

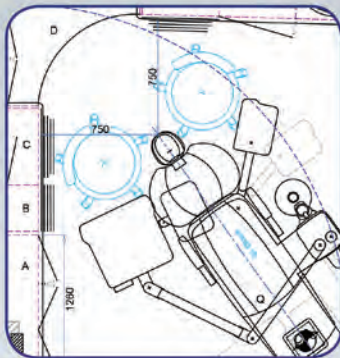
MID-life crisis

Minimum intervention dentistry for the
management of caries in older adults

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

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DESIGN/LAYOUT **Tony Byrne, Tom Cullen, Niamh Short**



Audit issue January-December 2018: **3,930** circulation average per issue. Registered dentists in the Republic of Ireland and Northern Ireland.

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



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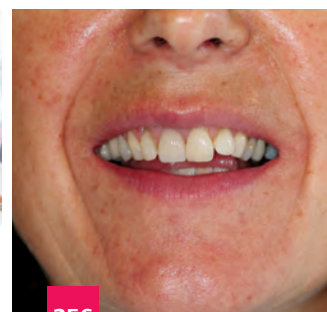
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Dr Ciara Scott
Honorary Editor

Professionalism under pressure

In this issue, articles highlight the dilemma faced by dentists in providing the best care for patients in a dysfunctional system.

I was just home from my first Ironman 70.3 when the proofs for this issue arrived. I laughed out loud when I saw 'Mid-life crisis' bannered across the cover. I felt like I had just conquered my own mid-life crisis and, despite training hard, felt more energetic. "Corpus sanum, mentum sanum" is not a new concept. Translated from the Latin, it means "a healthy body leads to a healthy mind".

It was fitting then that I was one of 400 delegates listening to David Monaghan speak at the Dental Protection Seminar in Dublin recently about the importance of practising self-care to manage stress and avoid burnout. He highlighted the potential risks to patients and dentists of putting patients first at the expense of our own well-being.

He also reported the findings from a recent study of Irish Dental Protection members. It was worrying to learn that so many dentists in Ireland felt that systematic failures compromised their ethical standards and that many did not feel supported by the regulator.

When the system fails

In 2015, Dr Bawa Garba, a junior doctor in the UK, received a criminal conviction for manslaughter and lost her professional reputation and right to practise when a child died, partly due to failings in the patient's care. This highly publicised case has led to an ongoing debate in the medical profession about a doctor's personal culpability in system failure. IT failure had delayed test results. Overstretched and unsupported on her first day in a new unit, emergencies interfered with handovers, assumptions led to communication failure and mistakes were made. Her own learning reflections were used against her in court. Doctors' groups campaigned for the General Medical Council decision to be overturned. I was one of a number of dentists at the RCSI conference on medical professionalism in July. Professor Dubhfeasa Slattery spoke about the pillars of professionalism, encompassing our knowledge (head), our skills (hands), and our personal and professional identity (heart). Professionalism promotes clinician safety as well as patient safety, and both are intimately linked. The speakers included Professor Martin Corbally, who described the devastating impact that an adverse incident caused by system

failure has, not only on a young patient and their family but also on the medical team. He could not have given a more moving account of where, how and why the system had failed a patient or the devastating impact this had had on him both personally and professionally.

It was stark to hear that employers and regulators do not consider all the unblemished years served or all the excellent outcomes achieved when investigating an adverse outcome. In system failure, the buck ultimately stops with the clinician. This is sometimes referred to as second victim syndrome. There was a reverence in the room, acknowledging that as clinicians, every time we overstretch our professional boundaries to compensate for a failing system, we may ultimately not only be compromising patient safety and quality of care, but also our own health and well-being, and professional right to practise.

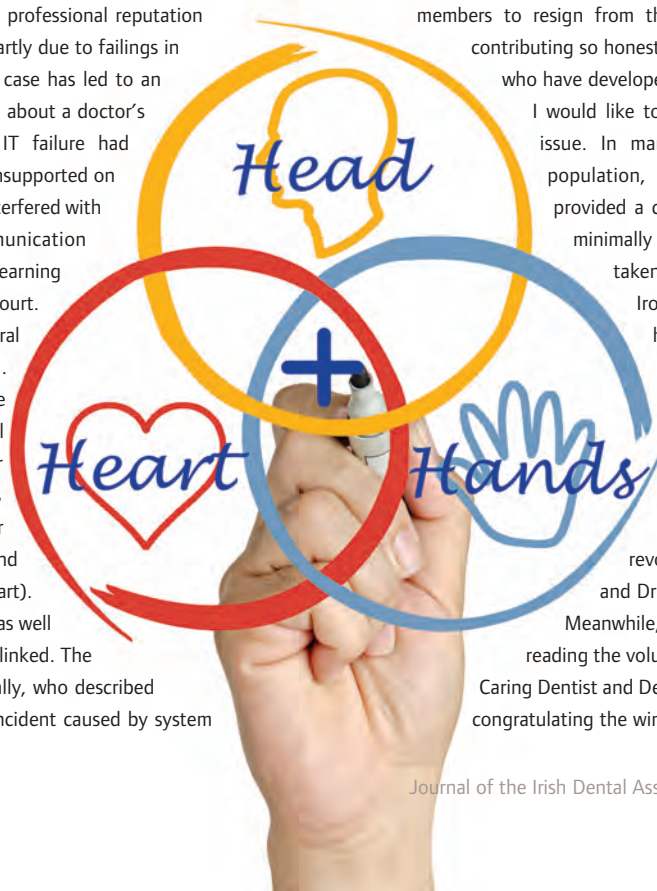
In this issue

The Dental Council advises us that our main responsibility is to "ensure the safety and welfare of your patients". It is fitting therefore that this issue includes a feature on the DTSS. This is the real 'leave or remain' dilemma many dentists are facing. Grave concerns regarding the DTSS have forced some members to resign from the Scheme. I thank those members for contributing so honestly to this feature and also to the members who have developed the resource on independent practice.

I would like to thank all our other contributors to this issue. In managing an increasingly dentate ageing population, Dr Ioanna Politi and colleagues have provided a comprehensive review of the evidence for minimally invasive techniques. Dr Kevin Gilmore has taken the time out of his busy practice (and Ironman season) to share a clinical feature highlighting how to best utilise some of the new ceramics in advanced restorative care to attain high-quality aesthetic outcomes.

Dr David McReynolds has selected the abstracts, including Prof. Helen Whelton's recent review of the fluoride revolution in the *Journal of Dental Research*, and Dr Joe Hennessy has prepared the quiz.

Meanwhile, the judges have been kept very busy reading the volumes of nominations for this year's Colgate Caring Dentist and Dental Team Awards, and we look forward to congratulating the winners in our next issue!



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Prof. Leo Stassen
IDA President



Meetings – ministerial, special and extraordinary, and international

The future of dentistry in Ireland is under discussion right now and the Association is involved at every level.

The last two months have been very busy. Our most recent meeting with the Minister for Health, his team and the Chief Dental Officer, included delegations from the RCSI Faculty of Dentistry, the Irish Society for Disability and Oral Health, and the Dental Council. Our delegation included Dr Kieran O'Connor – a general dental practitioner, Dr Christine Myers – a HSE dentist, our Chief Executive, Fintan Hourihan and me.

We've put strong emphasis on the importance of working together in a new way, particularly on forgetting some of the difficulties of the past and trying to improve the trust in our relationship with the Department. It will not be possible, however, to continue with these meetings without proper terms of reference and also a sound framework agreement allowing us to represent all dentists without fear of prosecution. This has been explained clearly to the Minister and his team. Importantly, we and the other delegations, although coming from different perspectives, had the same important message to the Minister. We are advocating for the four pillars of health: economy; availability; effectiveness; and, safety. Together, we highlighted our concerns about safety for our patients in the new oral health policy to the Minister and his team.

EGM and SGM

Dr Anne O'Neill was voted in as President-Elect at a Special General Meeting of the Association on September 19. Having worked with her in a number of situations, I believe she will be an excellent President-Elect and President of our Association. On the same evening, we also had an Extraordinary General Meeting, the aim of which was to change how the IDA and IDU work. The Governance Committee of the Association has worked very hard with both the solicitors and the accountants for the Association to get us to this stage. It certainly was very important that we had these changes passed and they were passed unanimously. The new governance arrangements will allow us to set up new branch/regional committees. It is my hope as President that we can have new regional committees in all parts of Ireland. For those interested

in serving on these, it is a great way to know what's going on and to be able to have some involvement in where dentistry will be in the future.

FDI

I had the opportunity to spend some time at the FDI Congress, which was attended by 30,000 dentists in San Francisco in September. This allowed me and our Chief Executive to meet with different dental associations, hear what problems they had, and explain the difficulties we face. It was interesting how we all wanted to co-operate with each other. We are especially grateful to the Canadian Dental Association and the American Dental Association, who were both generous in sharing information with us.

Getting started or retiring?

The Association held two seminars recently. 'Getting long in the tooth' for those wanting to retire or retired is held every two years and I would strongly advise anybody over the age of 45 to attend. The presentations allow people to plan intelligently for the future.

There was also a seminar for young dentists, overseas dentists and dentists starting in practice. This was not attended as well as I believe it should be. It really is important that we encourage anybody who is less than 10 years qualified, or arriving from another country to practise in Ireland, that they consider attending this seminar in the future. The seminar also saw the launch of the second edition of our invaluable 'Starting Dentistry in Ireland' guide for dentists, for which I thank Roisín Farrelly sincerely.

Strategy 2020-2023

We have had a number of Board and Council meetings and, as promised, we are having a special meeting to discuss strategy for the Association in the years 2020 to 2023. The Board would be delighted to receive any suggestions from members as to where you would like the Association to focus its efforts in the years ahead. We plan to organise regional meetings to discuss where we are with the national oral health policy and relevant issues arising. It is important, particularly at this time of national oral health policy and other Government negotiations, that everybody has an ability to have a say in what we are trying to do. Every dentist is welcome to contribute. Please contact IDA House, or me at president@irishdentalassoc.ie if you prefer, to convey your views.



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Dear Editor

In his letter to *The Irish Times* on July 29, the Dental Council Registrar points out that dentists, within their competence, are obliged to provide all members of the community with reasonable access to good oral healthcare. The Dental Council has never made any public utterance about the fact that the cuts to dental services for medical cardholders in 2009 deprived them of the very basics of good oral healthcare. The recently published oral health policy does little to redress this injustice.

A Dental Council Twitter contribution on August 1 stated that dental professionals might isolate children from treatment, and that substituting 'African' or 'HIV+' for 'children' would be unacceptable, and so it would. Medical cardholders continue to be denied basic dental treatment for active disease and suffer the sequelae overseen by Dental Council registrants. Uncomfortable as it may sound, medical card patients have been isolated from treatment for the past ten years without any public intervention by the Dental Council.

The Dental Council has statutory responsibility for training dentists and ensuring their competence. The HSE has statutory responsibility for providing continuing professional development for dentists. Since 2009, the HSE has spent over €1m on dental CPD. Just 3% of courses were specific to paediatric dentistry. Furthermore, at least one dental school offers no clinical training for undergraduates in the treatment of under-six year olds. These facts demonstrate

the inadequacy of undergraduate and postgraduate training in paediatric dentistry overseen by the Dental Council and provided by the HSE.

Since the publication of the oral health policy, there has been no opportunity provided by the HSE or proposed by the Dental Council for upskilling general dental practitioners who have concerns about their competence in providing good paediatric oral healthcare.

For the safety of the public, the statutory bodies with responsibility for ensuring competence and providing training in dentistry need to ensure that registrants, both present and future, are given adequate opportunity to ensure competence before engaging in public arm twisting to facilitate policy conceived without the input of clinicians expected to operate new schemes.

Yours sincerely

Dr Pádraig Ó Reachtagáin

Castle St, Roscrea, Co. Tipperary

Dear Editor

I thought I'd share a colleague's recent experience that may be of interest. A few weeks ago, this colleague had a needlestick injury and was sent to get blood tests without delay to the A&E department of a local hospital (a public/HSE facility). At that visit, bloods were taken and the colleague was told they would be followed up as a private patient as the injury was "work related" and they could "claim against their employer". They were given an appointment to attend a few weeks later and told to bring €200 in cash or cheque.

The principal called the hospital department involved, and was unambiguously informed that this was the policy for work-related injuries. When the colleague attended the follow-up (during office hours), they had a copy of the "donor" patient's blood tests (all negative) and the consultant involved had a copy of the colleague's results from A&E (all negative). The consultation continued nonetheless into an in-depth assessment, which included:

- intimate details of the colleague's personal life;
- the effect this event had on their spouse;
- the effect on their relationship with their spouse;
- if they feared for their own health;
- if it caused anxiety;
- whether they were worried that they may not be able to have children in future as a result of the experience; and,
- anxiety or worries about work or going to work.

They were advised that if they had concerns about attending work, they should not hesitate to ask their employer to provide them with counselling.

Ultimately, the colleague lost about half a working day, and the principal lost that person's productivity, in addition to the €200 "in cash or cheque".

I think directing a patient from a public presentation to a private follow-up is inappropriate. My colleague's experience from a simple but not unusual occupational injury seems to me to be an indication that the medico-legal-industrial complex is thriving.

Any employee going through this process has not simply transferred a charge to the employer but, at the employer's expense, has been given a checklist of areas to pursue an employer for liability.

Yours sincerely

Dr Stephen Murray

Swords Orthodontics

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EXCLUSIVE: New Careers and Contracts Clinics for IDA members



Have you ever felt that you'd like some expert, confidential advice on any aspect of your career, your employment or contracts, your CPD needs, or indeed anything else the IDA can help you with? We're delighted to announce an important new service available exclusively to IDA members.

Starting on October 18, we will host a monthly Careers and Contracts Clinic, where you can make an appointment to meet members of our team for a confidential discussion in IDA House. The team in IDA House has a wealth of experience, and we realise that dentists are often too busy to make that call or sometimes would prefer to meet us in person. So we are now offering dedicated clinic times to come meet us in IDA House and hopefully we will be able to provide you with advice, information and guidance.

Clinics will take place in IDA House on:

- ▶ Friday, October 18;
- ▶ Friday, December 13;
- ▶ Friday, January 31; and,
- ▶ monthly thereafter.

To make an appointment, please email Liz Dodd at liz@irishdentalassoc.ie.

This service is open only to IDA members.

Become a reviewer for the *JIDA*

The Honorary Editor of the *Journal of the Irish Dental Association* would like to invite dental colleagues to become reviewers of the *Journal's* peer-reviewed articles.

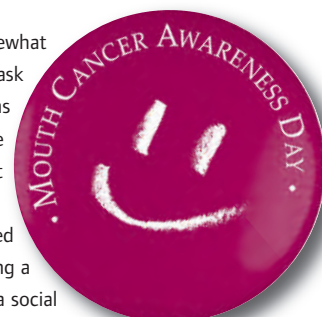
The *JIDA* aims to provide good quality information to support continuing education, professional development and best practice to benefit IDA members, their patients, and the wider dental profession. Key to this aim is the publication of high-quality peer-reviewed content. The peer-review process helps to improve articles prior to publication, by drawing on the expertise of those in the field, as well as dentists who represent the reader, including general practitioners and dentists in training. CPD points are now also available from the Dental Council of Ireland for reviewers.

