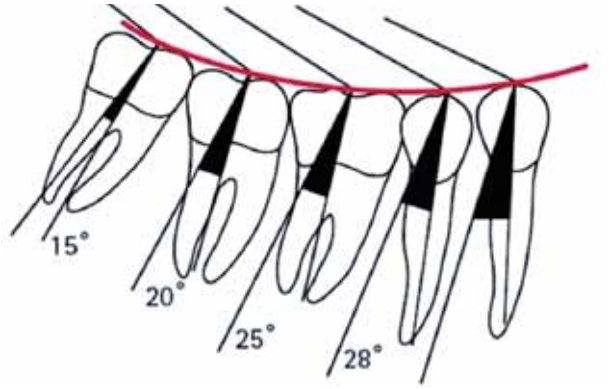

FIGURE 11: The long axis of each mandibular posterior tooth is aligned parallel to the arc of closure; therefore, maximum resistance to occlusal force is achieved.

maintained whenever possible, or should be copied in the new restoration when the involved anterior teeth are being restored. This can be achieved by customising the incisal guidance and copying the palatal surface of these teeth in an impression from which the technician can transfer the palatal surface of the teeth to the restorations, or by using a custom-made incisal guidance (**Figures 9D** and **9E**).

2. Plane of occlusion

This is defined as the average plane established by the incisal and occlusal surfaces of the teeth.[5] Therefore, it is an imaginary plane that touches the incisal edges of anterior teeth and the cusp tips of the posterior teeth.[12] The cusp angles of posterior teeth are influenced by the relationship between the occlusal plane and the articular guidance. Consequently, when the angle of the occlusal plane is parallel or almost parallel to the condylar guidance, the cusp height must be short and vice versa.

3. Curve of Spee (**Figures 10** and **11**)

This is the antero-posterior curve that touches the tips of the canine and the functional cusps of the mandibular posterior teeth. It then extends distally through the ramus and passes through the condyle.[25,26] The design and location of the curve will serve two important purposes:

a. The long axis of each mandibular posterior tooth is aligned parallel to the arc of closure; therefore, maximum resistance to occlusal force is achieved, as most of the periodontal ligaments are involved in dissipation of imposed occlusal force (**Figure 11**).
b. Posterior disclusion is more easily obtained when the mandibular occlusal plane is flat or convex. Even when the incisal guidance is flat, the forward movement of the condyle on the articular eminence is at an angle that is steeper than the posterior part of the occlusal plane, which will lead to posterior disclusion.

The curvature of the curve of Spee can be described according to the length of the radius of the curve. The length of the radius of this curve has an effect on the occlusal plane and on the cusp heights of posterior teeth. When the radius of the curve is long (less concave/less acute), the occlusal plane is flatter than when the radius is short (more concave/more acute).[12] The amount of separation (disclusion) between the mandibular and maxillary posterior teeth is dependent on the length of the radius of the curve of Spee such as when the radius is short, the separation is greater and the posterior cuspal angles are steeper than when the radius is longer.

The curve of Spee may be pathologically altered by rotation, tipping and over-eruption of teeth. For example, an over-erupted tooth, after extraction of opposing tooth/teeth, may lead to occlusal interferences and disturbance in the occlusal plane and curve of Spee (**Figure 12**). Corrections of such

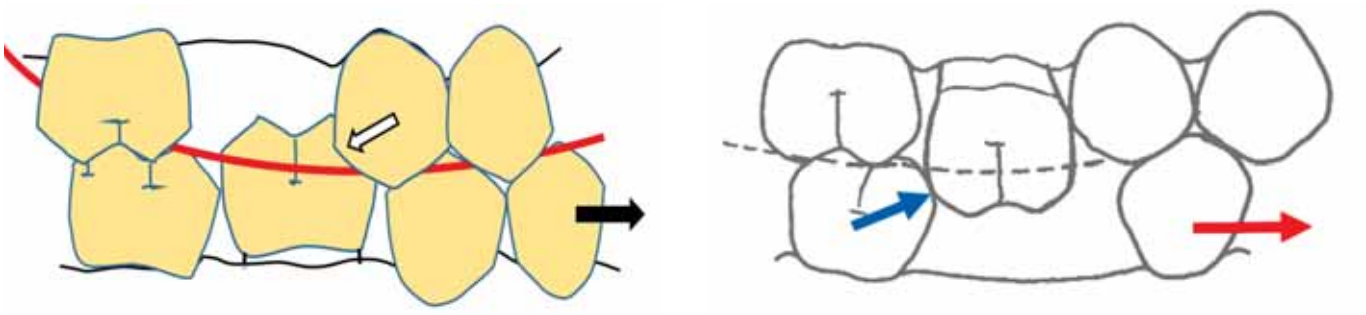

FIGURE 12: An over-erupted tooth, after extraction of opposing tooth/teeth, may lead to occlusal interferences and disturbance in the occlusal plane and curve of Spee.

