IDA
irish dental association

JIDA

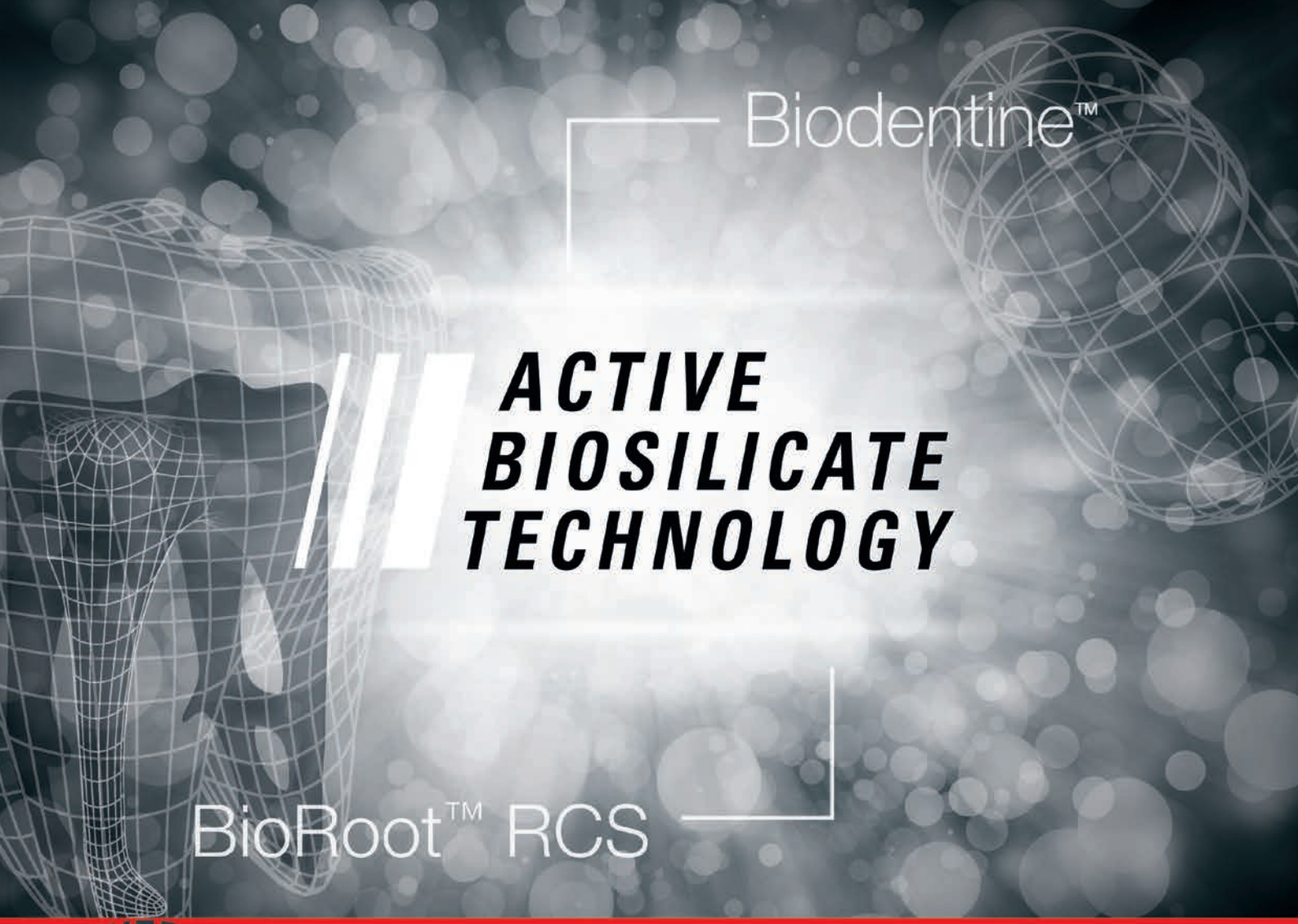
Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