If you would like to become a reviewer, please contact us at articles@irishdentalassoc.ie.

Mouth Cancer Awareness Day 2019

Mouth Cancer Awareness Day was somewhat different in 2019. This year we didn't ask dentists to provide free mouth cancer exams to their patients on the day; instead, the emphasis was on getting the message about oral cancer to younger people.

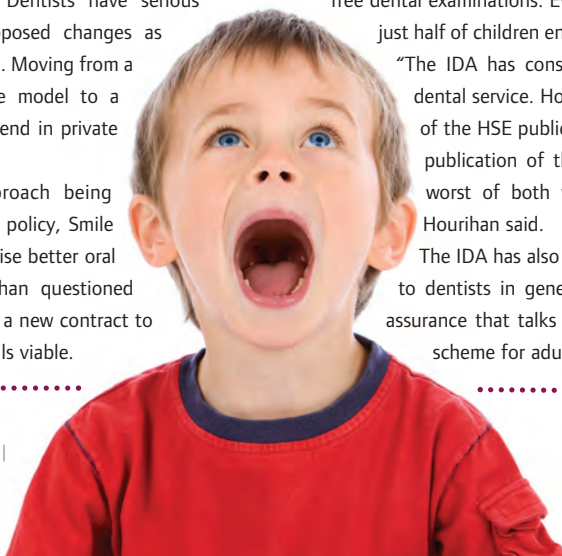
In conjunction with Spunout – a youth-based organisation – a video was produced featuring a mouth, head and neck cancer survivor, and a social media campaign highlighted the risk factors associated with mouth cancer. If members would like to use any of these communication tools, please log on to www.mouthcancerawareness.ie or our Facebook page and download.



The kids are not alright

In response to the Budget announcement (as we went to press) that free dental care for under-6s will be introduced from September 2020, Association Chief Executive Fintan Hourihan said: "Dentists have serious concerns about the viability of the proposed changes as regards provision of dental care for children. Moving from a risk-based, targeted public dental service model to a system where children are seen if they attend in private dental practices is very problematic".

The Association believes that the approach being advocated in the new national oral health policy, *Smile Agus Sláinte*, is misguided and will not realise better oral health outcomes for children. Mr Hourihan questioned whether enough dentists would sign up to a new contract to treat children in order to make the proposals viable.



The Association believes that other models to improve care for children should be examined, including rebuilding the existing HSE school dental service, which has seen dentist numbers fall by 20% as the number of eligible children rose by 20% over the past decade.

Mr Hourihan noted that currently only one-third of adults in Ireland avail of free dental examinations. Evidence from the NHS in England has shown that just half of children entitled to attend the dentist for free actually do so.

"The IDA has consistently called for an adequately funded public dental service. However, we are concerned that the current erosion of the HSE public dental service is being accelerated following the publication of the new policy. This will leave children with the worst of both worlds in terms of access to dental care," Mr Hourihan said.

The IDA has also signalled to Minister Harris that any talks relating to dentists in general practice cannot commence until there is an assurance that talks on replacing the unfit-for-purpose medical card scheme for adults begin in tandem with any other contract talks.



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Irish dentist honoured at FDI



FDI President Dr Katherine Kell presents Prof. John Clarkson with the Charles Godon Medal of Honour. Photograph: FDI World Dental Federation/Gilberto Lontro.

At the recent FDI/ADA Congress in San Francisco, the FDI World Dental Federation awarded Prof. John Clarkson the Charles Godon Medal of Honour. The Award is the highest given by the FDI and is made to oral health professionals who have made an outstanding contribution in the field of dentistry, and Prof. Clarkson is the first recipient of the Award. Prof. Clarkson has worked in general practice, the public health service, as Executive Director of the International Association for Dental Research (IADR), and as Professor/Consultant and also Dean of the Dental School in Trinity College Dublin. He served as President of the IADR in 2002/3 and represented that Association on the FDI Science Committee for many years.

Chris Lynch awarded Senior Doctorate at Cardiff University



Prof. Chris Lynch, Professor and Consultant in Restorative Dentistry, University Dental School and Hospital, Cork, was awarded a Senior Doctorate at Cardiff University in July 2019.

Prof. Chris Lynch is congratulated by Prof. Colin Riordan, Vice Chancellor, Cardiff University, on his award of a Senior Doctorate.

Retirement of Dr Denise MacCarthy



Dr Denise MacCarthy recently retired from her position as Associate Professor in Restorative Dentistry at the Dublin Dental University Hospital (DDUH). After practising

dentistry in the UK, Australia and Ireland, Denise was appointed Senior Lecturer-Consultant in Restorative Dentistry and Periodontology in the DDUH in 1992, the first woman appointed at Senior Lecturer-Consultant level in dentistry in Ireland. She established the first teaching and training programme for dental hygiene in Ireland in 1992, and the first clinic in Ireland for the dental management of head and neck (H&N) cancer patients in 1997. She was a founding member of the Mouth, Head & Neck Cancer Awareness Ireland (MHNCAL) Group in 2009, and Chaired the Group from 2014 to 2018. She was Director of Dental Undergraduate Teaching in Periodontology at the DDUH from 1991-2018, Director of the Dental Postgraduate Advanced Dental Science from 1996-2012, and Head of the Division of Restorative Dentistry and Periodontology from 2011-2017. We wish Denise the very best in her retirement.

IDA medical emergencies and basic life support training

Is your medical emergencies training up to date? If not, get trained soon – the IDA is running various courses in venues around the country this autumn/winter. You are obliged to keep up to date with medical emergencies and basic life support training.



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Award for Dr John Walsh



Dr John Walsh, Immediate Past Dean of the Faculty of Dentistry, RCSI, was recently presented with the 2019 Distinguished Alumnus Award of the Indiana University Paedodontic Alumnus Association in Chicago. John (left) is pictured receiving the Award from Dr Nate Kirk.

New judge for Colgate Awards



Dr Frances O'Callaghan has joined the judging panel for this year's Colgate Caring Dentist Awards. A Principal Dental Surgeon with the HSE Public Dental Service in Dublin, Frances is a former President of the IDA's HSE Dental Surgeon's Group. She replaces Dr Anne O'Neill on the judging panel as Anne was recently elected President-Elect of the IDA. The judges thank Anne for her contribution to judging the Awards, and look forward to working with Frances to choose this year's Colgate Caring Dentist and Dental Team.



Tickets are selling fast for this year's awards. Don't delay and get your table in order today and book those tickets. We are delighted to announce that Anton Savage will act as compère for the evening this year. A night not to be missed – Saturday December 7, at the Clayton Hotel, Leeson Street, Dublin 2.

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IDA at FDI



Pictured after a very informative and positive meeting of the IDA leadership and the Canadian Dental Association (CDA) leadership team at the FDI World Dental Congress in San Francisco were (from left): Dr Mitch Taillon, CDA Past President; Mr Fintan Hourihan, IDA CEO; Dr Nuala Carney, IDA delegate to FDI; Prof. Leo Stassen, IDA President; Dr Sandy Mutchmore, CDA President; Dr Jim Armstrong, CDA President Elect; and Dr Jim Tennant, CDA past Board member.

Munster Branch ASM



The Annual Munster Branch ASM will take place on Friday, November 15, at Fota Island Resort. A full trade show will be present. This is always a very worthwhile event, so see you there! The cost to IDA members is €200 (non-members €400). To book, log on to www.dentist.ie.

Kerry Branch ASM



The Kerry Branch returns to the idyllic surroundings of the Europe Hotel in Killarney on Friday, October 18, for its ASM, entitled 'Kerry Voices 4'.

The speakers will include oral surgeon Dr Norma O'Connor, who will present an update on the management of the oral surgery patient, and endodontist Dr Conor Durack, who will talk about taking the pain out of root canal treatment ... for the clinician. Prosthodontist Dr Seamus Sharkey will give a presentation entitled 'Successful crown and bridge'. The day will conclude with a joint presentation from Dr Kate Counihan and Dr Niamh McAuliffe, on 'Orthodontics – moving with the times...merging new innovations with tried and tested techniques'.

Dinner will be held at 8.00pm at the hotel.

For a jam-packed day of learning, book today on www.dentist.ie.

The cost to IDA members is €195 (non-members €390).

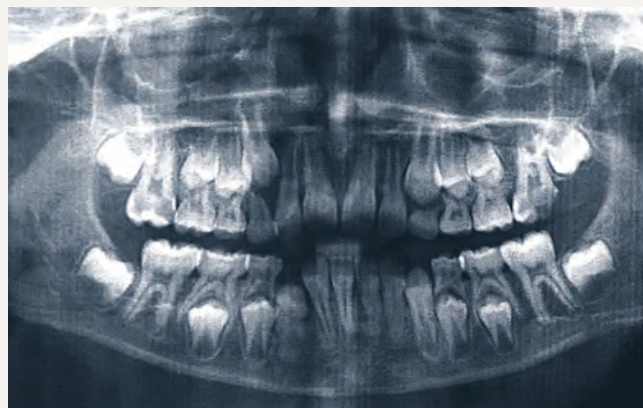
Quiz

Submitted by Dr Joe Hennessy.

A nine-year-old patient presented to their dentist for a general dental check-up. The dentist was immediately concerned with the appearance of her maxillary first permanent molars. An orthopantomogram confirmed heavily decayed maxillary first permanent molars.

Questions

1. What are the considerations prior to finalising a treatment plan for the maxillary permanent molars?
2. What stage of dental development would you consider to be an ideal time to extract the maxillary first permanent molars? What would you hope to achieve by doing this?
3. When should a specialist opinion be sought in a case like this?



Answers on page 272

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Leave or remain: DTSS dilemmas

Many dentists are leaving the DTSS and here some of them outline their reasons and explain how practice outside the HSE system is going.

Many dentists feel that they and their patients have been mistreated by the State under the Dental Treatment Services Scheme (DTSS). Since the economy improved in recent years, little has been done to reverse the sweeping cuts introduced to the Scheme during the recession, and the number of treatments available remains pitifully inadequate. This has led to a significant number of dentists leaving the Scheme and many more considering it.

Dr Maurice Leahy of Riverside Dental Care in Cork City exited the DTSS a year ago and says: "I tendered my letter of resignation to the DTSS in August 2018 and saw my last patient in October 2018. During the three-month notice period, we informed as many patients as possible that we would no longer have a contract to treat patients with a medical card. We reassured patients that they would always be welcome (a big worry for some), that the majority would be entitled to an exam/cleaning under new PRSI scheme, and offered advice and recommendations to other colleagues to those who chose not to continue with us".

Maurice explains that he felt he had no option but to leave because he was

dealing with a "hopeless contract", constantly having to explain to patients what treatments were and weren't available on the Scheme, and dealing with excessive paperwork. However, he says that the straw that broke the camel's back was an audit request: "Would I be so good as to trawl through every extraction over the previous five years, without any reference or patients' names, in my own time? Ah, that would be a definite no, thank you and goodbye".

Maurice has no regrets: "It's been great. We are quieter in numbers, have more time with patients, more time off, and our stress levels have fallen through the floor".

He says his materials bill has dropped but his turnover has increased: "We can accommodate patients at short notice and complete treatment plans much faster, thus improving cashflow. All in all, it's been a thoroughly positive experience".

Both sides of the coin

Dr Will Rymer currently works in two practices, one where he is an associate, which has a DTSS contract, and another independent practice he runs with his wife, Dr Sarah Rymer, which doesn't. He is originally from England, so grew up in the NHS system. He is clear that he would like to provide care to medical card patients in his independent practice, but feels he cannot work with such an inadequate Scheme. He believes it is time for the Government to take responsibility for the DTSS and explain to the public why it offers so little: "I think it's heartbreaking that you're having to leave people that you've worked with for years. I've worked under the medical card/DTSS system for 10 years and I've enjoyed treating those patients and I want to continue treating them. I'm still working under the system part time, but I certainly find working independently much less onerous on me in terms of stress. It's much more enjoyable work. And I want to be able to provide that level of care to the patients who need it. At the end of the day, those patients who need it the

most are being failed the most ... I want to be able to provide dentistry to them free at the point of delivery. The system they have in place at the moment is awful for the dentist and the patient. I don't think the patient realises that it's awful for them. I think that's the big issue. The Government is allowing this supervised neglect basically and the dentists are hamstrung".

He explains what it would take for him to sign up to the DTSS or any replacement scheme: "Whatever system they bring in needs to be fully funded. I appreciate that probably means that they'll have to provide it to fewer people. I know there is a limited pot so in order to adequately provide what I would want to be able to provide under the contract, you couldn't give it to as many people as they're giving it to now. There has to be some fundamental change there. They talk about it being an emergency service, that we're treating people in pain. We're hardly doing that".

The problems with the Scheme are causing knock-on effects for private patients according to Will: "I've spoken to colleagues of mine, and anecdotally, what I've heard is that practices that are working with big numbers under the DTSS are having to elevate their private fees to compensate for the fact that their overheads are so high, and the DTSS isn't covering their expenses".

He believes that the gap between DTSS and private fees can be better understood by looking at the time spent with patients: "The approach of the HSE makes it impossible for dentists to provide the care and treatments

medical card patients deserve. The bedside manner, pleasant chit-chat, the common courtesy has to give way to haste and efficiency. In independent practice, I can do an exam and scale and polish, or an exam and a filling, and I can viably spend 30-45 minutes and still be very happy with my income. In DTSS situations, I'm under increasing pressure to cycle through them that bit faster".

Much more manageable

Another dentist, who did not wish to be named, resigned from the Scheme in June 2018 and says that she has not looked back since: "I find my working day much more manageable. I feel I can offer patients more treatment options without the constraints of the Scheme. No longer do we have to painstakingly go through payment schedules and send reclaims for items unpaid by the PCRS".

She also says that her income has increased: "We have a lot fewer failed appointments. This is one of my better decisions in practice and I have no intention of ever getting involved with the HSE again".

Mulling things over

Along with the dentists who have left the Scheme, others report that they are strongly considering exiting the DTSS. While most dentists want to treat

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medical card patients, the Scheme is simply not fit for purpose. One dentist complains about low fees and the frustration of trying to collect these from the HSE: "It is a struggle to get paid sometimes as the HSE frequently just doesn't pay you. Then you have to query why you haven't been paid for work done in good faith and then provide "clinical necessity" reasons".

He feels helpless when he has a medical card patient who needs more than two fillings but can't afford to pay for the extra treatment: "It is a genuinely unethical scheme".

He finds that nowadays he has less and less time for DTSS patients: "I am getting to the stage where I am too busy with the PRSI and private patients to be dealing with this Scheme and its problems".

Fintan Hourihan, the Association's CEO, says that while the IDA is precluded by law from issuing direction to individual dentists on terminating their DTSS contracts, or in regard to any collective action, he has noticed a perceptible increase in the number of queries from dentists who wish to leave the medical card scheme.

DENTAL INDEPENDENCE

The IDA GP Committee's new policy paper 'Promoting Independent Practice' outlines the Association's commitment to dentists and patients working independently together.

The IDA GP Committee's new policy paper 'Promoting Independent Practice' explains why the Association believes independent practice is best for Irish dentists and patients. Chair of the GP Committee, Dr Kieran O'Connor, says: "Independent practice has served the dental health of the Irish population for generations. When the State schemes were collapsed a decade ago, dental practices survived and patients were provided with care, predominantly because of independent practice".