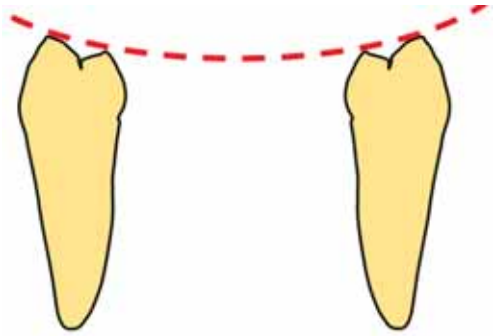

FIGURE 13: Curve of Wilson.

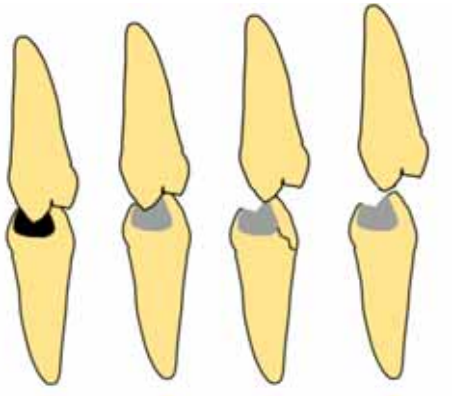

FIGURE 14: Tilted maxillary palatal cusp is below the curve of Wilson. Correction is necessary before restorative treatment can be carried out.

disruption may be required before restorative interventions can be carried out. The corrections include enamelo-plasty, when a minimum correction is required, or orthodontic tooth intrusion, elective endodontic treatment, or extraction of a causative tooth/teeth in severe cases.

4. Curve of Wilson (**Figure 13**)

This is the bucco-lingual (mediolateral) curve that contacts the buccal and lingual cusp tip on each side of the arch. It results from inward inclination of the mandibular posterior teeth and outward inclination of the upper posterior teeth.[25] The curve of Wilson is important to the masticatory system in two ways. Firstly, an optimum resistance to masticatory forces is achieved as teeth are aligned parallel to the direction of the medial pterygoid muscles, which are one of the major elevator muscles of the mandible. Secondly, the level of the lingual cusps of the mandibular teeth allows the tongue to bring food to the occlusal table and the elevated buccal cusps prevent food from going past the occlusal table. Also, the lower level of the maxillary palatal cusps prevents food from going past the occlusal table.[25]

A disturbance in the curve of Wilson may create an occlusal interference. For example, when a maxillary palatal cusp is tilted so it becomes below the curve of Wilson, a non-working side interference may be created and its correction is necessary before restorative treatment can be carried out, as displayed in **Figure 14**.

Canine guidance

The Glossary of Prosthodontic Terms[5] defines canine guidance as a form of mutually protected occlusion in which the vertical and horizontal overlap of the canine teeth disengage the posterior teeth in the excursive movements of the mandible. Accordingly, when the mandible moves to one side, the overlap of canines results in separation (disclusion) of posterior teeth on the working side.[21,27,28] The mandible is guided by the canines during its lateral excursions with posterior teeth disclusion (**Figure 15**). In lateral mandibular excursions, the vertical and horizontal overlap relationships of the canines should be enough to disclude all other teeth. Canine guidance is more commonly seen in young patients whose canines are not worn.[29] It may also be created by adding restorative material (such as composite) when a posterior fixed prosthesis or implant-retained fixed prosthesis is planned in order to protect it.

Canine teeth are suitable to guide the mandible during its excursive movement for many reasons, as previously mentioned. Furthermore, canines have a favourable root anatomy and a lower crown–root ratio. They are also supported by sense and compact bone, which tolerate occlusal forces better than cancellous bone. In addition to this, they have a strategic position in the jaws.

Group function

Group function is defined as multiple contact relations between the maxillary and mandibular teeth in lateral movements on the working side whereby

FIGURE 15: The canine guidance occlusion.

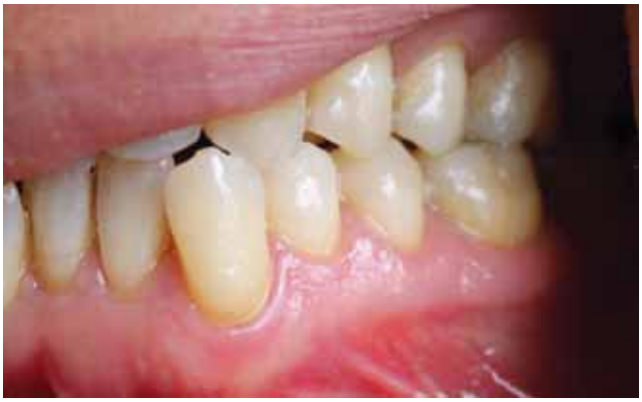

FIGURE 16: The group function occlusion.

simultaneous contact on several teeth acts as a group to distribute occlusal forces.[5] When the mandible moves to one side, two or more pairs of opposing teeth guide the mandible (**Figure 16**).[21,27,28,30] Ideally, contacts should be between canines, premolars and the mesiobuccal cusp of the first molar. The group function occlusion can be seen in patients whose canines were worn away or are missing, thus allowing the posterior teeth to come in contact during lateral movements of the mandible.[21,27,28,30] It may also be found in Class III malocclusion when the anterior teeth are in an edge-to-edge position, or have a reverse horizontal overlap.