Volume 67 Number 1
February/March 2021

DEEP DIVE

Management of the deep carious lesion: a literature review



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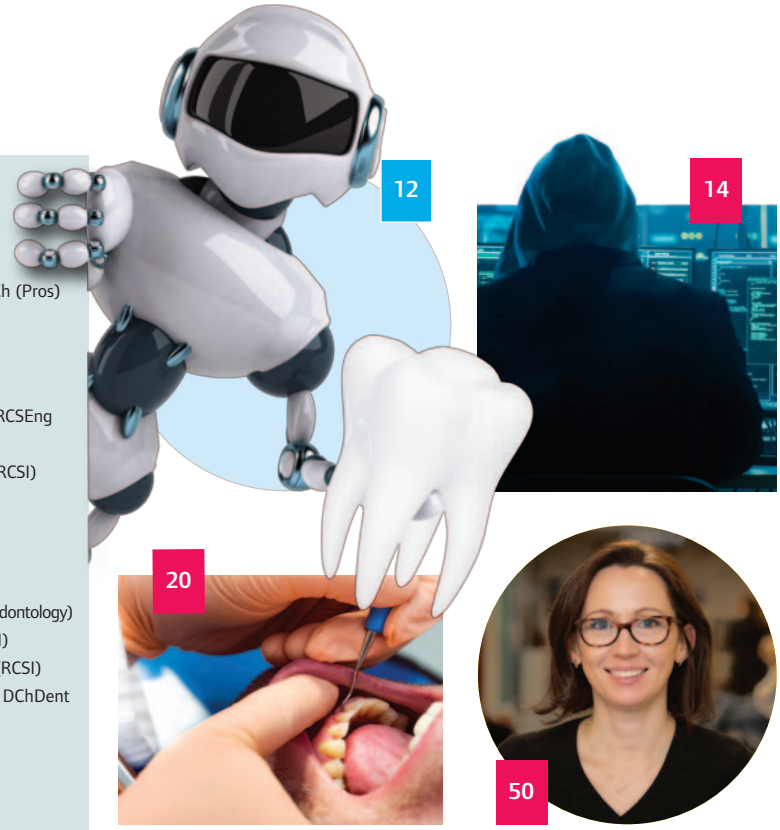

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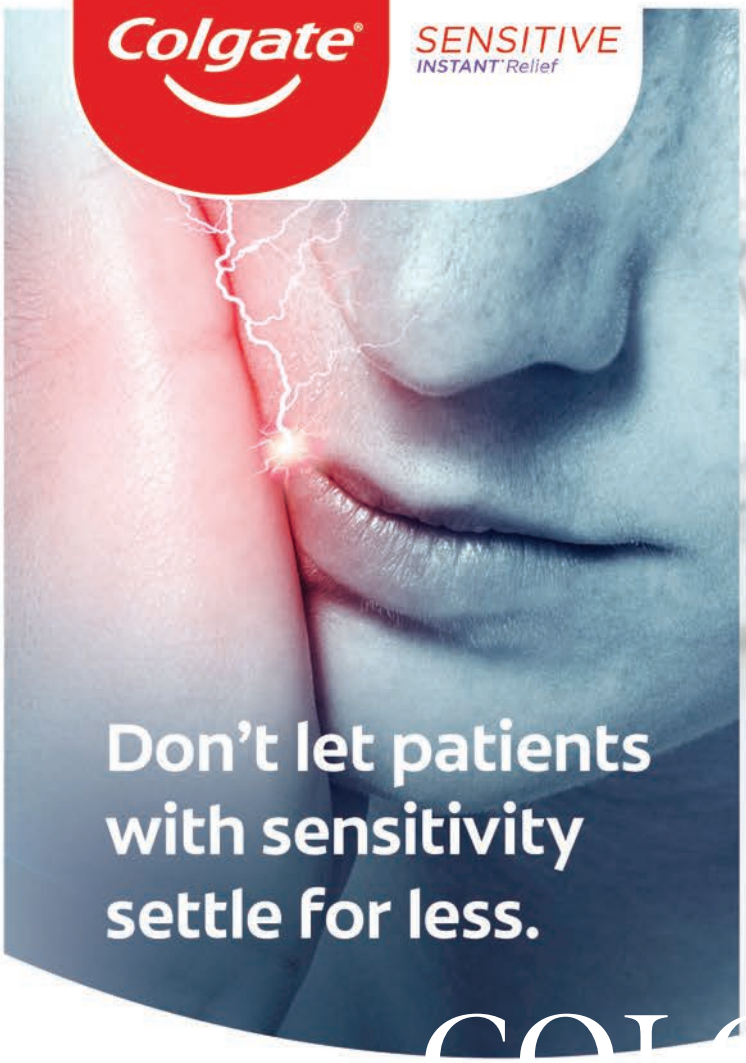