Independence offers dentists full clinical autonomy and does not limit the range of treatments they can offer, or the materials or techniques they can use. Professional practice is provided in accordance with the training and competency of the dentist.

Budgetary constraints are agreed between the dentist and patient. The over-riding obligation on the dentist is to provide care to patients in their best interest.

Why is the IDA promoting independent practice?

The IDA GP Committee has adopted this policy in recognition of ethical and commercial considerations. Promotion of independent practice also reflects the impact of the unilateral cuts imposed by the Government to State

He explains that the contract obliges dentists to give three months' notice in writing to the HSE. Clause 29 of the contract also provides that: "any dental letters and charts held by the contracting dentist prior to the expiration of such notice in respect of which the dental treatment has not been commenced shall be deemed to have been cancelled. Treatment which has been sanctioned may be completed".

The Association is available to advise and assist members with queries in regard to any aspect of the Scheme, whether it relates to applying for, operating or leaving it. The Association has long held that the DTSS and its contract are unfit for purpose and in dire need of an overhaul. The Association has also said that while the Government has signalled its wish to offer a separate contract for the care of under sixes, the IDA will be insisting that talks on a replacement of the Scheme for adults would have to begin in parallel. However, firstly the Department will need to offer an agreement which affords the union protection from legal sanction in a manner equivalent to that provided to the Irish Medical Organisation, as it has promised to us for many years.

dental schemes in 2010, which had a huge and lasting impact. In the intervening period, dentists have built up their private practice and the IDA GP Committee wishes to encourage this. The Committee feels patients' best interests are best served where there are certain provisions, including:

- ▶ no restrictions on treatments which will be funded and provided as determined by external parties;
- ▶ no limitations as regards quality of materials;
- ▶ no restrictions as regards clinical techniques;
- ▶ no limitations as regards definitions of clinical treatment; and,
- ▶ no approvals required by third parties for treatments to be provided.

The IDA wishes to ensure the greatest independence for dental practice and to enable a strong direct relationship between the dentist and their patients. Promotion of independent practice is in response to feedback received from members regarding their participation in certain underfunded State dental schemes and the negative impact of this.

The GP Committee accepts that properly funded Schemes with an emphasis on proper patient care and/or co-payment models can work. It is of course a matter for individual dentists to decide whether to apply for or hold a third-party contract.

Independent practice – challenges

Some of the challenges the Association's GP Committee is committed to tackling include:

- ▶ promoting a clearly understood rationale among stakeholders for independent practice and the motivation of dentists who promote it;
- ▶ ensuring that there is consistency as regards the quality of care provided in all models of care and that independent practice is associated with the highest standards of care;
- ▶ ensuring the economic viability of independent practice;
- ▶ ensuring that regulatory standards are discharged to the optimal level in independent practice; and,
- ▶ challenging any attempt to characterise independent practice in an unfavourable light by vested interests.

The full policy paper is available at www.dentist.ie.





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New sister company from Quintess

Quintess Denta states that its new sister company, Quoris3D, specialises in giving dentists and technicians direct access to 3D printing, 3D design services, and the ability to purchase some of the world's leading 3D printers and resins. Quoris3D is a distributor for EnvisionTEC 3D printers, Medit intraoral scanners and PreVu smile design.

According to Quintess Denta, the 3D-printed products from Quoris3D include: special trays; sport shields; whitening trays; essix retainers; study models; aligners; dentures; bite guards; and, surgical guides.

Quoris3D states that it can receive impressions (conventional or digital) from the dentist through its website ordering service. Its team will then print the products and dispatch to the dental practice and, according to the company,

the lead time will be around two to three working days.

Quoris3D will be exhibiting on stand number K53 at the British Dental Industry Association (BDIA) Dental



Showcase from October 17-19, 2019, at the NEC in Birmingham, where its team will be on hand with advice and some offers on the latest equipment and 3D-printed products.

New faces and Brexit news from Omega

Omega Financial Management states that it is delighted to announce the appointment of three new senior financial advisors. The company states that Paul King, Mike Mulrenan and David Stolzenberg bring with them a wealth of financial services expertise and will be advising clients across the country. Paul has over thirty years' experience in financial services, with the vast majority spent in the pensions and investment arenas. Mike is a Specialist Investment Advisor (SIA) and Certified Financial Planner (CFP). David has over 15 years' experience working with various financial services providers.

Important Brexit notice

The company would like to advise dentists who may wish to take out a new Day One Income Protection plan or increase their existing plan with either DG Mutual or Dentists' Provident, that in the event of a hard Brexit on October 31, it is unlikely that they will be able to do so for an indefinite period of time. Clarifying, Omega states that all existing clients will be unaffected and their cover will remain in place as it stands.

The power of digital dentistry



Dr Morgan O'Gara (left) with Richard McLoughlin of Henry Schein.

Digital dentistry is changing the way dentistry is practised, according to Henry Schein, and traditional methods are being replaced by digital alternatives. Dr Morgan O'Gara of Blackrock Dental utilises digital equipment from Henry Schein in his practice and states: "When I graduated in 2007, digital was in its infancy ... Upon completion of my MSc in Aesthetic Dentistry in 2012, digital was progressing. Digital radiographs and photography were commonplace. Photography with a digital SLR camera and high-quality intra-oral camera are my most valued and used digital tools in

practice. High-quality photography has multiple benefits: patient/lab communication; informed consent; treatment planning; comprehensive clinical records; and, as a marketing tool".

He says his next piece of digital equipment was a CEREC Omnicam and milling machine: "Single-visit digital dentistry is an invaluable service to offer my patients and results in greater patient and staff satisfaction. More restorative and material options result in more accurate restorations".

The company states that digital is being embraced in implant dentistry, and Morgan says: "Digital dentistry is the future, with so many different tools now available to provide the best possible dental care for our patients".

Perio Master Clinic comes to Dublin



A major international periodontology conference is coming to Ireland next year. The Irish Society of Periodontology, under the chairmanship of Dr Declan Corcoran, above, states that it is delighted to be hosting the fourth European Federation of Periodontology (EFP) Perio Master Clinic 2020 from March 6-7 in the RDS, Dublin. The theme of the conference is hard and soft tissue aesthetic reconstructions around teeth and implants.

The Perio Master Clinic 2020 is not just for periodontists; it is aimed at all dentists who have an interest in the management of the hard and soft tissues around teeth and implants. This will be a clinically oriented meeting, with all presentations featuring clinical slides and videos.

Declan spoke about the importance of the event: "It's not often that an international conference of this calibre comes to Dublin and this is a glorious opportunity for Irish dentists who have an interest in the periodontal management of tissues around teeth and implants to get up to speed with the latest techniques for regeneration and, most importantly, the management of complications – all on your own doorstep".

He says that there will be top presenters from Europe and the US speaking on all aspects of periodontal regeneration: "Crucially, this is a clinically based meeting, so all presentations will feature multiple clinical slides and videos, very much concentrating on the 'tell, show, do' method, and of course all based on sound clinical principles. I'm delighted to say that our own Ronan Allen will be presenting at the conference, and Prof. Ioannis Polyzois and Prof. Peter Harrison from the Dublin Dental University Hospital, along with Dr Tiernan O'Brien, will be moderating".

Declan said that topics will include:

- how to deal with single tooth or multiple teeth gingival recession;
- autografts vs xenografts;
- soft tissue defects around natural teeth;
- novel concepts: outlook for the future; and,
- many more topics across the two days.

Further details at: www.efp.org/periomasterclinic/2020/index.html.



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Braemar looks to make tax less taxing



Braemar Finance provides businesses with tax loans, and with the deadline for tax returns approaching, Joe Biesty of the company states: "This time of year can be stressful for many business owners. Paying a lump sum to Revenue can adversely impact a firm's cashflow, and as we know, this is no small matter. In addition, there are penalties and interest charges for late submission".

He continues: "Having spoken with our clients, we recognised that this was a significant issue for many and we quickly made a decision to introduce a tax loan facility designed to help manage this recurring expense. It effectively allows a business to take control of their cashflow and spread the cost of their

tax bill into more manageable monthly payments".

Joe believes that Irish businesses could benefit significantly from this, as he states Braemar Finance's UK clients have. According to Joe, benefits include:

- control over cash flow;
- fixed monthly payments;
- flexible repayment terms;
- faster payments transfer;
- protection of existing bank facilities; and,
- loans that are quick and simple to arrange.

Back to school with Henry Schein

Henry Schein recently undertook its 22nd annual Back to School programme. This year, the company states that it provided nearly 5,000 children with backpacks and school supplies in Ireland and other countries. According to the company, since the programme's inception in 1998, it has helped more than 50,000 children.

At many locations, the company states that children who participated in the scheme also took home books and hygiene products donated by Henry Schein. Henry Schein Ireland co-operated with Barnardos this year, whose mission it is to work with vulnerable children. In Ireland, this initiative was part of Henry's Angels, formed in January 2011 by Henry Schein staff, who wanted to put together a lasting programme of volunteers wishing to give back to the local community.

The company states that it supports at least four projects each year and received tremendous support from local companies. The Back to School programme is an initiative of Henry Schein Cares, the company's global corporate social responsibility programme.

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New member of Dental Protection team




Dental Protection states it is delighted to welcome Dr Noel Kavanagh to the team. Noel will be working with members to help manage clinical risk and ensure members' needs are met.

Noel has worked in general dental practice in Kilkenny City for 19 years, and also held a position as a clinical supervisor in the Dublin Dental Hospital. He worked as both an associate and principal dentist in the UK, before returning to Ireland in 2000. Noel's main clinical interests are adhesive and minimally invasive dentistry. He has delivered lectures at the Dublin Dental Hospital and at the

HSE's national conference for dentists. He has organised and delivered hands-on posterior composite courses for the HSE dentists and delivered compliance workshops for both the IDA and the Irish Faculty of Primary Dental Care (IFPDC). He is a member of the IDA and has served as a GDP representative and on the Quality and Patient Safety Committee.



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Avoiding complications

Thorough preparation, detailed consent, and managing patient expectations are some of the ways in which dentists can avoid complications arising during or after treatment.



A famous philosopher once said: “The most fundamental form of human stupidity is forgetting what we were trying to do in the first place”. Do we ever do this in dentistry?

We treat patients. Obviously, we never forget that care aims to place the patient in a better position than they were before (or at least prevent things getting worse) and we usually achieve this. But when complications arise, the patient can form the opposite view.

While not all complications can be prevented, it makes sense to identify those that can and take the necessary steps to reduce risk.

Complications and complaints

In any league table of complaints and claims, those areas of dentistry with high levels of patient expectations (such as implants, crown and bridge work, endodontics, and orthodontics) will tend to feature near the top. The ‘complication’ risk with these includes disappointment, which is a powerful driver of complaints.

Commonly occurring elements that feed into ‘disappointment risk’ include various pre-treatment factors, such as:

- inadequate – or over-optimistic – case assessment by the dentist;
- the patient’s understanding of the risks and possible outcomes prior to treatment; and,
- details of costs and time frames.

All of these have a knock-on effect on the validity of consent. Another factor is the occasional outbreak of ‘herodontics’, when a dentist – often with the best of intentions – launches into treatment that from the outset has a poor chance of a successful outcome.

Eliminating risk

These pre-treatment risk factors for generating complaints can be largely eliminated through careful case assessment and a thorough, clearly documented consent process.

There are of course issues that may arise during treatment, which may be unforeseeable. Despite thorough preparation and careful technique, issues arising from restricted access, isolation difficulties, fractures, perforations and unexpected variations can all lead to treatment being more difficult or protracted than either clinician or patient originally envisaged. Such situations need to be dealt with as they arise.

A complication is always much easier to deal with if there is a contingency plan in place, which the patient is aware of in advance. This means that if Plan B does need to be put into operation the patient is not taken by surprise. It makes sense to explain to the patient at the start that: “if X happens, we might need to do Y, just so you know”. It is not about worrying the patient, but about reassuring them that there is an alternative if things do not go according to plan.

On the subject of surprises, to reduce the risks of a complaint once treatment is finished, it is important that the patient understands what success will look like. There are many instances where patients have been dissatisfied with the result due to unrealistic expectations. The reason for a robust consent process is to avoid these sorts of misunderstandings. If there is a possibility that further treatment may be required after a current course of treatment, it is advisable to make the patient aware of this at the outset rather than at the point where they are paying what they thought was the final bill.



Dr Martin Foster BDS MPH DipHSM

Martin is Head of Dental Services for Ireland at Dental Protection.

Practical tips

- Assess the case thoroughly and ensure that both you and the patient understand what you are getting into. Avoid proceeding if you have insufficient information or have doubts about achieving a successful outcome.
- Be realistic and avoid 'herodontics': recognise what is possible, when to say no and when to refer.
- Identify and manage patient expectations. Ensure that the patient has a clear understanding of what to expect with the treatment itself, the duration, number of visits, costs, likely outcomes, and risks – including the possibility of additional costs should the treatment prove to be more involved than originally anticipated. In short, do all you can to avoid any surprises for the patient. This will involve a careful checking of the patient's understanding of their treatment.
- Once treatment is completed the result should be checked carefully. If there is any complication or deficiency it is important that you are the first to know and that you advise the patient accordingly.
- Whether the result is ideal or is only as good as you have managed to achieve in the circumstances, it is important that the patient understands what the situation is. You should make clear and detailed records of the advice given to the patient. A less than ideal outcome can be made much worse if the patient subsequently learns of this from another dentist.
- Many cases arise on account of comments from another dentist about the work of a colleague. It is of course important that a patient is advised of clinical findings but you should refrain from making disparaging remarks about another dentist's work. If a patient has any concerns about a previous dentist's treatment, you should advise that you are not in a position to comment, as you were not there at the time. The patient should be directed to take the matter up with their previous dentist. Many potential complaints and claims could be avoided through good communication with the patient beforehand to ensure that there are no unwelcome surprises. If a problem does arise, or the patient expresses any concerns, it is worth remembering that, if dealt with promptly, there is a greater prospect of a successful resolution.
- In the event that a complaint or claim does arise, the position of the practitioner is made more difficult to defend if there is a lack of adequate records, radiographs, treatment plans or a recorded consent process. It is an obvious risk management strategy to pay close attention to these.



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The all-ceramic restoration

The introduction of the new generation of particle-filled and high-strength ceramics in the last decade offers an extensive range of dental materials to clinicians, broadening the clinical indications in restorative dentistry.



FIGURE 1: Metal-ceramic crowns can look opaque due to poor light transmission through the metal core.

One single material cannot meet both the aesthetic and functional demands of all clinical environments, so the decision on which material to choose will depend on whether the clinician wants the restoration to be strong, aesthetic or a mixture of both.¹ Laboratories and technology companies currently advertise a variety of new high-strength aesthetic ceramic materials, and dentists may find the choice confusing. Metal-ceramic is still considered the gold standard reliable material,² but the quest for better aesthetics, as well as concerns over biocompatibility of dental alloys, mean that all-ceramic restorations are rapidly replacing metal-ceramic as the material of choice (Figures 1 and 2). This is because they are metal free and have excellent aesthetics, strength and biocompatibility properties.³

This review describes the properties and characteristics of some of these new and older materials, so clinicians can understand their drawbacks and limitations in order to decide on the most appropriate use for them.