Group function occlusion may be planned when the anterior teeth have lost a considerable amount of their periodontal support. It is often necessary to allow the posterior teeth to share the occlusal forces and to guide the mandible with the anterior teeth. The advantage of group function occlusion is that the occlusal forces are shared among several teeth. However, the occlusal forces are not along the long axis of the involved teeth and, therefore, only part of the periodontal ligaments are involved in dissipation of occlusal forces.

Group function is indicated in cases of anterior open bite, when the alignment of the anterior teeth (canines) does not allow disclusion of posterior teeth on the working and non-working side, as well as when the crown–root ratio is significantly increased, as in patients with clinical attachment loss. Furthermore, it is indicated in Class I malocclusion, in which the horizontal overlap (overjet) increases to a degree in which canine guidance cannot be obtained. Therefore, these factors are to be considered when the choice between canine and group function is being made.

It is also important to remember that another type of occlusion, known as balanced occlusion, is described in the literature. It indicates simultaneous occlusal contacts of the upper and lower teeth on the right and left side of the jaw, in the anterior and posterior regions when the mandible is in MIP, and during excursive movements. It is a prosthetic term used to stabilise the denture during function. It is not applicable for normal dentitions and therefore should be avoided.

Table 2: Records used to register the static and dynamic occlusion

Static records	Centric relation Maximal intercuspal position Lateral and protrusive positions
Dynamic records	Immediate side shift Progressive side shift Condylar guidance Condylar path Incisal guidance

Recording of factors that affect occlusal morphology

Several materials are used in registration of the static and dynamic occlusion. To be suitable to record the occlusion precisely, they should not interfere with the mandibular movement. They should be accurate enough to record sufficient details that enable the cast to be oriented correctly. They also need to be sufficeintly rigid not to become distorted during handling and the mounting procedure. The most commonly used materials are wax or silicone impression materials.

The recording materials are not required when the MIP is satisfactory. Witness marks are used to enable the clinician/technician to relate the lower cast to the upper cast in a simillar relationship to that of the mouth. It should be understood that the casts do not represent the actual picture of the mouth, as some variations do exist. The teeth may be displaced when the patient closes his/her mouth as periodontal ligaments are resilient and easily disturbed. This phenomenon is not present in casts. However, when the MIP is not reproducible by the best fit, interocclusal recording materials such as wax, silicone or acrylic may be used to relate the casts in the MIP when a sufficient number of teeth are present. This makes the identification of the MIP possible. Incisal guidance can be customised and used in the construction of the palatal surfaces of the maxillary anterior teeth when they are involved in the preparation of the prospective restorations (**Figures 9D** and **9E**). **Table 2** displays the static and dynamic occlusal factors than can be recorded clinically and transferred to the articulators.

Conclusion

Basic knowledge of occlusion is needed for a better dental treatment outcome. Therefore, clinical examination, which consists of examination of the TMJ, teeth and soft tissue as well as the periodontium, should be carried out before commencement of dental treatment. Furthermore, several factors that influence mandibular movements during function should be considered, as they may be negatively changed and consequently lead to unintended outcomes.

Acknowledgement

The authors would like to thank Dr Rami Al Fodah, a postgraduate student at the Dublin Dental University Hospital, for providing **Figure 4**.

Cytokine expression in peri-implant crevicular fluid in relation to bacterial presence

Renvert, S., Widén, C., Persson, G.R.

Aim: The aim was to assess clinical inflammatory parameters, cytokine levels, and bacterial counts in samples from implant crevicular fluid in cases with untreated peri-implantitis.
Material and methods: Several bacterial species known to up-regulate pro-inflammatory cytokines have been associated with peri-implantitis. The Luminex magnet bead technology was used to study cytokines in crevicular fluid. The checkerboard DNA-DNA hybridisation method was used to study bacterial counts in samples from 41 implants (41 individuals).
Results: Profuse bleeding and suppuration was found in 25/41 (61.0%) and 17/41 (41.5%) of the implants. The reliability of duplicate cytokine processing was high. In the presence of profuse bleeding, higher pg/ml levels of IL-1β ($p = 0.016$), IL-8 ($p = 0.003$), TNF-α ($p = 0.024$), and VEGF ($p = 0.004$) were found. Higher concentrations of IL-1β were found in the presence of suppuration, and if *Escherichia coli* ($p = 0.001$) or *Staphylococcus epidermidis* ($p = 0.05$) could be detected.
Conclusion: Profuse bleeding and/or suppuration in untreated peri-implantitis can be associated with higher concentrations of IL-1β, IL-8, TNF-α and VEGF in peri-implant crevicular fluid. A higher concentration of IL-1β in peri-implant crevicular fluid was found in samples that were positive for *E. coli* or *S. epidermidis*.

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Association between developmental defects of enamel and dental caries: a systematic review and meta-analysis

Vargas-Ferreira, F., Salas, M.M., Nascimento, G.G., Tarquinio, S.B., Faggion Jr., C.M., Peres, M.A., et al.