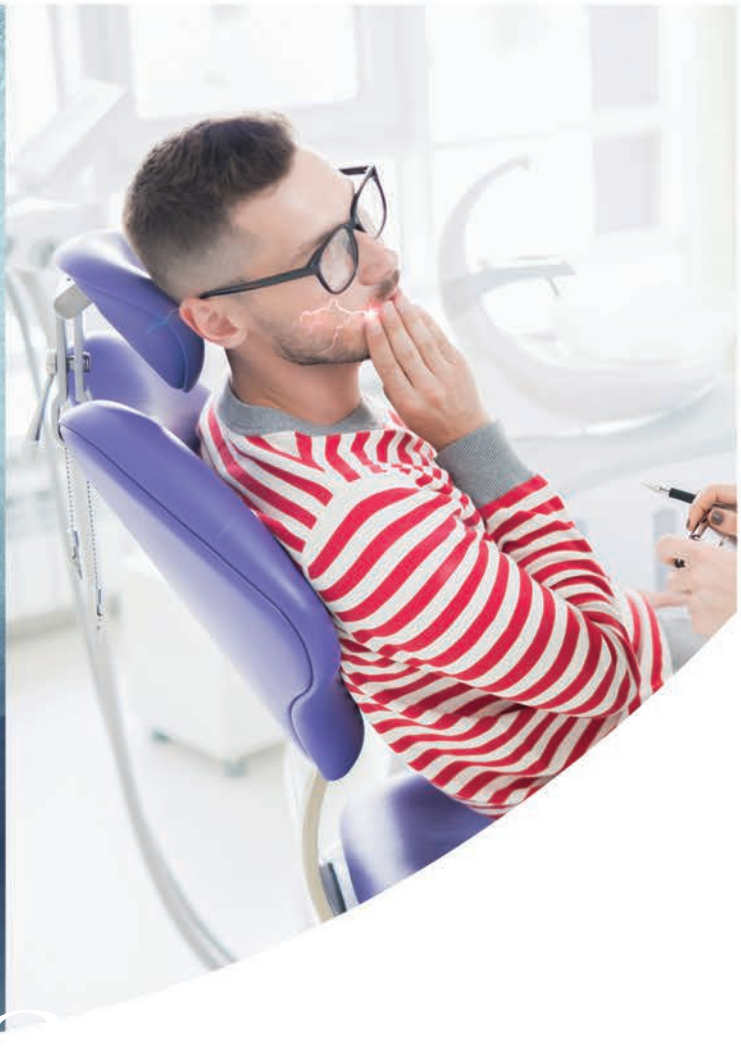

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References: 1. Nathoo S, Delgado E, Zhang YP, et al. Comparing the efficacy in providing instant relief of dentine hypersensitivity of a new toothpaste containing 8.0% arginine, calcium carbonate, and 1450 ppm fluoride relative to a benchmark desensitising toothpaste containing 2% potassium ion and 1450 ppm fluoride, and to a control toothpaste with 1450 ppm fluoride: a three-day clinical study in New Jersey, USA. *J Clin Dent.* 2009;20(Spec Iss):123 -130. **2.** Docimo R, Montesani L, Maturo P, et al. Comparing the Efficacy in Reducing Dentin Hypersensitivity of a New Toothpaste Containing 8.0% Arginine, Calcium Carbonate, and 1450 ppm Fluoride to a Commercial Sensitive Toothpaste Containing 2% Potassium Ion: An Eight-Week Clinical Study in Rome, Italy. *J Clin Dent.* 2009;20(Spec Iss):17- 22.

Dr Ciara Scott
Honorary Editor

Transition and transformation

As dental teams await the imminent roll-out of Covid-19 vaccinations, this edition looks at another threat to practice – cybercrime – and continues our updates on the 2017 periodontal classification.

The last 12 months have brought many unique and unexpected challenges and changes to our lives. Of course, life is full of changes, some natural and others unforeseen. I had never considered the difference between change and transition until I read a book by William Bridges, an author and researcher in organisational change.[1] Bridges defines change as situational, an event or a natural progression, but transition as the inner psychological process of reorientation and personal redefinition in response to these external events.

This transition happens through different phases that start with the ending of the old situation and support the shift in our mindset that allows us to incorporate change into our lives. Without transition, change is just a rearrangement or disruption; with transition, it can be transformational.

In response to the changing needs of the profession, this year's IDA Annual Conference, 'Online World, In-Person Dentist', will take advantage of a virtual format. In this issue we introduce some of the speakers from outside Ireland who will be Zooming in to present to us. We also share details of the upcoming Wednesday webinars, which have been very popular with IDA members.