What is a dental ceramic?

A dental ceramic is made from two parts: a metal element, either silicon, aluminium or zirconium, which is combined with a non-metal oxide to form either a silica, alumina or zirconia. There are two major categories of all-ceramic materials: a) silica-based; and, b) non-silica-based ceramics.

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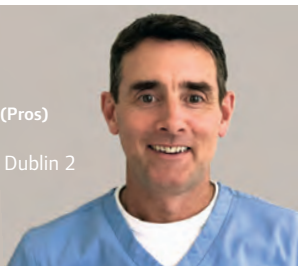


FIGURE 2: Metal-ceramic crown replaced with an all-ceramic e.max crown with a more translucent core to transmit light.

Silica-based ceramics

Glass porcelain, e.g., feldspathic porcelain

These are traditional ceramics used in areas where aesthetics are of high importance and where colour masking is not important, e.g., porcelain veneers. They have arguably the best aesthetics due to their high translucency, but have low flexural strength (Figure 3) and therefore need to be properly bonded to the tooth, preferably in enamel. They are not used for full coverage restorations and are not recommended for bruxers. The silica in these restorations can be selectively etched with 5% hydrofluoric acid to provide the ideal surface for bonding. These materials have largely been surpassed by much stronger modern ceramics, e.g., Empress or e.max.⁴

Leucite-reinforced ceramics, e.g., IPS Empress

These ceramics are generally used when aesthetics are the primary objective, as they are very translucent. They contain leucite, which helps to prevent crack propagation and doubles their flexural strength (Figure 4). They are not recommended for posterior crowns but are used for aesthetic veneers, anterior crowns, and as a layering porcelain on lithium disilicate (e.max), alumina or zirconium cores.³

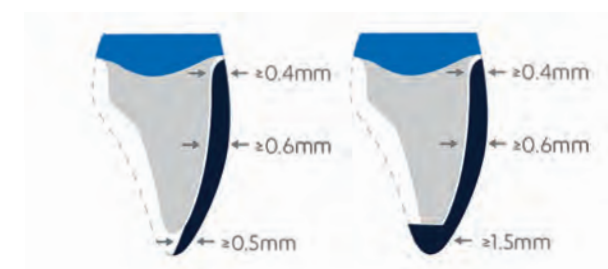


FIGURE 3: Preparation design for a feldspathic veneer.

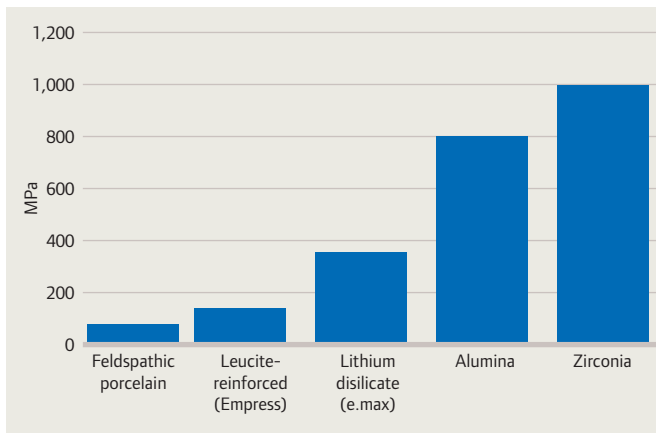


FIGURE 4: Fracture strengths of silica- and non silica-based crowns.
Source: www.dentalxp.com.



FIGURE 5: Crown preparation for Empress crown – 1mm circumferential preparation.



FIGURE 6: Metal-ceramic crown replaced with an Empress crown with natural stump shade – UL1.



FIGURE 7: Shaded e.max cores to help block out dark teeth/posts.

The preparation design is similar to IPS e.max (Figure 5) and they are commonly used to make veneers/crowns with natural tooth shades underneath (Figure 6).

Lithium disilicate, e.g., e.max

These ceramics are double the strength of Empress restorations (Figure 4). They can be used for veneers as they have very good aesthetic properties, and as crowns on premolar and molar teeth as they have a high fracture toughness.⁵ There are shaded ingots (Figure 7) that can block out dark stumps, and they can be layered with feldspathic porcelain that needs 1.2mm of reduction

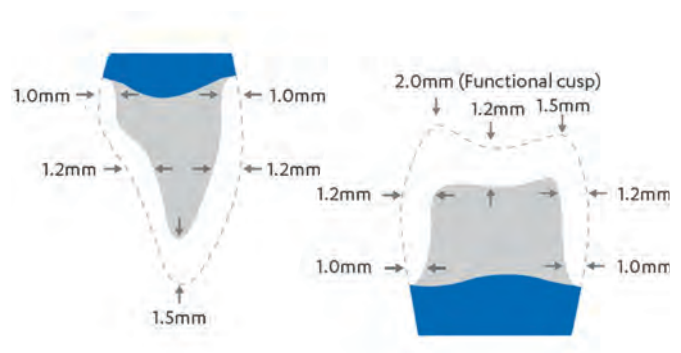


FIGURE 8: The preparation design for e.max is similar to porcelain fused to zirconia.

(Figure 8). They are also indicated for anterior and premolar short-span bridges (Figure 9), but are not recommended for posterior bridges. They are easy to bond to with regular silane and aesthetic resin cements, but can also be cemented with regular or self-adhesive cements.^{6,7}

Non-silica-based ceramics

Crystalline ceramics like zirconia and alumina have a higher flexural strength and are more opaque than silica-based ceramics so they can be used to block out a dark underlying tooth or post.

There were concerns that because the zirconia was so hard, it created increased

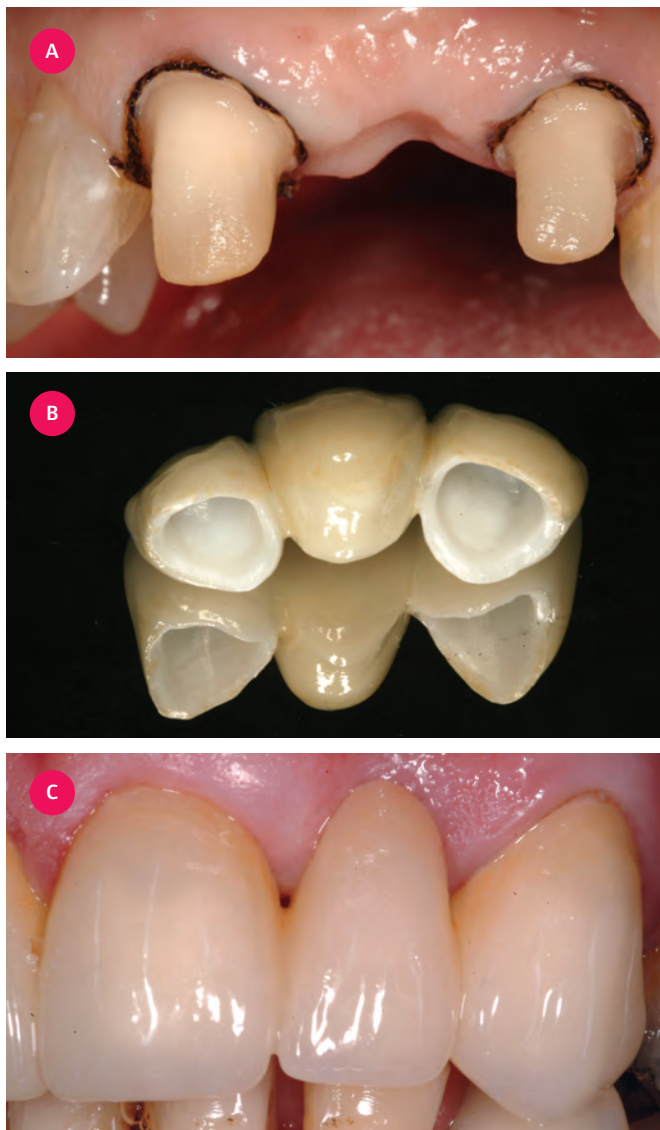


FIGURE 9: Example of a short-span anterior e.max bridge with pressed Empress porcelain.

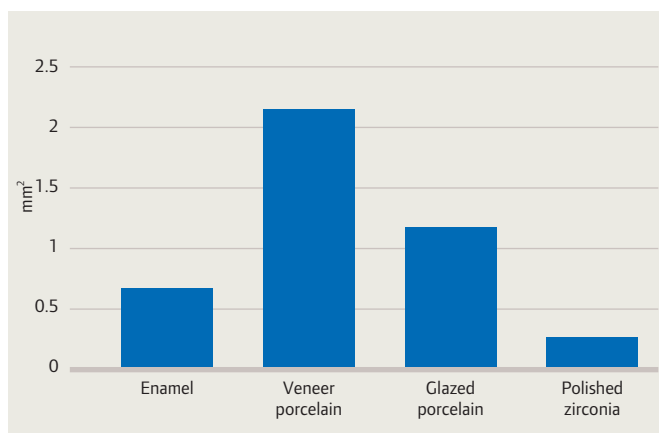


FIGURE 10: Wear rates against opposing enamel cycles. Polished zirconia had a lower wear rate than enamel.^{4,19}



FIGURE 11: Zirconia polishing kit from Brasseler USA.

wear on the opposing tooth.⁸ However, wear was found to be caused by surface roughness, not hardness, and zirconia was found to have a wear rate closer to enamel than any other ceramic (Figure 10).^{9,10} Zirconia does, however, create wear if the restorations are adjusted and not polished properly.¹¹ Proper polishing protocols must be followed correctly, otherwise cracks, fractures and opposing wear can occur (Figure 11).¹²

Monolithic fully milled zirconia

This is a full-contour, milled monolithic zirconium crown or bridge restoration without veneering porcelain that is milled from a single block of zirconia. These restorations offer a very conservative preparation similar to a full gold crown reduction (Figure 12). It has high flexural strength, is very resistant to fracture, may be used in bruxers,^{13,14} and can be used for long-span bridges. Its wear rate against enamel is very favourable,^{8,15} but can be difficult to bond to if moisture control is compromised, especially for lower molar teeth. They are inexpensive,

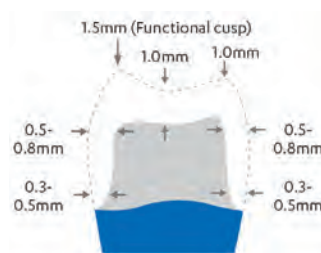


FIGURE 12: Preparation for a full-contoured monolithic crown.



FIGURE 13: Clinical pictures of a monolithic crown.

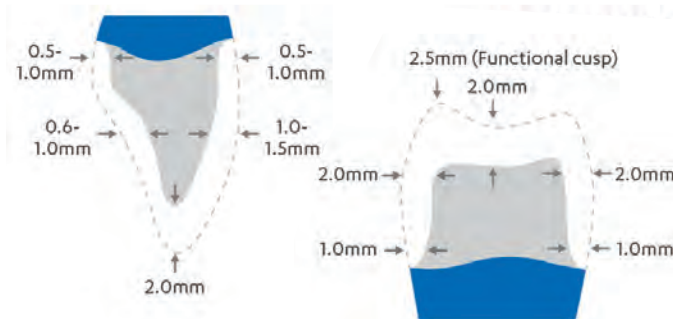


FIGURE 14: Porcelain fused to zirconia preparation design.



FIGURE 15: Porcelain fused to a zirconia core to block out the silver metal post.

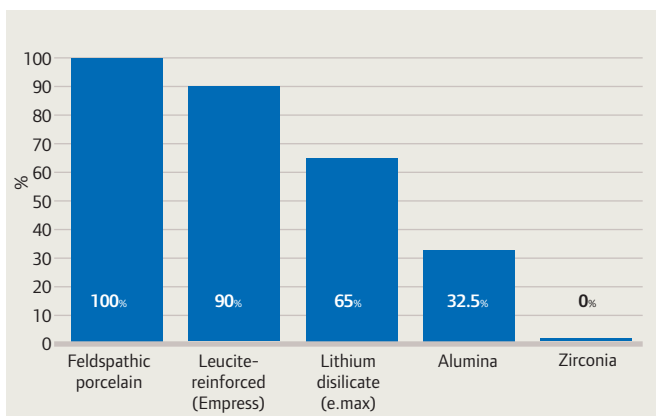


FIGURE 16: Comparison of translucency of silica- and non silica-based crowns. Source: www.dentalxp.com.

and as no model is produced, this also reduces waste and shipping costs. The recommended cement is self-adhesive resin cement, and it is not typically used on anterior teeth if aesthetic demands are high. The higher translucency monolithic crowns are becoming very popular, as they retain the strength of zirconia but achieve a very lifelike aesthetic appearance (Figure 13).^{13,16}

Porcelain fused to zirconia (PFZ)

The preparation for these crowns is slightly more aggressive than milled monolithic crowns to provide space for the veneering porcelain (similar to e.max crowns) (Figure 14). The porcelain can also be pressed onto the zirconia (IPS e.max) (Figure 15). This makes them very good aesthetically while still retaining the strength of zirconia. They can be used for posterior as well as anterior bridgework; however, because of the veneering porcelain, they are not recommended in bruxers or areas of high occlusal load. Historically, early designs were plagued with a high chipping rate, but this problem has largely been overcome.¹⁷ The recommended cement is a self-adhesive resin for cementation.

Bonding or cementing

Bonding a restoration requires: a) a chemical and micromechanical bond between the cement and ceramic; and, b) a micromechanical bond between the cement and the tooth. To achieve this, both tooth and ceramic need to be chemically treated to achieve proper bonding with a resin composite. Cementation, on the other hand, relies on a combination of macromechanical and micromechanical retention to hold the restoration in place.⁷

Feldspathic porcelains and leucite-reinforced ceramics (IPS Empress) should be bonded with resin cement using a bonding agent on the tooth surface and ceramic silane primer on the ceramic surface. Silane only works with silica-based ceramics, and as there is no silica in alumina and zirconia crowns, if bonding zirconia restorations, the equivalent primer to silane is 10-Methacryloyloxydecyl dihydrogen phosphate (MDP).

Zirconia/alumina or e.max restorations with good retention can be cemented with traditional glass ionomer, resin-modified glass ionomer, carboxylate cements, or with self-adhesive resin cements.⁷ If tooth preparations have less than ideal retention and resistance form, they should be bonded with adhesive resin cement, enamel/dentin bonding agent, and zirconia primer (MDP) or silane. Etching a silica surface improves the bond strength; zirconia does not etch but can be sandblasted to improve retention.¹⁸

Conclusions

When choosing a restoration, the clinician needs to consider aesthetics, function and retention. For higher strength restorations where aesthetics are not as important, a high-strength monolithic zirconium crown is a good choice on molar teeth, as the preparation design is similar to a full gold crown preparation. If aesthetics are a priority, then the clinician should choose the higher translucent silica-based ceramics (Figure 16).

Higher translucency monolithic zirconia crowns are coming close to the ideal posterior restoration, as they are very natural looking and strong enough to withstand posterior function. The PFZ anterior crown is competing with the traditional e.max crown as it has a higher strength core but it is not as easy to bond to.