Background: Dental caries is the main problem in oral health and it is not well established in the literature if enamel defects are a risk factor for its development.
Objective: Studies have reported a potential association between developmental defects enamel (DDE) and dental caries occurrence. We investigated the association between DDE and caries in the permanent dentition of children and teenagers.
Data sources: A systematic review was carried out using four databases (Pubmed, Web of Science, Embase and Science Direct), which were searched from their earliest records until December 31, 2014.
Study selection: Population-based studies assessing differences in dental caries experience according to the presence of enamel defects (and their types) were included. PRISMA guidelines for reporting systematic reviews were followed. Meta-analysis was performed to assess the pooled effect, and meta-regression was carried out to identify heterogeneity sources. From the 2,558 initially identified papers, nine studies fulfilled all inclusion criteria after checking the titles, abstracts, references, and complete reading. Seven of them were included in the meta-analysis with random model.
Results: A positive association between enamel defects and dental caries was identified; meta-analysis showed that individuals with DDE had higher pooled odds of having dental caries experience [OR 2.21 (95% CI, 1.3; 3.54)]. Meta-regression analysis demonstrated that adjustment for socio-demographic factors, countries' socioeconomic status, and bias (quality of studies) explained the high heterogeneity observed.
Conclusion: A higher chance of dental caries should be expected among individuals with enamel defects.

J Dent 2015; 43 (6): 619-628.

Water fluoridation for the prevention of dental caries

Iheozor-Ejiofor, Z., Worthington, H.V., Walsh, T., O'Malley, L., Clarkson, J.E., Macey, R., et al.

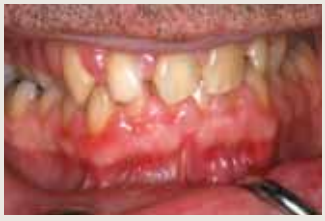
Background: Dental caries is a major public health problem in most industrialised countries, affecting 60% to 90% of school children. Community water fluoridation was initiated in the USA in 1945 and is currently practised in about 25 countries around the world; health authorities consider it to be a key strategy for preventing dental caries. Given the continued interest in this topic from health professionals, policy makers and the public, it is important to update and maintain a systematic review that reflects contemporary evidence.
Objectives: To evaluate the effects of water fluoridation (artificial or natural) on the prevention of dental caries. To evaluate the effects of water fluoridation (artificial or natural) on dental fluorosis.
Search methods: We searched the following electronic databases: The Cochrane Oral Health Group's Trials Register (to February 19, 2015); The Cochrane Central Register of Controlled Trials (CENTRAL; Issue 1, 2015); MEDLINE via OVID (1946 to February 19, 2015); EMBASE via OVID (1980 to February 19, 2015); Proquest (to February 19, 2015); Web of Science Conference Proceedings (1990 to February 19, 2015); and, ZETOC Conference Proceedings (1993 to February 19, 2015). We searched the US National Institutes of Health Trials Registry (ClinicalTrials.gov) and the World Health Organisation's WHO International Clinical Trials Registry Platform for ongoing trials. There were no restrictions on language of publication or publication status in the searches of the electronic databases.
Selection criteria: For caries data, we included only prospective studies with a concurrent control that compared at least two populations – one receiving fluoridated water and the other non-fluoridated water – with outcome(s) evaluated at at least two points in time. For the assessment of fluorosis, we included any type of study design, with concurrent control, that compared populations exposed to different water fluoride concentrations. We included populations of all ages that received fluoridated water (naturally or artificially fluoridated) or non-fluoridated water.
Data collection and analysis: We used an adaptation of the Cochrane 'Risk of bias' tool to assess risk of bias in the included studies. We included the following caries indices in the analyses: decayed, missing and filled teeth (dmft (deciduous dentition) and DMFT (permanent dentition)); and, proportion caries free in both dentitions. For dmft and DMFT analyses we calculated the difference in mean change scores between the fluoridated and

control groups. For the proportion caries free we calculated the difference in the proportion caries free between the fluoridated and control groups. For fluorosis data we calculated the log odds and presented them as probabilities for interpretation.

Main results: A total of 155 studies met the inclusion criteria; 107 studies provided sufficient data for quantitative synthesis. The results from the caries severity data indicate that the initiation of water fluoridation results in reductions in dmft of 1.81 (95% CI, 1.31 to 2.31; nine studies at high risk of bias, 44,268 participants), and in DMFT of 1.16 (95% CI, 0.72 to 1.61; 10 studies at high risk of bias, 78,764 participants). This translates to a 35% reduction in dmft and a 26% reduction in DMFT compared to the median control group mean values. There were also increases in the percentage of caries-free children of 15% (95% CI, 11% to 19%; 10 studies, 39,966 participants) in deciduous dentition, and 14% (95% CI, 5% to 23%; eight studies, 53,538 participants) in permanent dentition. The majority of studies (71%) were conducted prior to 1975 and the widespread introduction of the use of fluoride toothpaste. There is insufficient information to determine whether initiation of a water fluoridation programme results in a change in disparities in caries across socioeconomic status (SES) levels. There is insufficient information to determine the effect of stopping water fluoridation programmes on caries levels. No studies that aimed to determine the effectiveness of water fluoridation for preventing caries in adults met the review's inclusion criteria. With regard to dental fluorosis, we estimated that for a fluoride level of 0.7ppm, the percentage of participants with fluorosis of aesthetic concern was approximately 12% (95% CI, 8% to 17%; 40 studies, 59,630 participants). This increases to 40% (95% CI, 35% to 44%) when considering fluorosis of any level (detected under highly controlled, clinical conditions; 90 studies, 180,530 participants). Over 97% of the studies were at high risk of bias and there was substantial between-study variation.