In this virtual world, we are increasingly conscious of data security. I thank both of the dental practitioners for sharing their stories of cyber threats in our cybersecurity feature in this issue, and also thank Dr Mark Sanchez and Bill Holohan for sharing their expertise on the steps we can take to protect our practice data and manage a threat.

Education and leadership

In this issue, we publish the second article in a case series on the application of the new periodontal classification. While the classification changed in 2017, it takes us longer to start to think in terms of the newer classification and adapt to fully using it in practice. This series has been a collaborative effort of postgraduate students, specialists and consultants, and I thank Michael Nolan and his co-authors for this article. Consecutive years of dental students at TCD have voted for Peter Harrison as their best clinical teacher and I am delighted that he has brought this ability to educate to the *JIDA* in co-ordinating this series. Our educators support our continued professional development. I am very thankful to Prof. Anthony Roberts for sharing his clinical expertise on implementation tools for this classification and expect that our readers will find this practical guidance very useful in clinical practice.

Kirsten FitzGerald is also well known to many of us as an educator and I'm delighted that she has shared her professional journey with us in our 'My Profession' section, from completing her clinical specialist training to learning to lead her service within Children's Health Ireland through the HSE Leading Care Programme. Well-publicised conflict and controversy delayed the establishment of the CHI Hospital Group and construction of the new children's hospital. Dr FitzGerald has shared her thoughts on how a transformational approach by the dental profession can support the much-needed successful implementation of the oral health policy.

One area of innovation and research is in minimally invasive approaches to the preservation of pulpal vitality in deeper carious lesions. In our peer-reviewed article, Brenda Barrett and Michael O'Sullivan have reviewed the literature and share some evidence-based guidance on management of deep carious lesions.

Your input is welcome

We welcome letters to the editor, and thank Anne O'Connell, Anika Shah and Ella Holden for sharing their knowledge in this issue. Readers can also contact the *JIDA* if they would like to submit a quiz for a future issue or have ideas for features they would like to see in future editions.

I am delighted that we have been able to announce that the Colgate Caring Dentist of the Year Awards will return this year and look forward to sharing more details later in the year. The IDA has been a very strong advocate for Covid-19 vaccinations for dental teams. As we go to press, this roll-out is imminent and should offer a much-needed boost of protection to the profession. For anyone interested in an additional boost of positivity, the RCSI Centre for Positive Psychology and Health is offering a free 10-week programme on the Science of Health and Happiness[2] this spring.

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1. **Bridges, W.** *Transitions: Making Sense of Life's Changes*. Da Capo Lifelong Books, 2019.
2. Royal College of Surgeons in Ireland – Centre for Positive Psychology and Health - Royal College of Surgeons in Ireland (rcsi.com).

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Dr Anne O'Neill
IDA President

Dental care matters

As the focus now moves to vaccination, and the possible role of the dental profession, the IDA continues to advocate for its members.

One of the tasks of the President is to create a piece for the *Journal* called the President's news. In usual times, this would be filled with the highlights of meetings, both within the Association and with other organisations with whom we work closely – some of which would generate picture content for the *Journal*, which I usually flick through on my way to the many great articles. I would love to be contributing to such content but, alas, that is not the way of the world at the moment.

The problem in January 2021 as I commit pen to paper is that life has slowed. As one of my friends described it, the days are long and the weeks are short. We approach the anniversary of the first case of Covid-19 in Ireland. Little did we know at that point in time that we would be in yet another lockdown 12 months later. It may feel like we have achieved nothing in the past 12 months and yet there have been tremendous leaps in some areas of science. Digital applications have enabled us to continue to undertake our daily tasks, albeit providing us with a much limited level of interaction.

Vaccination and frustration

The past weeks have been filled to the point of exhaustion with the topic of vaccinations – who should receive the vaccine first, will it work, who should deliver the vaccine, why is one group scheduled before another, why are dentists not listed as potential vaccinators? As the IDA continues to advocate on behalf of members of the profession on all issues vaccination, the level of anxiety within society in general and the profession is palpable.

From where I type, anxiety and distress are being fuelled by news articles highlighting the 10 non-patient-facing staff who received it in one location, not the 250+ others providing care in Covid-19 wards who received it that day. Who can blame the angry dentist when they read such news and wonder what is being done to ensure access for them? Who can blame the frustrated dentist when they receive the same news: no progress in discussions with the Department of Health on improved supports to dental practices.