Preparation design diagrams courtesy of Southern Cross Dental.

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Minimum intervention dentistry for the management of caries in older adults: a review of the literature

Précis

This literature review presents evidence supporting aspects of minimum intervention dentistry (MID) for older adult patients.

Abstract

Statement of the problem: The population is ageing and the proportion of older adults retaining their natural teeth is increasing. This means that there are increasing numbers of older adults at risk of and from dental caries for longer. This challenges traditional concepts of care delivery for older adults. With advances in the understanding of the pathogenesis of dental caries, there is increasing evidence to support a shift from traditional mechanical 'drill and fill' techniques to the management of dental caries biologically as a complex ecological process. Minimum intervention dentistry (MID) has become an increasingly mainstream model of caries management, which minimises the need for treatment that destroys dental tissues. In contrast to traditional management of caries, MID focuses on prevention and risk reduction, while surgical intervention is limited to cases where it is absolutely necessary. This paper reviews the evidence to support adoption of MID, particularly for older adults in Ireland.

Purpose of the study: To review the evidence regarding aspects of MID for caries management among older adults.

Materials and methods: A structured search strategy was undertaken using PubMed, Google Scholar and the Cochrane Library, with additional searching of reference lists. A total of 25 articles were deemed relevant to this literature review. The data was extracted and tabulated. The outcomes and quality of the studies were reported narratively. Weaknesses and clinical implications are discussed.

Conclusions: MID can be recommended for older adults. This review supports the use of topical fluorides in varnish, rinses and high-fluoride toothpaste to prevent dental caries in older adults, and the restoration of caries adopting the atraumatic restorative technique (ART). There was insufficient evidence regarding the effectiveness of oral health education. No studies were identified looking at the effectiveness of caries removal techniques, the resin infiltration technique, or the repair rather than replacement of restorations for older patients.

Journal of the Irish Dental Association October/November 2019; 65 (5): 262-270



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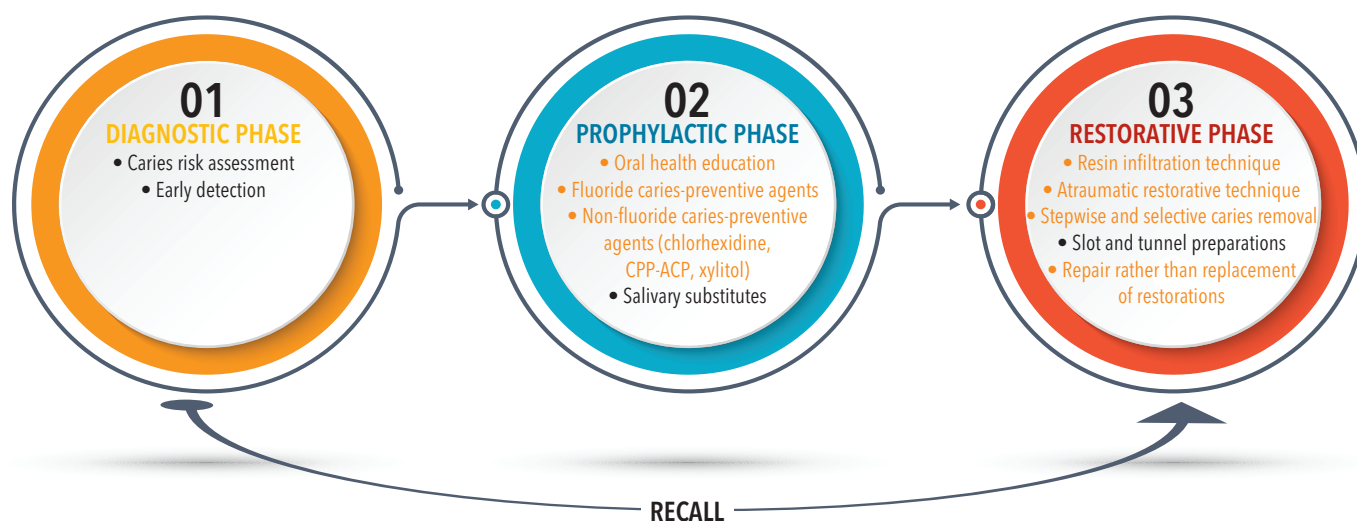


FIGURE 1: MID phases [Elements of MID reviewed in this article highlighted].

Introduction

Old age is often defined as having a chronological age of 65 or older.¹ Over the last 15 years, the proportion of the Irish population over 65 years of age has increased by 19.1%, the greatest increase of any demographic over this time.² This proportion is predicted to continue to rise for the foreseeable future. The World Health Organisation (WHO) estimates that by 2050, two billion people will be aged 60 and over.³ These statistics represent massive societal change, and challenge traditional social and economic structures, particularly as families reduce in size and the age dependency ratio shifts towards higher numbers of dependent people compared to those of working age.

Older people may be at increasing risk of the biopsychosocial consequences of age-related syndromes such as multimorbidity, polypharmacy, frailty and increasing dependency. For the dental profession, such issues may impact communication, consent and access to dental care, while complicating safe and effective treatment of oral disease. Readers are encouraged to explore the Seattle Care Pathway, which considers the implications of these issues in depth.⁴ In addition, the number of older adults retaining their natural teeth is increasing.⁵ Older people who may not have been expected to survive, let alone prosper for long periods, are at ongoing risk of common oral diseases such as dental caries, periodontal disease and tooth loss for potentially extended periods of old age.⁶⁻⁹ This means that the dental profession is increasingly tasked to support growing numbers of older patients to maintain their dentitions, in increasingly complex social and medical contexts.

Caries management is currently in the grip of a paradigm shift from traditional mechanical 'drill and fill' techniques towards the treatment of dental caries biologically as a complex ecological process.¹⁰ Our improved understanding of caries as a dynamic process of demineralisation and remineralisation has led, over the last 40 years, to the development of concepts, procedures and materials that can assist clinicians in the prevention, early identification and conservative management of caries.

Minimum intervention dentistry (MID) has become an increasingly mainstream model of caries prevention and management, which minimises the need for treatment that destroys dental tissues. In MID the emphasis is on preventing disease, while surgical intervention is limited to cases where it is necessary.¹¹ Similar concepts can also be applied to the management of periodontal disease.¹²

MID can be considered across three phases: diagnostic, prophylactic and restorative (Figure 1).¹³

With the rise of evidence-based practice, dental professionals and the public are increasingly aware of the ethical and professional obligation for use of best evidence to support patients.²⁶ Despite growing recommendations of the use of MID techniques,^{13,27,28} there is evidence that MID is not being widely adopted by dentists.²⁹⁻³¹ To encourage dental professionals in Ireland to consider MID as a viable treatment philosophy, particularly for older adults, we review the literature that supports this approach. Our research question asks: 'Does MID work for the management of caries in older adults?'

Methods

A literature search was undertaken using the following databases: PubMed; Google Scholar; and, the Cochrane Library. The terms used to guide the search were: "minimum intervention", AND "dentistry OR dental", AND "older adults OR elderly", along with more specific terms such as "fluoride", "preventive measures", "remineralisation of tooth structure", "oral health education", "non-fluoride caries preventive agents", "chlorhexidine", "casein phosphopeptides-amorphous calcium phosphate", "xylitol", "minimally invasive operative interventions", "atraumatic restorative technique", "minimal caries removal techniques", "stepwise excavation technique", "partial excavation technique", "selective caries removal", "resin infiltration technique", and "repair rather than replacement of restorations". Identified studies were reviewed and data was tabulated. The outcomes and quality of the studies were reported narratively. This section reports the findings of this review based on the stages of MID (Figure 1).

Results

A total of 25 articles from the search of the databases and associated reference lists were deemed relevant to this literature review. In all, 13 studies related to topical fluorides, five related to chlorhexidine and five related to the atraumatic restorative technique (ART). A Cochrane review related to oral health education and a systematic review related to silver diamine fluoride (SDF) were also included.

Table 1: Studies reporting on effectiveness of fluoride for prevention and/or arrest of caries in older adult patients.

Author	Study design (n)	Intervention	Duration	Outcome
WATER FLUORIDATION				
Hunt <i>et al.</i> , 1989 ⁷⁷	Prospective cohort (520)	The effect of long-term residence in fluoridated vs non-fluoridated water communities	18 months	Coronal and root surface DFS
FLUORIDATED MILK				
Petersson <i>et al.</i> , 2011 ⁷⁸	Double-blinded RCT (160)	The effect of standard milk vs milk with 5ppm F and probiotic bacteria vs milk with probiotic bacteria vs milk with 5ppm F	15 months	RCI and ERM
FLUORIDATED TOOTHPASTES				
Jensen and Kohout, 1989 ³⁵	Double-blinded RCT (810)	Effects of 1.1ppm fluoridated toothpaste vs <1ppm fluoridated toothpaste	1 year	DMFS
Ekstrand <i>et al.</i> , 2008 ³³	Double-blinded RCT (28)	5,000ppm fluoridated toothpaste vs brushing by a dental hygienist and Duraphat application once a month vs 1,450ppm fluoridated toothpaste	8 months	Texture, contour, location and colour of root caries
Ekstrand <i>et al.</i> , 2013 ³⁴	Double-blinded RCT (176)	5,000ppm F vs 1,450ppm F toothpaste	8 months	Texture, contour, location and colour of root caries
FLUORIDE IN MOUTHRINSES				
Wallace <i>et al.</i> , 1993 ³⁷	RCT (466)	Semi-annual applications of topical APF gel + placebo mouthrinse vs fluoridated (NaF) mouthrinse daily vs placebo mouthrinse daily	48 months	DMFS
Fure <i>et al.</i> , 1998 ³⁶	RCT (164)	Rinsing twice daily with 0.05% NaF vs sucking twice daily on 1.66mg NaF tablet vs brushing three times daily using slurry rinsing technique vs brushing using usual manner (control) (all 4 groups used 0.32% NaF toothpaste twice daily)	2 years	DFS
Wyatt and MacEntee, 2004 ³⁸	Double-blinded RCT (369)	Rinsing with 0.2% NaF solution daily vs 0.12% CHX solution daily	2 years	Caries incidence (per surface)
Petersson <i>et al.</i> , 2007 ³⁹	Double-blinded RCT (100)	250ppm F mouthwash twice daily vs placebo mouthrinse	1 year	ERM
FLUORIDE IN VARNISHES/GELS/SOLUTIONS				
Li <i>et al.</i> , 2006 ⁷⁹	RCT (83)	OHI + soda water (placebo) vs OHI + SDF vs OHI + SDF + KI	30 months	Arrest rate of carious root surfaces; assess colour of arrested carious lesions
Fure <i>et al.</i> , 2009 ⁴¹	Single-blinded RCT (40)	Carisolv and Duraphat varnish (2.23% F) vs Duraphat varnish (2.23% F) vs stanous fluoride solution (8%)	1 year	DMFS, DFRS
Tan <i>et al.</i> , 2010 ⁴⁰	Double-blinded RCT (306)	OHI vs OHI + SDF solution (38%) annually vs OHI + 5% NaF varnish every 3 months vs OHI + 1% CHX varnish every 3 months	3 years	Development of new caries on the exposed sound root surfaces
Zhang <i>et al.</i> , 2013 ⁴²	Double-blinded RCT (266)	OHI vs OHI + SDF vs OHI + SDF + OHE programme	2 years	Prevention and arrest of new carious surfaces on exposed roots
ABBREVIATIONS: APF = acidulated phosphate fluoride CHX = chlorhexidine DFRS = decayed filled root surfaces DFS = decayed filled surfaces DMFS = decayed missing filled surfaces ERM = electric resistance measurements F = fluoride KI = potassium iodide N = sample size NaF = sodium fluoride OHI = oral hygiene instructions RCI = root caries index RCT = randomised controlled trial SDF = silver diamine fluoride				

Comments

Coronal and root caries were consistently lower among long-term residents of the fluoridated communities than among residents of non-fluoridated communities

Significantly higher number of root caries reversals in participants drinking milk with fluoride +/- probiotic lactobacilli compared to participants drinking standard milk

Significant decrease in coronal and root caries incidence for participants using a 1.1ppm fluoridated toothpaste compared to <1ppm fluoridated toothpaste

Significant improvement in root caries status in participants using a 5,000ppm fluoridated toothpaste or brushing by a dental hygienist and Duraphat application monthly compared to participants using 1,450ppm fluoridated toothpaste

5,000ppm fluoridated dentifrice is significantly more effective in remineralising root caries in elderly disabled participants when compared to 1,450ppm fluoridated toothpaste over eight months

Number of incremental DMFS was lower in participants using 0.05% NaF rinse daily compared to patients having semi-annual applications of APF gel + placebo mouthrinse daily. Both were lower than participants using only a placebo mouthrinse daily

Statistically less coronal and root caries developed in patients rinsing with 0.05% NaF twice daily compared to control

A daily mouthrinse with 0.2% NaF solution is significantly better than either a 0.12% CHX solution or a placebo rinse at reducing caries incidence

Statistically significantly more reversals of root caries in the group rinsing twice a day with a 250ppm F solution containing amine fluoride and potassium fluoride (1:1) compared to rinsing with a fluoride-free placebo mouthwash

The arrest rate in SDF and SDF + KI groups were statistically significant compared to placebo

Majority of initial root lesions were arrested during one year, irrespective of fluoride treatment used

Significantly less new root caries in SDF and NaF groups compared to control group

Significantly less new active root caries surfaces developed in SDF group and oral health education group compared to the control group

Prophylactic phase

Oral health education

This review found no evidence for oral hygiene education for older adults in the community. Regarding older adults in nursing homes, a Cochrane review reported that there is insufficient evidence to support oral health education for nursing home staff and residents.³²

Topical fluorides

A total of 13 studies (**Table 1**) evaluating the effectiveness of topical fluorides were identified: water (n=1); milk (n=1); toothpastes (n=3); mouthwashes (n=4); and, gels/varnishes/solutions (n=4). All topical fluorides led to significant caries reduction in these studies. Three double-blinded, randomised controlled trials (RCTs) with a follow-up of eight months to one year looked at the effectiveness of fluoridated toothpastes in older patients.³³⁻³⁵ All studies had low dropout rates, groups were similar at baseline and had a single examiner. Good-quality evidence is available to support the use of fluoridated toothpastes in the management of caries for older adults. While 1,100ppm and 1,450ppm fluoridated toothpastes were effective, evidence suggests that caries arrest was maximised with the use of 5,000ppm fluoridated toothpastes.³³⁻³⁵ Four RCTs reviewed effectiveness of fluoridated mouthwashes,³⁶⁻³⁹ two of which were double-blinded.^{38,39} However, three trials had large loss to follow-up³⁷⁻³⁹ and two did not report clearly regarding blinding.^{36,37} Available evidence seems to favour fluoride mouthrinses for caries prevention among older patients. Four high-quality, double-blinded RCTs verified the effectiveness of fluoride in varnishes/solutions.⁴⁰⁻⁴² A recent systematic review also highlighted the effectiveness of SDF in the prevention and arrest of root caries and remineralisation of deep occlusal lesions in older adults.⁴³ Good evidence is available to support the use of topical fluoride in the form of varnishes/gels/solutions for caries prevention in older patients. Due to the small number of studies available, evidence for the effectiveness of water and milk fluoridation among this population was limited.