Authors' conclusions: There is very little contemporary evidence, meeting the review's inclusion criteria, that has evaluated the effectiveness of water fluoridation for the prevention of caries. The available data come predominantly from studies conducted prior to 1975, and indicate that water fluoridation is effective at reducing caries levels in both deciduous and permanent dentition in children. Our confidence in the size of the effect estimates is limited by the observational nature of the study designs, the high risk of bias within the studies and, importantly, the applicability of the evidence to current lifestyles. The decision to implement a water fluoridation programme relies upon an understanding of the population's oral health behaviour (e.g., use of fluoride toothpaste), the availability and uptake of other caries prevention strategies, their diet and consumption of tap water, and the movement/migration of the population. There is insufficient evidence to determine whether water fluoridation results in a change in disparities in caries levels across SES. We did not identify any evidence, meeting the review's inclusion criteria, to determine the effectiveness of water fluoridation for preventing caries in adults. There is insufficient information to determine the effect on caries levels of stopping water fluoridation programmes. There is a significant association between dental fluorosis (of aesthetic concern or all levels of dental fluorosis) and fluoride level. The evidence is limited due to high risk of bias within the studies and substantial between-study variation.

Cochrane Database Syst Rev 2015; 6: CD010856. [Epub ahead of print]




Quiz answers

(questions on page 167)

- Assessment must include a thorough medical history. Particular attention should be paid to the patient's age, medication and the possibility of pregnancy. Check for a history of granulomatous conditions such as Crohn's disease or sarcoidosis. Any report of fatigue, weight loss, malaise, sore throat or skin infections should also be noted.
- Patients should be asked about possible mouth breathing and the wearing of any dental prosthesis.
- Take a history of the complaint, including site and the onset of enlargement/swelling, presence of any pain or bleeding, any associated factors, or lesions elsewhere on the body.
- Extra-orally, look for any notable swelling. Palpate lymph nodes and check for swelling of the parotid glands.
- Intra-orally, assess oral hygiene. Evaluate the fit of any dental prosthesis.
- Examine the teeth. Record mobility and the presence of plaque retentive factors. Assess the vitality of teeth adjacent to a gingival swelling.
- Examine the area of gingival enlargement – localised or generalised, the area of gingiva involved, and proximity to other structures (origin from tooth, fitting surface of dental prosthesis, etc.). Record the size, number of swellings and the shape (pointed, pedunculate, nodular, etc.). Note the appearance and colour of the area, e.g., dry, shiny, pale, red, deep red. Note any bleeding or ulceration. Palpate the enlargement for tenderness, discharge from pockets, fixation, fluctuance and surface texture. Check for petechia or ecchymoses. Measure the probing pocket depths of adjacent teeth and assess for possible periodontal abscess.

Often a diagnosis can be made based on presentation. Additional special tests may include:

- radiography;
- blood investigations; or,
- biopsy.

SITUATIONS VACANT

Full-time experienced associate required for a busy practice in Westport, Co. Mayo. Replacing departing colleague. Please reply with CV to reception@drrosemarysmith.com.

Associate required – South West. Flexible, experienced associate required. Start July 2015. Busy modern computerised practice. Two surgeries. Knowledgeable supportive staff. Excellent figures. Short-/long-term position. Email with CV and personal profile to niall@innovativedental.com.

Co. Clare. Associate dentist required for two/three days initially, in Ennis, to replace departed colleague. Would suit an experienced friendly person with a long-term view. Email CV to dfmahony@eircom.net.

Experienced full-time associate wanted in busy modern practice, southeast region. Skilled support staff and high earning potential. Replacing departing colleague. July start available. Please send CV to southeastdental46@gmail.com.

Full-time associate position available in West Cork from July 1. Very busy, state-of-the-art practice with excellent support staff. Candidate must have a passion for high quality dentistry and outstanding communication skills. New graduates considered. Email reception@bantrydental.ie.

Associate wanted Waterford City. Experience preferable but not essential. Suit young enthusiastic dentist. Email dolphindental7@gmail.com.

Eyre Square Dental requires a full-time associate. This is an opportunity to join a busy, private practice offering treatments from fillings to full mouth rehab. To apply call 091-562 932, or Email details to paula@eyresquaredental.ie.

Looking for an experienced and professional associate to replace departing colleague two to three days a week in our city centre practice in Limerick. Mostly private. Cerec Omnican, OPT, CT scanner, good support staff. Start ASAP. Please Email drodonovan@dentalimplantsireland.com.