While the perception may be that no one is supporting them or shouting loudly on their behalf, I am certain that any and all opportunities to advocate for early access on behalf of all members of the profession is being undertaken daily and persistently by the IDA. Some have suggested that we adopt a louder style of communications with the powers that be, but nothing is more certain than the fact that few messages will be heard over the constant noise that is Covid-19. While we should not be afraid of confrontation where appropriate, it is important that we persist with the difficult task of pressing the case for dentists in the endless circle of meetings with key decision makers, and preparing written submissions, with all the frustration that this can entail. At all times I believe that we must advocate on the basis of evidence and in a professional tone if we are to maintain our credibility as representatives of our members and our patients, and as committed professional dentists. We should insist on respect being shown to our members and representatives, and we should respect those with whom we engage.

The value of dentistry

One thing is certain in these unprecedented times: we may have the skill set to become vaccinators or testers to support the public health initiative, but where dentists are redeployed to other Covid-19-related tasks, it comes at a cost to patients. Few others in the entire healthcare system have the same skill set as a dentist. It is not simply the close proximity to the patient: dental care and interventions require a creative eye for the aesthetic, a surgical precision, and a depth of clinical knowledge that remains hidden to most patients. For some, dental attendance may well feel like visiting the hairdresser – in both cases the person who attends sits in a chair, and they leave feeling better. But there the similarities end. The services we provide may not be critical to the Covid-19 patient in hospital, but they are nonetheless essential to the health of patients in all walks of life and all age ranges. Dental care and the ability of dentists to provide that care matters. And the IDA continues to represent that message to our members, our patients and the healthcare system.

Dear Editor

We recently attended an informative webinar organised by the British Society of Paediatric Dentistry (BSPD) on Covid-19 in children and the hyper-inflammatory response. It was delivered by Dr Julia Kenny, Consultant in Paediatric Infectious Diseases and Immunology at Evelina London Children's Hospital (ELCH). Although the majority of children with Covid-19 exhibit mild symptoms or are asymptomatic, recent evidence has been published regarding a Covid-19-associated syndrome in children.

Over a six-week period during the initial wave of the pandemic, a small influx of patients were admitted to the paediatric intensive care unit at ELCH. These patients presented with a history of fever and many suffered gastrointestinal symptoms such as diarrhoea, vomiting and abdominal pain, and shared common features with Kawasaki disease. The patients had high inflammatory markers and multisystem involvement including cardiac, renal and neurological manifestations. Microbiological investigation of these patients did not reveal any pathogenic cause. There was a mixture of positive and negative results to SARS-CoV-2 PCR testing in these patients; however, a significant proportion were positive for IgG antibodies against SARS-CoV-2. The atypical presentation of these patients prompted multiple consultations with international bodies. The condition was later termed paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 (PIMS-TS).

It has been reported that some children with PIMS-TS also presented with oral manifestations such as mucositis, swelling of the lips, cracked lips and oral ulceration. Although the exact link between PIMS-TS and oral characteristics has not been determined, we feel that it is important for dental care professionals to be aware of this evolving condition, as it is possible that children may present to dental appointments with similar oral manifestations and symptoms. Guidance has been published by The Royal College of Paediatrics and Child Health[1] regarding the presentation and management of these patients. Although this is not directly aimed at dentists, we feel it is useful to be aware of it, should further management be required of a potential dental patient.

Yours faithfully

A. Shah, E. Holden

Guy's and St Thomas' NHS Foundation Trust, London

Reference

1. Royal College of Paediatrics and Child Health. Guidance: Paediatric multisystem inflammatory syndrome temporally associated with COVID-19. 2020. Available from: https://www.rcpch.ac.uk/sites/default/files/2020-05/COVID-19-Paediatric-multisystem-%20inflammatory%20syndrome-20200501.pdf.

Dear Editor,

Traumatic dental injuries are a common occurrence and early, appropriate management significantly improves the chance of a successful outcome. I was encouraged to see that the quiz in the last edition of the *Journal of the Irish Dental Association* (Vol. 66 (6): 271) featured questions on a dental injury of a young child. While the management for this case was correct, it is important to point out that the reference used was out of date. The International Association of Dental Traumatology (IADT) updated the guidelines in 2020 with changes in the management of specific injuries with the supporting evidence. The IADT provides free access to the 2020 Guidelines for the benefit of practitioners around the globe and an improved quality of life for patients (www.iadt-dentaltraumatology.org). I would encourage all dental practitioners to review the new guidelines and be prepared for dental emergencies when they arise in practice. Dentists can help to prevent dental injuries by advocating safe practices and promoting the wearing of mouthguards for sports. Interested practitioners should join the IADT to keep informed of developments in materials and management for traumatic dental injuries in all ages.