Non-fluoride caries-preventive agents (chlorhexidine, CPP-ACP, xylitol)

Five studies measured the effectiveness of chlorhexidine as a caries-preventive topical agent for older adults.^{38,40,44-46} Based on these studies of double-blinded RCTs, it can be concluded that chlorhexidine mouthwash was not very effective in reducing caries in older patients, whereas chlorhexidine varnish application can be effective (**Table 2**). Further studies with larger sample sizes, lower dropout rates and longer duration are needed to draw firm conclusions.⁴⁷⁻⁴⁹ High-quality studies verifying the effectiveness of casein phosphopeptides-amorphous calcium phosphate (CPP-ACP) and xylitol with elderly patients are lacking.⁵⁰

Restorative phase (minimally invasive operative interventions)

Atraumatic restorative technique

Five studies evaluating the effectiveness of the ART are summarised in **Table 3**: one case series measuring the success of ART restorations;⁵¹ three double-blinded RCTs measuring the success of ART versus conventional restorations;⁵²⁻⁵⁴ and, one double-blinded RCT looking at the success rate of ART versus ART and Carisolv.⁵⁵

The success rate of ART restorations in older adults reported in the literature varies from 63% to 86.4%. None of the studies showed a statistically significant difference in the success rate of the ART against conventional restorations. An

Table 2: Studies evaluating the effectiveness of chlorhexidine for the prevention and/or arrest of caries in older adult patients.

ARTICLE / Author	Study design (n)	Intervention	Duration	Outcome	Comments
CHLORHEXIDINE MOUTHRINSE					
Wyatt and MacEntee, 2004 ³⁸	Double-blinded RCT (369)	Rinsing with 0.2% NaF solution daily vs 0.12% CHX solution daily	Two years	Coronal and root DMFS	A daily mouthrinse with 0.2% NaF solution is significantly better than either a 0.12% CHX solution or a placebo rinse at reducing caries incidence
Wyatt <i>et al.</i> , 2007 ⁴⁵	Double-blinded RCT (1,101)	0.12% CHX solution vs placebo	Five years	Decayed, filled, extracted (per tooth)	Regular rinsing with 0.12% CHX didn't have significant effects on the preservation of sound tooth structure
CHLORHEXIDINE VARNISH					
Brailsford <i>et al.</i> , 2002 ⁴⁴	Double-blinded RCT (102)	Fluoride varnish vs fluoride + chlorhexidine varnish	12 months	Lesion width, height, distance from gingival margin and length of exposed root	The combination of a F-containing varnish and a CHX-containing varnish significantly improved the clinical status of existing root caries lesions compared to F-containing varnish application only
Baca <i>et al.</i> , 2009 ⁴⁶	Double-blinded RCT (68)	CHX varnish group vs placebo group	12 months	Incidence of root caries	Incidence of root caries was significantly lower in CHX varnish group compared to the placebo group
Tan <i>et al.</i> , 2010 ⁴⁰	Double-blinded RCT (306)	OHI vs OHI + SDF solution (38%) annually vs OHI + 5% NaF varnish every three months vs OHI + 1% CHX varnish every three months	Three years	Root DFS	Significantly less new root caries in SDF and NaF groups compared to OHI and OHI + 1% CHX groups
ABBREVIATIONS		DFS = decayed filled surfaces DMFS = decayed missing filled surfaces DMFT = decayed missing filled teeth		F = fluoride N = sample size NaF = sodium fluoride	OHI = oral hygiene instructions RCT = randomised controlled trial SDF = silver diamine fluoride
CHX = chlorhexidine					

exception to this was a double-blinded RCT reporting a statistically significant difference in success rate in favour of conventional restorations.⁵⁴ However, the follow-up period was only six months, there was a 15% dropout rate, and two different operators placed the restorations. Therefore, caution is recommended when generalising these results.

One RCT looked at the success rate of ART restorations versus ART restorations following the use of a chemical caries removal agent, Carisolv.⁵⁵ The success rate for both groups was similar and statistically insignificant.

The studies identified have short follow-up periods from six months to two years, small sample size and high dropout rates. Additionally, some of the

studies used different restorative materials for each group;^{52,53} GI was used for the ART group and resin-modified glass ionomer (RMGI) was used for the conventional group. This may introduce bias, as despite the fact that high-viscosity GI was recommended initially, ART restorations are now understood to perform better when RMGI is used rather than GI.⁵⁶

Resin infiltration, selective/stepwise caries removal techniques and repair rather than replacement of restorations

No studies were identified looking at the success of these procedures among older adults.

Phases of minimum intervention dentistry

The diagnostic phase of MID aims to estimate the risk of caries for the individual patient through caries risk assessment (CRA) and caries diagnosis at an early stage.

The prophylactic phase aims to establish a balance between protective and pathological factors. It focuses on prevention of caries and remineralisation of tooth structure by influencing oral health behaviour and by using topical preventive agents such as fluoride and chlorhexidine. MID suggests that oral hygiene and diet advice should follow individual risk assessment.¹⁴ Topical fluoride is a central aspect of the prophylactic phase. It acts by promoting remineralisation, increasing enamel resistance to acid attacks and inhibiting bacterial activity.¹⁵ Various forms of topical fluoride are available, including water and milk fluoridation, and fluoridated toothpastes, mouthwashes, gels, varnishes and solutions. Non-fluoride topical agents have also been suggested for prevention of caries in older adults and include chlorhexidine, casein phosphopeptides-amorphous calcium phosphate (CPP-ACP) and xylitol products.^{14,16-18}

The restorative phase involves minimally invasive operative interventions, applied if caries has led to significant loss of dental tissue necessitating intervention to restore aesthetics and function. Minimally invasive operative interventions for elderly patients include procedures such as: the resin infiltration technique; the atraumatic restorative technique (ART); and, stepwise and selective caries removal and repair rather than replacement of defective restorations.¹⁹

Resin infiltration technique

The resin infiltration technique involves arresting the progression of a carious lesion by perfusion of porous enamel with resin via capillary action.²⁰ It is indicated for early, non-cavitated carious lesions radiographically limited to enamel or the outer third of dentine.

Atraumatic restorative technique

The ART was first introduced in the 1980s and has been defined as "a minimally invasive care approach in preventing dental caries and stopping its further progression".²¹ It consists of a preventive (ART sealant) and a restorative (ART restoration) component. The ART sealant involves placing

Author	Study design (n)	Intervention	Duration	Outcome	Comments
Honkala, 2002 ⁵¹	Case series (33)	ART restorations	One year	Retention, presence of marginal defect	Success of ART restorations is high (79%)
Lo <i>et al.</i> , 2006 ⁵²	Double-blinded RCT (162)	Conventional restorations vs ART restorations	One year	Retention, marginal integrity, marginal discolouration, recurrent caries, anatomic form, surface texture	No statistical difference found between restoration methods
Gil-Montoya <i>et al.</i> , 2014 ⁵⁵	Double-blinded RCT (81)	ART vs ART + Carisolv	Two years	ART evaluation criteria published by Frencken <i>et al.</i> , 1996	Carisolv does not statistically improve success rates of ART restorations
da Mata <i>et al.</i> , 2015 ⁵³	Double-blinded RCT (300)	ART vs conventional restorations	Two years	Assessment of restoration (scale 0-8)	The type of treatment (ART or CT) had no effect on restoration survival
Cruz Gonzalez and Marin Zuluaga, 2016 ⁵⁴	Double-blinded RCT (174)	ART vs conventional restorations	Six months	Retention, adaptation, discolouration, anatomical shape, surface, secondary caries	Success of conventional restorations statistically significantly higher than ART restorations

ABBREVIATIONS	GI = glass ionomer	RCT = randomised controlled trial
ART = atraumatic restorative technique	N = sample size	RMGI = resin modified glass ionomer

This study aimed to review the literature regarding the use of MID for older adults. The MID philosophy supports a preventive approach whereby every effort should be made to remineralise non-cavitated lesions. This review found evidence to support the use of topical fluorides like varnish, rinses and high-fluoride toothpaste to prevent dental caries in older adults. Evidence for the use of SDF for root caries was also noted. While chlorhexidine varnish has shown promising results in reducing caries in older adult patients, fluoride remains the gold standard agent in the prevention and arrest of early carious lesions. This means that topical fluorides can be recommended for this population as part of the MID philosophy promoting prevention in order to

Stepwise and selective caries removal

avoid or minimise operative intervention.⁵⁷ At its core, the practice of MID begins with caries risk assessment (CRA). There are a number of tools and resources to help dental care professionals in this task.⁵⁸⁻⁶² In the absence of national guidelines in Ireland specifically for adults,⁶³ readers are directed towards the essential UK guidelines 'Delivering Better Oral Health' regarding the use of topical fluorides for individuals at high and low risk of dental caries.⁶⁴ Insufficient evidence was found for other preventive components of MID that have been recommended in the management of caries for older adults, such as oral health education, CPP-ACP and xylitol.

This review also sought evidence for operative MID in older age. No studies could be identified to test the use of resin infiltration for older adults, despite

restoration. However, there are recent trends to suggest that stepwise removal of carious tissues is being superseded by selective caries removal. Selective caries removal is a one-step procedure that involves cleaning the EDJ until it has no discolouration and then removing only soft infected dentine from the floor of the cavity, leaving behind hard affected dentine, which has the potential to heal and re-mineralise.²⁴

Repair rather than replacement of defective restorations

The principles of MID suggest that repair rather than replacement of defective restorations is preferred when possible. The rationale is that replacing an extensive restoration can have detrimental effects, and potentially render the tooth unrestorable. This is particularly true for older patients, who are likely to have large restorations as a consequence of the restorative cycle.²⁵

While the restorative phase is needed in some cases, it is not an essential component of MID as it does not address the aetiological factors and therefore does not provide the primary solution to caries.¹³ Recall is integral to the MID concept, allowing evaluation and reinforcement, with the interval depending on each patient's risk for caries.

superior results to topical agents when studied in younger groups.^{20,65} Similarly, while minimal caries removal techniques such as stepwise and selective caries removal have shown decreased incidence of pulp exposure in primary and permanent teeth of younger patients,⁶⁶ evidence for their use with older adults is lacking.

Most evidence in this review regarding operative MID in older age focused on the ART. The evidence presented suggests similar effectiveness to conventional restorative approaches for older adults. ART restorations can be particularly useful in the management of older adults and evidence is indeed available to support their success. Despite this, many dentists find it hard to accept this concept and adopt it in routine practice.⁶⁷

MID suggests that repair rather than replacement of defective restorations is preferred.⁶⁸ While relevant studies were not identified for the older population, two recent Cochrane reviews have looked at the evidence for the effectiveness of replacement versus repair of defective amalgam and composite restorations in adults.^{69,70} Both reviews were inconclusive, emphasising the need for further research in this field.

The limitations of this literature review need to be considered by readers. Firstly, this study adopted a narrative rather than a systematic design. A standardised quality assessment tool was not used; rather, the quality of the studies was assessed narratively. Another point worth considering is that MID is a huge field of dentistry and this study did not expand on all the elements of this approach. Some approaches that fit into a broader definition of MID were omitted when applied, such as CRA, the use of salivary substitutes, and slot and tunnel preparations.^{17,71} One last factor to consider is that the authors have an interest in improving the oral health of older adults in Ireland and therefore promote MID as a favoured approach from their previous understanding of the literature and their own practice. Readers should consider our own biases when considering this review.

While there is promising evidence to support elements of MID for older adults in Ireland, barriers exist that impede the widespread adoption of MID in routine dental practice. These include a lack of training and awareness regarding its effectiveness by dentists and policymakers.¹³ If MID is truly to be established as a preferred approach, the structure of the healthcare system must support minimal intervention and prevention rather than treatment of disease. However, the current Dental Treatment Services Scheme for adult medical cardholders in Ireland, which many older adults are entitled to, encourages operative rather than preventive interventions. The Irish Department of Health, which prioritises the oral health of older adults,^{72,73} has committed to introducing a preventive dental health package for medical cardholders, recognising that “early intervention saves the taxpayer later”.⁷⁴ MID seems a suitable vector for such ambitions. Such measures will hopefully promote MID and the prevention of oral disease, decrease destructive operative interventions, and improve the oral and general health of Irish older adults. Examples exist where this has been achieved. In Sweden, fixed annual subsidies for preventive dental care⁷⁵ have coincided with the improvement of dental health among the older Swedish population.⁷⁶

Conclusion

This literature review appraised the evidence available for the use of MID in older patients. Among older adults, fluoride, especially in toothpastes and varnishes/gels/solutions, is the most extensively studied component of MID, with a high level of evidence supporting its use. Research into the ART is also promising. Further RCTs with longer duration, larger sample size and low

dropout rates are required to strengthen available evidence. Studies on the effectiveness of oral health education, selective caries removal, the use of the resin infiltration technique, and the repair rather than replacement of restorations for older patients, are needed.

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CPD questions

To claim CPD points, go to the MEMBERS' SECTION of www.dentist.ie and answer the following questions:

1. The resin infiltration technique can be used to arrest a carious lesion that is:

- ☐ A: cavitated but limited to enamel
- ☐ B: cavitated but limited to enamel or outer third of dentine
- ☐ C: uncavitated but limited to enamel or outer third of dentine
- ☐ D: uncavitated or cavitated but limited to enamel or outer third of dentine

2. Based on minimum intervention dentistry (MID) principles, which of the following apply when preparing a cavity for a restoration?

- ☐ A: Only soft caries-infected dentine should be removed from the dento-enamel junction (DEJ) and the floor of the cavity, leaving behind caries-affected dentine
- ☐ B: All discolouration should be removed from the DEJ but only soft caries-infected dentine should be removed from the floor of the cavity, leaving behind caries-affected dentine
- ☐ C: All discoloured carious dentine should be removed from the DEJ and the floor of the cavity, leaving behind only healthy dentine of a normal colour
- ☐ D: All discoloured carious dentine should be removed from the DEJ and the floor of the cavity, in addition to some healthy dentine if required to improve the retention and resistance form of the preparation

3. Which sentence(s) best describe silver diamine fluoride?

- ☐ A: It is effective in preventing caries
- ☐ B: It is effective in arresting caries
- ☐ C: It is associated with black staining
- ☐ D: All of the above



Beauty is only mucosa deep: a retrospective analysis of oral lumps and bumps caused by cosmetic fillers

Martin, L.H.C., Hankinson, P.M., Khurram, S.A.

Introduction

The injection of dermal fillers into orofacial tissues is becoming increasingly popular for cosmetic purposes, in particular for lip augmentation. Both natural and synthetic filler materials are available, producing a spectrum of clinical and histological appearances.

Aims

The aim of this study was to review the clinicopathological characteristics of dermal filler cases from 2006 to 2016, reported at a specialist oral pathology unit.

Methods

An archival search of the pathology database was performed to retrieve cases reported as being consistent with cosmetic fillers.

Results

Ten cases of orofacial cosmetic fillers were retrieved. Of these cases, 100% were from female patients and the mean age of presentation was 47.6 years (range 24-68 years). The lips were the most frequently involved site (80%, n=8). The majority of provisional diagnoses were related to salivary gland disease, including neoplasms (30%, n=3), cysts (20%, n=2) or inflammatory disease (10%, n=1). Only two cases (20%) were clinically thought to be related to previous cosmetic injections. A variety of filler materials were seen, including collagen, hydroxyapatite and silicone. However, hyaluronic acid-based materials were the most common (50%, n=5).