Associate dentist with experience required for one day a week in busy, modern family practice in Celbridge, Co. Kildare. Digital x-ray. Good private/public mix. Replies by Email to brian.corcoran26@gmail.com.

Associate/partner wanted in beautiful Argyll, Scotland. A short advert can't even begin to do justice to our beautiful location, fabulous practice, staff and patients. Please see www.argyll-smile.com and contact us for more information on this exciting opportunity. Email shona@argyll-smile.com.

Dental associate required two to three days per week in modern dental practice Bray, Co. Wicklow. Enthusiasm and interest in further education desirable. Excellent opportunity to expand skill set with full support of the team. Email info@avondaledentalclinic.com.

Dental associate required two to three days per week in very modern dental practice in Dublin. Enthusiasm and ability to see medical card patients necessary. Please email your CV to Subahu.shah@smartdentalcare.co.uk.

Associate dentist required, five days per week, hours 8.00am-5.00pm Monday to Friday. Two to three years' experience required. Clinic located in Sandyford and Dublin city centre. Email dentistpop@outlook.com.

Full-time associate required for established, busy multi-surgery dental practice in Ballinasloe, Co. Galway. OPG, intra-oral camera available. Experienced team support. Excellent opportunity for an enthusiastic dentist. Email CV to rothwellauct@eircom.net.

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, September 11, 2015, by cheque made payable to the Irish Dental Association. If a box number is required, please indicate this at the end of the ad (replies to box number X). Classified ads placed in the Journal are also published on our website www.dentist.ie for 12 weeks.

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

The maximum number of words for classified ads is 40.

If the advert exceeds 40 words, then please contact:
Think Media, The Malthouse, 537 North Circular Road, Dublin 1.
Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

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

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

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

South Dublin/North Wicklow. Part-time associate needed – Tuesday, Wednesday, Thursday, Saturday. Must be registered with Dental Council/have indemnity insurance in place. Good support staff/working conditions. Immediate start. Tel: 086-807 5273, or Email niall@innovativedental.com.

Associate dentist required for Essex, UK. Full-time position. Long-established practice. Non-corporate. Monday to Friday. No late evenings/weekends. Good UDA rate. 7000-8000 UDAs. Forty minutes from central London. Apply via Email to dockroaddental@gmail.com.

Brentwood, Essex (UK). Full-time associate required for busy family-run practice. Post to take on existing NHS commitment (7500 UDAs) with good scope for private work. Start September. Close to London/Stansted airport. Tel: (01277) 210213, or Email John: john@brentwooddentist.co.uk.

Associate dentist with experience required for high profile, modern, busy clinic in Co. Kildare. Purpose-built practice within a primary care centre. Three to four days per week. Start in late July. Email CV to andrewcox204@gmail.com.

Experienced associate required to replace departing colleague three to four days per week in our Dublin City Centre practice. Full book. Starting August. Email diamondsmiledental@gmail.com.

Cork City Centre – associate wanted with possible view to buy in 2016/2017. Long-established, quality dental practice. Email roger@horganbarrett.ie.

Associate dentist to replace departing colleague required for busy northside Dublin practice. Tel: 086-242 3014.

Enthusiastic dentist required for a part-time or full-time position to join our team at a modern practice with digital imaging in Dublin 16. Email siobhan.kbmdental@gmail.com.

Smiles Dental – exciting opportunity for an enthusiastic general dentist to join our new, state-of-the-art Smiles Balbriggan practice in Co. Dublin. Full-time basis. Candidates must have general private and public experience and be IDC registered. Email joanne.bonfield@smiles.co.uk.

Smiles Swords Dental Practice in Dublin is growing rapidly and now looking for an experienced general private and public dentist to join the team on a full-time basis. Candidates must be IDC registered. Email joanne.bonfield@smiles.co.uk.

Smiles Dental are looking for an enthusiastic, passionate dentist to join our well-established Smiles Clonshaugh Dental Practice in Dublin 17. Candidates must have general experience and be IDC registered. Full-time and part-time positions available. Email joanne.bonfield@smiles.co.uk.

Smiles Enniscorthy – exciting opportunity for an enthusiastic general dentist to join our well-established Smiles Enniscorthy practice in Co.Wexford. Full-time basis. Candidates must have general private and public experience and be IDC registered. Email joanne.bonfield@smiles.co.uk.

Dentists required – Dublin 15. Get rewarded for clinical excellence. Part-time positions with a view to building a book to full-time. Reply with CVs by email only to eoreilly@touchstone.ie.

We are looking for a part-time dentist in Dublin, with implant skills, to work one day a week for a fast expanding practice with ready and waiting patients for evenings, weekday and weekend sessions. Please email your CV to Subahu.Shah@smartdentalcare.co.uk.

South East. Friendly dentist required for part-time position – potential for full-time. Would suit a new graduate. Email southeastdentaljob@gmail.com.

Part-time dentist position available in Athy, Co. Kildare, short-/long-term. Wednesday and Thursday – immediate availability required. Two years' experience preferred, but graduates welcome. Please contact us by email at loretodentalsurgery@gmail.com.