Yours Faithfully

Anne O'Connell

President, International Association of Dental Traumatology

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Webinars/CPD

IDA webinars will continue on Wednesday evenings, unless otherwise advertised, at 8.00pm.

All webinars (except for those indicated) are available for members to view at any time on the members' section of www.dentist.ie.

Thank you to GSK for sponsoring the current series of webinars.

While we wait to hear if any further restrictions are announced after March, the IDA hopes to resume face-to-face hands-on training, and in particular BLS/medical emergency courses, later in the year.

Dr Gregg Barry.

Dr Daniel Collins.

Dr Neysan Chah.

Derek Dunne.

MEMBERS ONLY

UPCOMING WEBINARS

1. **Dental Photography: Getting Started, Getting Better** — *Dr Stephen Murray*
2. **Digital Tools for Daily Practice** — *Drs Gregg Barry and Daniel Collins*
3. **Facial Pain** — *Dr Neysan Chah*
4. **Brexit and Dentistry** — *Derek Dunne, Manifests*

Colgate Caring Dentist of the Year Awards 2021

And they are back! The IDA, in association with our sponsors Colgate, are delighted to welcome back the Caring Dentist of the Year Awards for 2021.

An awards ceremony is due to take place in the later part of 2021, in accordance with HSE guidance regarding Covid-19.

Dental teams all across the country will be ready to party and enjoy all their achievements by December, and we hope that we can celebrate in style at a gala awards ceremony in Dublin. Date to be confirmed.

Here's hoping we can have a wonderful celebration later this year.

The Dr Aiden Meade Annual Award

The Dr Aiden Meade Annual Award is a new annual award, which is aimed at raising awareness of the Practitioner Health Matters Programme (PHMP). The PHMP provides a specialised, confidential service to doctors, dentists and pharmacists. This Programme acknowledges that practitioners can often find it difficult to access appropriate medical help, particularly if they are experiencing issues with mental health or substance use.

The award is named in honour of Dr Aiden Meade, who was one of the founding members of a previous scheme of support, the Sick Doctor Trust, which he chaired for many years.

Eligibility: The award is open to all registered members of the dental, pharmacy or medical professions, and to all full-time students of medicine, dentistry and pharmacy, in the Republic of Ireland.

Format: Submissions must be in any of the following formats:

- traditional essay, delivered in a reflective or narrative style;
- scientific format, which may be a literature review or an audit; and,
- a piece of non-sponsored original research.

The subject matter of the submission must relate to the topic of practitioner health and well-being, must have a minimum of 1,000 words but should not exceed 2,000 words, and must be in PDF format. Submissions may be made to: confidential@practitionerhealth.ie, or posted to Practitioner Health Matters, 41 Main St, Blackrock, Co. Dublin. Please mark the envelope 'AM Award'.

Judging: Adjudication will be by an independent panel made up of representatives from the three professions in conjunction with representatives of the Board of Trustees of the PHMP. Marks will be awarded for overall presentation, structure, strength of argument, completeness of supporting literature, conclusions, and relevance to the topic of practitioner health and well-being. The decision of the adjudicating panel will be final.

Award: In the case of an undergraduate winner, a cash prize of €400 will be awarded. In the case of a postgraduate winner, a commemorative medal will be awarded.

The winning submission may be published in any of the journals of the relevant representative and professional bodies, and may also be published on the PHMP website. The PHMP will be permitted to refer to and quote from the work in any of its publications, publicity or presentations. The winning author must be prepared to present at the launch of the PHMP Annual Report if requested. Closing date for submissions: September 30, 2021.

Survey on healthcare workplaces

Members are invited to complete a survey from Dublin City University (DCU) investigating the work-related experiences of dental healthcare professionals in the private and public sectors. The survey is part of a research project investigating the work-related experiences of healthcare professionals, and will contribute to informing evidence-based programmes aimed at building a better working environment. This research study is being conducted by Dr Angela Mazzone and Prof. James O'Higgins Norman of the National Anti-Bullying Research and Resource Centre (ABC) at DCU. If you have any questions regarding the survey, you can contact antibullying.project@dcu.ie. Responses are non-identifiable and data will be anonymised and aggregated with data from other participants. The survey results will be used for writing papers for publication in scientific journals, and for presenting research study findings at academic conferences. For more information and to complete the survey, go to: https://login.eu.poppulo-app.com/login/jwt-login/login.do#cm_link_8073113?a=6&p=53440952&t=22322595.