Conclusions

Complications of cosmetic dermal fillers are becoming more common and should be considered within a differential diagnosis for unusual orofacial swellings.

British Dental Journal 2019; 227: 281-284.

Fluoride revolution and dental caries: evolution of policies for global use

Whelton, H.P., Spencer, A.J., Do, L.G., Rugg-Gunn, A.J.

Epidemiological studies over 70 years ago provided the basis for the use of fluoride in caries prevention. They revealed the clear relation between water fluoride concentration, and therefore fluoride exposure, and prevalence and severity of dental fluorosis and dental caries. After successful trials, programmes for water fluoridation were introduced, and industry developed effective fluoride-containing toothpastes and other fluoride vehicles. Reductions in caries experience were recorded in many countries, attributable to the widespread use of fluoride. This is a considerable success story; oral

health for many was radically improved. While previously, water had been the only significant source of fluoride, now there are many, and this led to an increase in the occurrence of dental fluorosis. Risks identified for dental fluorosis were ingestion of fluoride-containing toothpaste, water fluoridation, fluoride tablets (which were sometimes ingested in areas with water fluoridation), and infant formula feeds. Policies were introduced to reduce excessive fluoride exposure during the period of tooth development, and these were successful in reducing dental fluorosis without compromising caries prevention. There is now a much better understanding of the public perception of dental fluorosis, with mild fluorosis being of no aesthetic concern. The advantages of water fluoridation are that it provides substantial lifelong caries prevention, is economic, and reduces health inequalities: it reaches a substantial number of people worldwide. Fluoride-containing toothpastes are by far the most important way of delivering the beneficial effect of fluoride worldwide. The preventive effects of conjoint exposure (e.g., use of fluoride toothpaste in a fluoridated area) are additive. The World Health Organisation has informed member states of the benefits of the appropriate use of fluoride. Many countries have policies to maximise the benefits of fluoride, but many have yet to do so.

Journal of Dental Research 2019; 98: 837-846.

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Risk of adverse reactions to oral antibiotics prescribed by dentists

Thornhill, M.H., Dayer, M.J., Durkin, M.J., Lockhart, P.B., Baddour, L.M.

Abstract

Dentists prescribe a large portion of all oral antibiotics, and these are associated with a risk of adverse drug reactions (ADRs). The aim of this study was to quantify the risk of ADRs associated with oral antibiotics commonly prescribed by dentists. NHS Digital Prescribing data and Yellow Card Drug Analysis data for 2010 to 2017 were abstracted to quantify dental antibiotic prescribing in England, and the rate and types of ADRs associated with them. During the period of study, the mean number of actively practising dentists in England was 23,624. Amoxicillin accounted for 64.8% of dental antibiotic prescribing and had the lowest reported rate of fatal ADRs (0.1/million prescriptions) and overall ADRs (21.5/million prescriptions). Indeed, amoxicillin was respectively six and three times less likely to cause an ADR than the other penicillins, penicillin V and amoxicillin + clavulanic acid, and appears to be very safe in patients with no history of penicillin allergy. In contrast, clindamycin, which is often used in patients with penicillin allergy, had the highest rate of fatal (2.9/million prescriptions) and overall (337.3/million prescriptions) ADRs, with *Clostridioides* (formerly *Clostridium*) *difficile* infections pivotal to its ADR profile. Other amoxicillin alternatives, clarithromycin and metronidazole, while significantly worse than amoxicillin, were three and nearly five times less likely to cause an ADR than clindamycin. Ranked from least to most likely to cause an ADR, antibiotics most commonly prescribed were as follows: amoxicillin < cephalosporins < erythromycin < tetracyclines < azithromycin < metronidazole < amoxicillin + clavulanic acid < clarithromycin < penicillin V < clindamycin. This study confirmed the high level of safety associated with use of amoxicillin by dentists and the significantly worse rates of fatal and nonfatal ADRs associated with other penicillins and alternatives to amoxicillin for those who are penicillin allergic. In particular, clindamycin had the highest rate of fatal and non-fatal ADRs of any of the antibiotics commonly prescribed by dentists.

Journal of Dental Research 2019; 98: 1081-1087.

Assessing the accuracy of casting and additive manufacturing techniques for fabrication of a complete palatal coverage metal framework

Forrester, K., Sheridan, R., Phoenix, R.D.

Purpose: To provide information regarding the accuracy of additive manufacturing in comparison to conventional casting, specifically for fabrication of complete palatal coverage metal frameworks.

Materials and methods: Three additive manufacturing techniques were tested: selective laser melting (SLM); electron beam melting (EBM); and, computer-aided design/cast (CADcast), with conventional casting as the control. Both the SLM and EBM groups were tested pre and post finishing, for a total of six test groups (n=10/group). A digital master design was used as the standard to which all frameworks were digitally compared by best-fit analysis, which generated root mean square values using proprietary software. A one-way ANOVA was conducted to test for statistical differences among materials, followed by a post-hoc multiple comparison test (Tukey's test HSD). Surface roughness for one framework arbitrarily selected from each group was analysed using a profilometer.

Results: There was a significant difference in accuracy among the materials (F=99.79, p<0.0001). A post-hoc Tukey test indicated that CADcast differed significantly from the other five materials (i.e., most accurate, p<0.01). EBM prefinished and EBM finished were both significantly different from the other materials (i.e., least accurate). Colour mapping images help to visualise the differences between each framework compared to the master design. The surface roughness values ranged from 22-63.5 m, with CADcast being the smoothest, and EBM prefinished the roughest.

Conclusions: CADcast and SLM techniques were as or more accurate than the conventional technique for producing an uncomplicated framework design. Further investigation is recommended regarding the surface roughness of additive manufacturing products and potential biological complications.

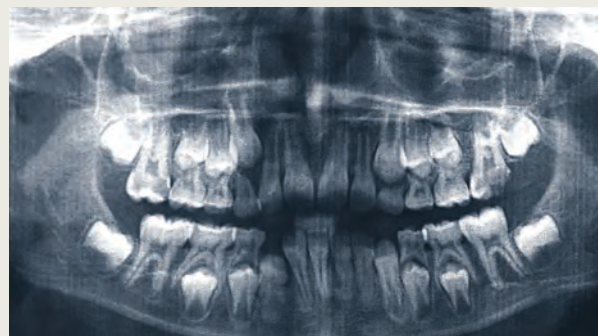
Journal of Prosthodontics 2019; 28: 811-817.

Quiz answers

Questions on page 238

- Following basic dental care and diet analysis, interceptive orthodontic treatment should be considered.
- If the aim of treatment is for the second permanent molar to erupt into the first permanent molar space, there are a number of radiographic factors that would indicate that it is the ideal time to extract the first permanent molars:
 - the root bifurcation of the second permanent molar should be calcifying;
 - the crypt of the second permanent molar should overlay the first permanent molar root;
 - the angle the second permanent molar makes with a vertical line bisecting the first permanent molar should be 15-30°; and,

- the extraction should be before the eruption of the second molar and second premolar but after the eruption of the lateral incisor in that quadrant.
- A specialist opinion should be sought if the patient has an increased overjet or moderate/severe crowding.



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References: 1. Merry A. et al. AFT-MX-1, a prospective parallel group, double-blind comparison of the analgesic effect of a combination of paracetamol and ibuprofen, paracetamol alone, or ibuprofen alone in patients with post-operative pain. Department of Anaesthesiology, University of Auckland, New Zealand 2008. *compared with the same daily dose of standard paracetamol or ibuprofen alone.

Easolief Duo 500 mg/150 mg film-coated tablets Each tablet contains paracetamol 500 mg and ibuprofen 150 mg.
Presentation: A white, capsule shaped tablet with breakline on one side and plain on the other side. **Indications:** Short-term symptomatic treatment of mild to moderate pain. **Dosage: Adults/elderly:** The usual dosage is one to two tablets taken every six hours up to a maximum of six tablets in 24 hours. **Children:** Easolief Duo is contraindicated in children under 18 years.
Contraindications: Severe heart failure, known hypersensitivity to paracetamol, ibuprofen, other NSAIDs or to any of the excipients, active alcoholism, asthma, urticaria, or allergic-type reactions after taking acetylsalicylic acid or other NSAIDs, history of gastrointestinal bleeding or perforation related to previous NSAID therapy, active or history of recurrent peptic ulceration, haemorrhage, severe hepatic failure or severe renal failure, cerebrovascular or other active bleeding, blood-forming disturbances, during the third trimester of pregnancy. **Warnings and precautions:** This medicine is for short term use and is not recommended for use beyond 3 days. Clinical studies suggest that use of ibuprofen, particularly at a high dose may be associated with a small increased risk of arterial thrombotic events. Patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease and/or cerebrovascular disease should only be treated with ibuprofen after careful consideration and high doses should be avoided. Careful consideration should be exercised before initiating long-term treatment of patients with risk factors for cardiovascular events. The use of paracetamol at higher than recommended doses can lead to hepatotoxicity, hepatic failure and death. Patients with impaired liver function or a history of liver disease or who are on long term ibuprofen or paracetamol therapy should have hepatic function monitored at regular intervals. Severe hepatic reactions, including jaundice and cases of fatal hepatitis, though rare, have been reported with ibuprofen. Paracetamol can be used in patients with chronic renal disease without dosage adjustment. There is minimal risk of paracetamol toxicity in patients with moderate to severe renal failure. Caution should be used when initiating treatment with ibuprofen in patients with dehydration. The use of an ACE

inhibiting drug, an anti-inflammatory drug and a diuretic at the same time increases the risk of renal impairment. Blood dyscrasias have been rarely reported. Patients on long-term therapy with ibuprofen should have regular haematological monitoring. Like other NSAIDs, ibuprofen can inhibit platelet aggregation. GI bleeding, ulceration or perforation, which can be fatal, has been reported with all NSAIDs at anytime during treatment. Combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors) should be considered. Use with concomitant NSAIDs including cyclooxygenase-2 selective inhibitors should be avoided. NSAIDs may lead to onset of new hypertension or worsening of pre-existing hypertension and patients taking antihypertensive medicines with NSAIDs may have an impaired anti-hypertensive response. Fluid retention and oedema have been observed in some patients taking NSAIDs. NSAIDs may very rarely cause serious cutaneous adverse events such as exfoliative dermatitis, toxic epidermal necrolysis and Stevens-Johnson syndrome. Products containing ibuprofen should not be administered to patients with acetylsalicylic acid sensitive asthma and should be used with caution in patients with pre-existing asthma. Adverse ophthalmological effects have been observed with NSAIDs. For products containing ibuprofen aseptic meningitis has been reported only rarely. NSAIDs may mask symptoms of infection and fever. **Interactions:** Warfarin, medicines to treat epilepsy, chloramphenicol, probenecid, zidovudine, medicines used to treat tuberculosis such as isoniazid, acetylsalicylic acid, other NSAIDs, medicines to treat high blood pressure or other heart conditions, diuretics, lithium, methotrexate, corticosteroids. Refer to summary of product characteristics for other interactions. **Fertility, pregnancy and lactation:** Easolief Duo is contraindicated during the third trimester of pregnancy. **Driving and operation of machinery:** Dizziness, drowsiness, fatigue and visual disturbances are possible after taking NSAIDs. If affected patients should not drive or operate machinery. **Undesirable effects:** Dizziness, headache, nervousness, tinnitus, oedema, fluid retention, abdominal pain, diarrhoea, dyspepsia, nausea, stomach discomfort, vomiting, flatulence, constipation, slight gastrointestinal blood loss, rash, pruritus, alanine aminotransferase increased, gamma-glutamyltransferase increased, abnormal liver function tests, blood creatinine increased and blood urea increased. Refer to Summary of Product Characteristics for other adverse effects. **Pack size:** 24 tablets. **Marketing authorisation holder:** Clonmel Healthcare Ltd., Clonmel, Co. Tipperary. Marketing authorisation number: PA0126/294/1. Medicinal product not subject to medical prescription. For retail sale through pharmacy only. A copy of the summary of product characteristics is available upon request. **Date prepared:** March 2018. 2018/ADV/EAS/036H.

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Dublin 7. Part-time associate required for a modern primary care centre to replace a departing colleague. Private-only clinic. Strong consultative skills required. General dental, prosthodontic, specialist orthodontic practice. Email bobby.bhopal@mac.com.

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Advertisements will only be accepted in writing via fax (01-295 0092), letter or email (liz@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than **Friday, November 22, 2019**. Classified ads placed in the *Journal* are also published on our website www.dentist.ie for 12 weeks. **Please note that all adverts are subject to VAT at 23%.**

Advert size	Members	Non-members
up to 25 words	€80	€160
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Full-time associate required in established private-only practice in Kilkenny/Carlow. Multidisciplinary team including orthodontist, hygienist, implantologist, oral surgeon, endodontist. Excellent back-up support. Cerec, in-house laboratory, digital scanners. Suit experienced colleague. January start. Long-term view required. Please send CV to bpm.gmedical@gmail.com.

Associate required for two days/week in a busy, friendly dental practice in Sandymount, Dublin 4. Modern, new facilities, fully digitalised with excellent support staff. Please reply with CV to drelizabeth@drelizabethmelvin.ie.

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Associate required to cover maternity leave in a busy mixed practice in Co. Galway. Four days per week for nine months with the option to stay on two days per week thereafter. Modern, recently refurbished practice with excellent support staff. Email careers@dentalcareireland.ie.

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Part-time associate required in modern, west Cork practice with full book guaranteed. Excellent support staff, state-of-the-art equipment and techniques. Minimum three years' experience. Email CVs to c.dentist@live.com.

Dentist: Associate (preference given to "with view to purchase"). Cork City. Immediate start. Email: eurozoneortho@gmail.com.

Associate required for a busy, established, recently refurbished, multi-surgery family practice. On M6 so can commute from Galway/Dublin. Large patient base. Excellent remuneration for the right candidate. Computerised and digital x-rays. Email bddentalreception@gmail.com.

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Limerick. Experienced, talented associate required for excellent three/four-day position in high-profile modern, busy clinic. Private, well-established and busy book, position replaces departing colleague. Computerised OPG/new equipment/excellent staff. Generous terms for the right candidate. Email limerickdentaljob@gmail.com.

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Part-time associate required two days per week initially in busy, vibrant practice in Oranmore, Galway. Experience not essential but good people skills and motivation necessary. Start date flexible. Reply with CV to orantowndentist@gmail.com.

South County Dublin. Associate required to replace departing colleague in November. Wednesdays and Fridays. Computerised, friendly practice. Experience preferred. Must be IDC registered. CVs to dentalassoc993@gmail.com.

Busy practice seeking a full/part-time associate dentist/nurse to join our practice in north Dublin. Must be IDC registered. Applications to northdublinclinic@gmail.com.

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Associate dentist required for full-time position in busy, modern practice in Monaghan starting November 2019. Minimum two years' experience. Fully computerised, excellent support staff. See website www.lakesidedental.ie for more information. Email CV to info@lakesidedental.ie.