Exciting opportunity for general dentist to join busy practice. Modern surgeries, great support, computerised, digital x-ray. Location Navan, 30 minutes from Dublin. Initially full-time locum for five weeks from July 27, 2015 with view to associateship. Experience preferred. CV to info@abbeydentalcare.ie.

Donegal. Full-/part-time dentist required to replace departing colleague in busy medical card/PRSI practice. Immediate start with long-term view. Experience essential. CV to Adrian.millen@tiscali.co.uk.

Limerick. Talented, ambitious dentist required for high profile, modern busy clinic. Part-time initially. Experience preferred. Email limerickdentaljob@gmail.com.

Clare. Dentist required to work between busy practices in Kilrush and Ennis, part-time initially. Computerised, OPG, digital radiography, intraoral cameras. Excellent terms for the right candidate. Email niallmcrty@gmail.com.

Enthusiastic part-time dentist required for Dublin 8. One to two sessions a week initially, days flexible. Please Email kilmainhamdental@gmail.com.

Locum dentist for days in July and August required in Dublin City Centre. Immediate availability, two to three years' experience preferred. Would suit young enthusiastic dentist. Email dentistsearch@outlook.com.

Maternity locum cover, Cork. Dentist required for maternity cover close to Cork City beginning Augist 20, 2015. One session per week on Thursday afternoon/evening. Fully private list. Experience of Six Month Smiles preferred but not essential. No agencies. Email info@airportdentalcork.com.

Part-time orthodontic practice in Ennis available due to colleague retiring. Established for 20 years. Huge potential for expansion. Part of a multi-surgery practice that includes three dentists, hygienist and an OPG. Contact gbrowne.ennis@eircom.net.

Hygienist wanted for busy modern South Dublin practice for two sessions per week. Please send a CV and cover letter to jobs@ballybrackdental.ie.

Dental hygienist wanted in Sligo Town part-time to begin, possibly leading to full-time position. Email CVs to info@ocmdental.com.

Part-time hygienist required in Spiddal. One day every two weeks. Good contract guaranteed. Email: lod@orthocosmetics.ie.

Hygienist required for part-time position in an expanding dental surgery in Navan. Email drawelsh@gmail.com.

Qualified dental nurse required for Kilkenny City orthodontic practice. We are seeking a warm friendly person with good communication and computer skills. Email application to reception@ormondorthodontics.ie.

Dental receptionist/nurse required in Portobello, Dublin 8. Candidate ideally (not essential) experienced and highly motivated. Friendly new practice. Please respond to dublincitydentistry@gmail.com. Salary 22-32K.

Full-time dental nurse required in a busy, fully computerised general dental practice. Experience preferred but not essential. Basic IT skills needed. Apply via email with CV to info@kenneallydental.ie.

Qualified nurse sought for thriving, modern practice in Kerry. The role will include treatment co-ordination and clinical assistance. Great career opportunity. Email dentalapplicationkerry@outlook.com.

Dental nurse required for part-time hours in North Dublin (Monday, Wednesday and Friday at present but may change). Must be hardworking, reliable and motivated. Team player essential. Immediate start. Email CV to glasnevindental@gmail.com.

Experienced dental nurse required in Co. Longford 30 hours a week. Busy modern surgery. Email exceldentalpractice@gmail.com.

Dental nurse required August, Rathfarnham, to replace colleague starting hygienist course. Well presented and conscientious. Any level of experience considered. Apply by Email with CV to info@rathfarnhamdental.com.

Dental receptionist required for Dublin 9 clinic. Successful candidate will be friendly, enthusiastic, and self-motivated with good people skills. Dental nursing experience will help. Computer skills and excellent English required. CV by email please. Email info@cahilldental.net.

Experienced nurse required for full-time job in busy D15 practice. Dedicated, hard-working, flexible. CV required. Email d15dentistry@gmail.com.

Busy specialist dental practice require a motivated, friendly dental nurse to join our team. Send CVs to claire@ncdental.ie.

Full-time nurse required to join busy expanding practice on the west side of Galway city. Experience essential and IT skills required. Email CV to barnadentalpractice@gmail.com.

Fully qualified dental nurse required to work full-time in our busy practice in Cork City. Computer literacy and good people skills are required. Available to start immediately. Please send CV with photo to hr@smilestore.ie.

Part-time, qualified, motivated, friendly dental nurse required for new practice. IT skills essential. Reception duties also. Email CV to info@drumcondravillagedental.ie.

Practice manager/receptionist required for full-time position in an expanding dental surgery in Navan. Must be computer literate and willing to work in a team environment. Nursing and management experience an advantage. Email drawelsh@gmail.com.

PRACTICES FOR SALE/TO LET

Co. Longford practice for sale. Well-established two-surgery practice with OPG unit for sale. Well maintained practice in large town. Owner retiring. Email in strictest confidence to info@medaccount.ie.

For sale – North Leinster. Well-established, patient-friendly practice. Single surgery with room to expand. Fully private practice. Low overheads/strong lease. Immediate sale/transfer of goodwill. Principal retiring. All flexible options considered. Negotiable price. Contact Niall, Tel: 086-807 5273, or Email niall@innovativedental.com.