Mars Wrigley grants 2021

There was great disappointment that our 2020 Mars/Wrigley Grant programme could not go ahead due to Covid-19. However, the IDA is delighted to announce that the programme, originally set out for 2020, has now been extended into 2021.

Applications are now open for the 2021 grants, and a full application form is available to download on www.dentist.ie.

The following grants are available:

- 1 x €13,500
- 3 x €2,800
- 2 x €1,000

There will be grants available for 2021.

Applications are accepted from any IDA member and any Irish Dental Hygienist's Association (IDHA) member* (*must be working in a practice of an IDA member). Applications are welcome from individuals or dental teams.

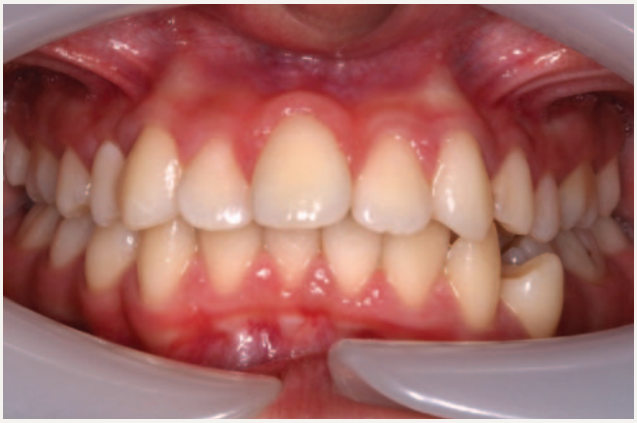
Quiz

Submitted by Dr Brian Dunne.

Questions

1. Describe the salient clinical features in the photograph.
2. What are the differential diagnoses? How can you distinguish between them clinically?
3. What syndrome may be associated with this clinical scenario?
4. What severe disorder may this syndrome be associated with?
5. How should this patient be managed?

Answers on page 44.



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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-formation 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 thiazide 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:** October 2019. 2019/ADV/EAS/117H.

CLONMEL HEALTHCARE

Not another Zoom call

The IDA Annual Conference goes virtual for 2021 and will be a professional, expert-led, educational event.

The IDA Annual Conference 2021, 'Online World: In-Person Dentist', will be held on Friday and Saturday, April 16 and 17, on a unique conference management platform. The online nature of the event has allowed the IDA to secure a top-class roster of 30 international speakers. Some of the topics they will be discussing include:

- vaping, tobacco and dental health;
- facial aesthetics;
- aesthetic management of incisor opacities in children; and,
- the politics and economics of dental care – why it matters.

The Annual Conference has always provided dentists with a social outlet and it would be remiss of the IDA if this wasn't provided for in our online conference. On the Friday evening, there will be an intriguing event that all delegates, trade show members and presenters can enjoy over a virtual glass of wine. The next morning, a yoga session will be held before the presentations start.

It also wouldn't be a proper Conference without the dental trade, and there will be a fully interactive trade show, where delegates can chat to exhibitors and visit their 'stands'.

Colm Quinn
Journalist with Think Media

The *JIDA* spoke to three of this year's speakers to get a flavour of just some of what you can expect to find at the Conference.

Sascha Hein

Sascha is a dental technician and researcher who owns Emulation S.Hein in Freiburg, Germany. His main research interest lies in the radiative transfer through dental hard tissues and dental materials – a field often loosely referred to as "optical properties". When there isn't a global pandemic, Sascha lectures widely, focusing on improving shade communication between the dental surgery and the dental lab. He says he's very appreciative of the opportunity to present to the Irish Dental Association and would like to thank Dr Maurice Fitzgerald for thinking of him.

What will you be speaking about at the IDA Annual Conference?

My presentation bears the insidious title 'A new scientific approach to unlock the secrets of shade matching without shade guides'.

What do you hope practitioners will take from your presentation?

Above all, that successful shade matching is the consequence of objective communication, that dental practitioners have to work with their dental labs rather than against them, in order to provide the highest standard for our patients and, last but not least, for ourselves.

How has the pandemic affected dentistry?

The pandemic has confronted us with numerous challenges but it also provided us with the opportunity to push on with our research and to come up with new and innovative solutions.