Dentists

Modern, busy, Cork city centre practice requires part-time experienced dentist. Please send your CV via email to Kate at halydentalcare@gmail.com.

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Dentist required for two to three days for busy, modern Cork City practice. Enquiries to colintobinenterprises@gmail.com.

Drogheda – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our busy, well-established, fully computerised practice in Drogheda. Position offers five days per week and great support team. CVs to joanne.bonfield@smiles.co.uk.

Dun Laoghaire – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our private, state-of-the-art, well-established practice in Dun Laoghaire. Practice offers three to five days per week. CVs to joanne.bonfield@smiles.co.uk.

Enniscorthy – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our state-of-the-art, well-established practice in Enniscorthy, Co. Wexford. Practice offers five days per week plus welcome payment. CVs to joanne.bonfield@smiles.co.uk.

Kilkenny City. Experienced dentist required for busy dental practice. Full/part-time position available. Please email CV to ayrfielddentalpractice@gmail.com.

General dentist required, part-time or full-time considered, at new clinic in Kildare town. Our clinic offers cosmetic, implants, orthodontics and hygienist services, with CBCT available. Renovations will take place soon. Fantastic, friendly, hardworking team. Email CV to susan@dentalexcellence.ie.

Experienced dentist required for Cork suburb, busy, modern practice. Saturday mornings and one afternoon. Email CV and cover letter to cmgdental@gmail.com.

Deansgrange Dental Clinic has a fantastic opportunity for a general dentist in a state-of-the-art facility on a part-time/full-time basis. Private practice (no GMS), implants, endo, ortho, hygienists. CBCT, 3D printer, Cerec. Email careers@deansgrangedental.ie.

Enthusiastic dentist needed for practice in Kilkenny. Initially two mornings per week. Fully computerised. IDC registration essential. Email dentalpositionskk@gmail.com.

Are you an enthusiastic, ambitious dentist looking for a position in a busy dental clinic? Do you want to extend your range of skills? Dentist required to work three sessions per week in Bray, Co. Wicklow. CVs to dentist2required@gmail.com.

Alexandra Dental Group is recruiting dentists for our clinics in Claremorris and Roscommon Town. We have excellent support staff and management team so that you can focus on the dentistry. Our marketing team will ensure clinicians have a full book. Email jobs@alexandradental.ie.

Dublin – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our state-of-the-art, well-established practice in Clonsaugh, Dublin. Practice offers five days per week. Applications to joanne.bonfield@smiles.co.uk.

Galway – Smiles Dental (part of Bupa Dental Care) is looking for a passionate dentist to join our state-of-the-art, well-established practice in Galway. Practice offers four days per week and great earning potential. Applications to joanne.bonfield@smiles.co.uk.

General dentist required for busy practice in Citywest, Dublin. Replacing departing colleague. Immediate start. Experienced support staff. Please send CV to james.turner@centrichealth.ie or call James on 087-258 2884.

Locum

Locum general dentist wanted to cover maternity leave in established family practice in Clontarf, Dublin 3. Two to three days per week from early December 2019 to end April 2020. Please send cover letter and CVs to clontarfdentalpractice189@gmail.com.

Specialist/limited practice

Vibrant multidisciplinary clinic seeks specialists to complement our growing team of orthodontists, periodontist and oral surgeon. First-class facilities and excellent scope for development of a top-class service. Attracting referrals from Wicklow, south Dublin and Wexford. CVs to paulmurphy@smilesolutions.ie.

Unique opportunity for a specialist oral surgeon to take over an established oral surgery list (two days per week) in a leading Dublin multidisciplinary practice. Please make contact for further details at hiringcontactemail@gmail.com.

Periodontist with implant experience required Carlow/Kilkenny region to replace departing colleague, one to two days monthly. Multidisciplinary team including prosthodontist. CBCT available. Please send CV to bpm.gmedical@gmail.com.

Exciting opportunity for orthodontist in busy northeast town. New ortho suite coming to four-dentist practice. CV to mbcar06@gmail.com.

Orthodontist required part-time for busy multi-surgery Cork city practice. Applications to corkdentalassociate@gmail.com.

Fancy a break from routine dentistry and work part-time in a friendly, modern progressive Dublin orthodontic practice? CV to dentistasorthoassistantdublin@gmail.com.

Dental nurses/managers/receptionists

Full-time dental nurse/receptionist position in Dermot Kavanagh Orthodontics, Dublin 18. Orthodontic experience not essential. Please email your CV to dermot_kavanagh@eircom.net.

Practice manager required for a large 12-surgery practice in Blackrock, managing a team of 30 staff and 12 dentists. Experience in managing large teams essential. Email victoria@seapointclinic.ie.

Full-time dental nurse position in north County Dublin – maternity leave cover (starting September 2019). Perfect opportunity to gain experience in a busy, friendly specialist orthodontic practice. Please email CV to info@swordsortho.com.

Dublin. Dental nurse: enthusiastic, empathetic, efficient individual to join our friendly team. Fully private dental surgery in north Dublin. Reception experience an advantage. Computer proficient/team player a must. Good remuneration for suitable candidate. Forward CV to nial@innovatedental.com.

Full-time dental nurse position in Dublin 4 for an enthusiastic individual to join our friendly team. Forward CV to drelizabeth@drelizabethmelvin.ie.

Experienced and enthusiastic dental nurse wanted to join our friendly team in a modern, computerised practice in Gorey, Co. Wexford. Position is a full-time permanent role to include some Saturday mornings and one late evening per week. CVs to eleanor@ocdental.ie.

Boutique practice in D2 looking for a dental surgery assistant, positive, friendly and flexible, to join our team. Experience optional, a good attitude essential! CVs to anneslanedental@gmail.com.

Part-time dental nurse needed to join our team in Dunboyne; chair-side assistance required; immediate start. Email CV to dublinmeath@gmail.com.

Qualified dental surgery assistant required for fully digital private dental practice in Galway. Position suits newly qualified DSA. CV and cover letter by email to info@roscamdental.ie.

Full-time or part-time dental nurse position available in modern, friendly, private dental clinic, Limerick. Good remuneration. Reply with CV to dsalimerick@gmail.com.

Experienced dental receptionist required for a fast-paced, modern dental clinic in Cork City. Ideal candidate would be outgoing, professional, and keen to progress. Email dentalpracticecork@gmail.com.

Modern general dental practice in Dun Laoghaire requires dental nurse. Experience preferable but not essential. Must be able to work evenings and Saturdays an advantage. Please reply with CV to killanedental@gmail.com.

Dental nurse required for busy Galway dental practice. Fully computerised. CV to devonparkdental@hotmail.com.

Experienced dental nurse required, immediate start. Tuesdays and Thursdays with occasional Saturdays. May lead to full-time position. State-of-the-art equipment, wonderful team and includes working alongside specialist implantologist and prosthodontist. Excellent work conditions and remuneration. Email ratoathdental@gmail.com.

Ormond Orthodontics – qualified dental nurse required for our Kilkenny/Thurles orthodontic practice. We are seeking a warm, friendly person with good communication and computer skills. Email application to reception@kylemoreclinic.ie.

Experienced, full-time dental nurse required for our expanding multidisciplinary team in Dublin 18. Positive attitude, friendly, team player with fluent spoken and written English essential. Email admin@cdpractice.com. Full-time or part-time dental nurse position available in modern, friendly, private dental clinic in Dooradoyle, Limerick. Good remuneration. Reply with CV to wallacedentalclinic@gmail.com.

Fully computerised, busy Midlands practice requires full-time, fully qualified dental nurse for immediate start. Please apply with CV to petra.polonkai@carlowdentalcentre.ie.

Specialist orthodontic practice in Tullamore seeking a hard working, flexible and enthusiastic dental nurse to join a vibrant team. The ideal candidate will excel in providing professional patient care. Knowledge of industry-relevant software and computer literacy essential. Applications to info@acebraces.ie.

Part-time dental nurse (one to two days per week) required for a busy, modern, computerised, award-winning dental practice located in Co. Meath. We are looking for a highly motivated individual to join our experienced team. Contact dentaljobireland1@gmail.com.

Dental nurse required to join the team in busy, five-chair dental practice in Claregalway. Full-time five days per week. Ideal candidate will have dental nursing experience and/or qualification. Experience using Exact software would be an advantage. CVs to joan.quinn@dentalcareireland.ie.

Renmore Dental is expanding its team and has a full-time vacancy for a highly motivated, enthusiastic dental nurse who would like to join our new state-of-the-art dental practice in Galway City. Dental experience necessary. Applications to aoife@renmoredental.ie.

Hygienists

Dental hygienist sought for busy Midlands clinic on a full-time basis. Fully computerised, modern practice with weekend hours required. Exciting opportunity for applicants, including fresh graduates. Please apply with CV to petra.polankai@carlowdentalcentre.ie.

Full-/part-time hygienist required to join our team in busy, modern Galway practice. CVs to devonparkdental@hotmail.com.

Hygienist required, immediate start, for one to two days per week, hours negotiable. We are a modern, progressive and award-winning dental practice in north Cork. Please apply by email to info@nualacagneydental.ie.

Smiles Dental – exciting opportunity for enthusiastic hygienists to join our modern, well-equipped, well-established Smiles Dental practices in Dublin and Galway. Two to three days per week. Candidates must be IDC registered. CVs to joanne.bonfield@smiles.co.uk.

Unique opportunity for a dental hygienist to take over an established referral base in a leading state-of-the-art Dublin-based multidisciplinary practice. Please make contact for further details at hiringcontactemail@gmail.com.

Experienced, flexible and enthusiastic dental hygienist required to fill well-established hygienist position. Great patients and excellent support staff in a modern, computerised family practice in Westmeath. Send cover letter and CV to info@kinnegaddental.ie.

Hygienist required to cover maternity leave in Limerick city centre practice. Immediate start, part-time or full-time. CVs to odowdritam@gmail.com.

We are seeking a hygienist (three days) to join our existing hygiene team here in Sligo. We are a fully private, hygiene-focused practice. To discuss the position in detail please contact Maurice FitzGerald, Tel: 071-914 3927, or email info@clearyfitzgeraldentalpractice.ie.

Part-time or full-time hygienist required for our practice in Monaghan town. Colm Smith Dental is a multidisciplinary practice with experienced dentists, specialist orthodontist and oral surgeon. This offers a great opportunity for applicants, including new graduates. Apply with CV to luciagsmith@gmail.com.

Enthusiastic, friendly part-time (one to two days) hygienist required for busy north Dublin practice, start mid November. CVs to annamodonovan@gmail.com.

Enthusiastic hygienist required for Tuesdays in busy modern Dublin 2 practice near St Stephen's Green. Opportunity to expand. Applications to bdental2@gmail.com.

Hygienist required three to four days per week to take over an established list in our busy Letterkenny practice. Email rachelmccafferty71@gmail.com.

Facial aesthetics

Part-time facial aesthetics injector wanted for busy clinic in Killarney. Must be botulinum toxin and dermal filler trained. CVs to info@eden-medical.ie.

Orthodontic therapy

The ideal candidate will be given the opportunity to apply for the Orthodontic Therapy Diploma in the DDH funded by employer. CVs to manager@ncdental.ie.

Orthodontic therapist opportunity in expanding specialist practice in Athlone. Full- or part-time position considered. Call 090-645 0615 in confidence or email CV to info@shannonsmiles.ie.

PRACTICES FOR SALE/TO LET

Modern surgery in prestigious medical centre available due to retirement. Also suits specialists. Rathcormac, Co. Cork. Private car parking. Rent free for three months. Enquiries to ahanna@eircom.net.

Limerick: Two surgeries, leasehold. Excellently equipped, computerised. Exceptionally busy, long-established, high footfall. Very strong new patient numbers. Low overheads. Good profits. Loyal, experienced staff/practice manager. Excellent potential for growth. Email niall@innovatedental.com.

EQUIPMENT FOR SALE

Tridac Varident 80 aspirator, including separator, for sale for €1,500. Purchased new from Morris Dental for €4,700 including VAT. Never fitted, unused. Contact 085-153 1259.

Dublin – equipment for sale. Durr compressor, Trophy intra-oral x-ray, steriliser plus printer, Cavitron, amalgamator, mobile suction, curing light, dental unit, chair plus light, endo system B, Thermo fill, x-ray developer. Full job lot €1,700 or nearest offer. Contact Niall@innovatedental.com.

Dentistry and Cantonese

Prof. Colman McGrath has spent two decades living and teaching dentistry in the bustling metropolis of Hong Kong.

How long have you been in Hong Kong and what prompted your move there?

This year marks 20 years. In many ways, it seems like yesterday that I arrived. I had been working at the Eastman Dental Institute and had just come back from Vietnam, when Prof. Edward Lo was doing a sabbatical at the Eastman and we got talking about Asia and opportunities. As it turned out, a position was opening up in Hong Kong and I thought, having already experienced working overseas, I'd like to try that again and explore more of Asia.

Were you prepared by your Irish education for work there?

The Irish dental schools have always been very innovative and outward looking, and that prepares one for work overseas. I was very much impressed and influenced by Prof. Martin Hobdell, who was involved in global oral health and primary care. He had an extensive network of collaborators across Africa and south-east Asia and through his recommendations, I got to visit and experience oral healthcare programmes in the regions. That really sparked my interest in dental public health and dentistry on a 'road less travelled'.

Could you tell me about your work in Hong Kong?

I work at the Faculty of Dentistry of the University of Hong Kong, which has received much acclaim in recent years as a leading dental institute globally. I am involved with everything from undergraduate and taught postgraduate to research postgraduate (PhDs), in addition to clinics and outreach programmes. In the undergraduate curriculum, I am involved in curriculum development and design, problem-based learning, cariology clinics and community health projects. We run a Master in Community Dentistry and I am involved with the Hong Kong College of Dental Surgeons for the

specialist training in community dentistry. We are a research-intensive faculty, so we train a lot of research postgraduates.

What are the main differences between the Irish and Hong Kong dental systems?

I think there are more similarities than differences. Hong Kong has a school-based dental care service offered to primary school children, akin to services provided by the HSE, but with dental therapists as key providers of care. For the adult population it's mostly private/independent practice but increasingly there are a number of corporate dental bodies. A very interesting initiative has been the introduction of an elderly healthcare voucher scheme subsidising oral healthcare. Given the growing older population, their increased susceptibility to oral disease and high levels of untreated oral disease, this is a welcome initiative.

What do you think are the benefits of working abroad? What are the challenges?

Working abroad has brought many, many benefits, not least the cultural experience and travel. It makes you become international in your outlook. It is amazing how quickly you develop a network across the region and it's always fun to catch up. Surprisingly, you get to have more time with friends and family as there is always someone passing through the region.

What involvement have you had over the years with the IDA?

I have always stayed connected with Ireland through involvement with the dental schools at TCD and UCC, so that has kept me very much up to date on developments of dentistry in Ireland and the IDA. In particular, I have been involved with the HSE Dental Surgeons' Group of the IDA and have attended and spoken at several of their conferences – always enjoyable and memorable experiences.

Colman is originally from Killaloe, Co. Clare, on the shores of Lough Derg, and loves going back there regularly. He has an eclectic list of hobbies, with interests in everything from boxing to painting. Most years he tries to do a marathon or half marathon, and right now he is training for a triathlon in Thailand.





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