Established practice for sale – 40 minutes from Dublin. Well-equipped surgeries, good support staff, for immediate sale. Email chs.dental@gmail.com.

EQUIPMENT FOR SALE/TO LET

Soredex Digital OPG for sale. Eight years old. Perfect condition. Support available for installation and maintenance in Ireland. Open to any reasonable offers. Email bridgeplacedental@outlook.com.

Two dome delivery units for sale. Corion counter tops. Brand new. Surplus to requirements. Can also be viewed at www.domeortho.com. Please contact Michael, Tel: 087-065 4620.

Two Adec chairs for sale: Cascade with over the patient delivery and Performer with radius delivery. Perfect condition. Email tooth11@gmail.com.

DIARY OF EVENTS

SEPTEMBER

10 Alexander Hotel, Dublin 2, 7.30pm
Metropolitan Branch IDA – joint meeting with Irish Endodontic Society
Speakers: Drs Ciaran O'Driscoll on 'Diagnostic dilemmas' and Edward O'Reilly on 'The hopeless incisor'.

12 The Gibson Hotel, Dublin Docklands
European Federation of Dental Hygienists (EDHF) Annual Meeting

18-19 City West Hotel, Dublin
IDENTEX

22-25 Bangkok Thailand
FDI 2015 Bangkok
For information, contact www.fdi2015bangkok.org.

26 Conrad Dublin Hotel, Earlsfort Terrace, Dublin 2
IAAGDS Annual Meeting – www.iaagds.ie.

OCTOBER

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

NOVEMBER

6-7 Gibson Hotel, Dublin City Centre
Irish Dental Hygienists Association Annual Winter Scientific Conference 2015
Further details on www.idha.ie.

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

JANUARY 2016

28 Alexander Hotel, Dublin 2, 7.30pm
Metropolitan Branch IDA – joint meeting with Irish Endodontic Society

FEBRUARY

26 Alexander Hotel, Dublin 2, 7.30pm IDA MEMBERS ONLY
Metropolitan Branch IDA – 'Wellbeing and Eliminating Stress'
Speakers: Drs Garry Heavey on 'Consent', Brid Hendron on 'Controlling stressful situations', and Eamonn O Muirchearthaigh on 'Preventing back pain'.

MARCH

10 Alexander Hotel, Dublin 2, 7.30pm IDA MEMBERS ONLY
Metropolitan Branch IDA – Meeting and AGM

APRIL

21-23 Radisson Hotel, Galway
IDA Annual Scientific Conference

In a new series for the *Journal*, we will speak to a member of the IDA in each issue about what membership means to them.

Making a difference

Dr Saoirse O'Toole is doing a PhD in dental erosion in King's College London, and also working as a clinical teacher, but that hasn't stopped her from getting involved in the IDA and becoming a member of Council.

What led you to first get involved in the IDA?

I first joined as a student because it was free. After a couple of years in England I came back to Ireland and I was looking to get more involved in the Irish dental community. Although I was already a member of the IDA, I hadn't previously served on any committees. Dr Gillian Smith suggested getting more involved and she put me forward for nomination for Council. I was seconded by Dr Ryan Hennessy and I was elected at the AGM in 2011 in Galway. It all happened quite quickly really.

How has that involvement progressed?

I was quite intimidated at my first meeting, but everyone was so friendly and welcoming that I was quickly put at ease. I was also made to feel that my contribution was valued.

I'm very interested in research and initially got involved in researching the topic of community water fluoridation for Council, preparing a one-page position paper with Dr Jacinta McLoughlin in the Dublin Dental School and Hospital. Everyone on the Council is a volunteer who gives up a huge amount of time, and I love being able to do a bit of research here and there to strengthen any arguments that we might make.

What has your involvement in the IDA meant to you?

It means a lot to me. For me the IDA is a fantastic resource not only for finding out what's going on within dentistry in Ireland, but also for talking about it with other dentists. I came back to Ireland during economic depression and the IDA gave me a platform to talk about the cuts in the medical card, the PRSI system and the decline in the oral health of the population.

I think the continuing work that the IDA is doing in attempting to highlight this to the Government is really important. I had no idea how much campaigning the IDA and IDU did until I started on Council. It is a great way of getting involved and feeling that you are in some way making a difference.

What has been the single biggest benefit of IDA membership for you?

That feeling of connection with the profession; getting to talk to other dentists about everything from practice to Government dental policies, and knowing what's going on. Dentistry can be quite isolating and frustrating when you aren't as established in your practice and area, and I found the IDA to be a great network of interested people.

How would you like to see the Association progress into the future?

I'd love to see more young people getting involved. It's so easy and important to get involved in your local branch and get talking to people. There is always a need for volunteers and everyone's opinions are taken on board. We are so small as a profession, that the more people that get actively involved, the stronger we are and the more able to make a difference as an organisation.

For now, Saoirse is working hard in London, with regular trips home for Council meetings. A keen swimmer and surfer, she misses the sea, but occasional trips to Cornwall will have to substitute for the west coast of Ireland for now.

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

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