Dr Helen Rodd

Helen is Professor and Honorary Consultant in Paediatric Dentistry at Sheffield University. She has a keen interest in child-centred oral health research, and is part of a vibrant multidisciplinary research group, called CREATE. Through a variety of qualitative and quantitative approaches, CREATE's research has sought to engage children more meaningfully, so that Helen and the other researchers can better understand how different dental conditions, and associated treatments, may impact on them.

What will you be speaking about at the IDA Annual Conference?

I am really pleased that the IDA has given me the opportunity to talk about my favourite clinical and research interest – the management of enamel defects in young patients. I hope to also highlight the psychosocial impacts some children can experience as a result of having teeth that look and feel different to other children's teeth.

What do you hope practitioners will take from your presentation?

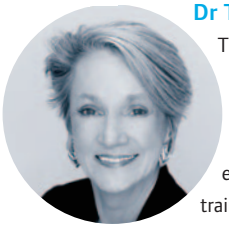
Enamel defects are common and can present in so many different ways. It is sometimes challenging to reach a diagnosis and provide treatment that will address the concerns that the child (and their parents) may have. I hope my presentation will provide practitioners with some practical advice about taking

a detailed history and examining this patient group, so they feel more confident in making a diagnosis.

I also hope to update clinicians about some minimal but effective treatment options for children who have anterior enamel opacities that are of cosmetic concern.

How has the pandemic affected dentistry?

On a positive note, wearing masks has become so normal in society, that young children don't seem at all bothered by all our PPE, which I had thought might be daunting for them. Working in a teaching hospital, I see the huge impact on undergraduate teaching and experience. We are also seeing far fewer paediatric patients in the clinic.



Dr Theresa Gonzales

Theresa is currently Executive Director of the American College of Dentists. In 2013, she retired from the United States Army Dental Corps after a long career in military service as a clinician, educator and commander of troops. She is classically trained as an oral and maxillofacial pathologist and orofacial pain manager.

What will you be speaking about at the IDA Annual Conference?

Physical examination of the head and neck, as well as emerging trends in the diagnosis and management of chronic orofacial pain.

What do you hope practitioners will take from your presentation?

Chronic orofacial pain management – a better appreciation of the fact that chronic orofacial pain (COFP) is relatively common, with approximately 7% of the general population reporting such symptoms, which concomitantly occur with other somatic symptoms that cannot be adequately explained by known organic pathology.

Physical examination of the head and neck – diagnosis is the key to patient care, and no therapeutic skill can compensate for an inability to adequately assess and evaluate a patient. A system, therefore, must be developed and rigorously deployed in both the history taking and clinical examination to minimise the possibility of missing the underlying pathologic condition.

How has the pandemic affected dentistry?

Patients have become more actively engaged in identifying signs and symptoms of disease. They demonstrate better self-clinical surveillance. Patients are more concerned about the preventive aspects of disease and are increasingly committed to prevention and risk mitigation strategies.

The cyber threat

A cyber attack can be catastrophic for a dental practice. This type of crime is growing and it's important that dentists know how to protect themselves.

Ransomware is a type of software used by cyber criminals to lock you out of your computers and servers. These criminals then demand a large amount of money to unlock your data. Many people do pay these ransoms, although there is no guarantee that you will get all or even some of your data back. Here we look at two cases of attacks on dental practices in Ireland and ask what dentists can do to protect themselves.

Case 1

One morning in 2013, Dr Patricia Shalloe from Cork came into her practice and found she couldn't get onto her computers: "We contacted our IT consultants and they quickly figured out that we had been attacked with ransomware".

The attackers encrypted all her data, deleted her back-ups and asked for a ransom of €5,000, which she didn't pay. Patricia did have an off-site back-up from six months before the attack. As a periodontist, she also kept all her pocket charting, which allowed her to continue to work on patients: "I had to wing it. We didn't have an appointment book. We had nothing. We didn't know who was coming in from one hour to the next or how to prepare so as you can imagine, it was extremely stressful".

Dr Patricia Shalloe.

Because Patricia had IT support and back-ups, she felt she was on top of the situation. Her IT consultant informed her that SMEs are attacked regularly: "If you look at your server, it is under constant attack from people trying to hack into it. If you don't have something protecting you, you're going to get ransomware. It's not a question of if, it's a question of when".

Patricia had to report the incident to the Data Protection Commissioner (DPC), Dental Protection, the Dental Council and the Gardaí. However, there is no way of knowing where in the world these attackers are based.

For about a week, we had people walking into the surgery. We didn't know who they were, what they were here for. It was a nightmare.

Even if your practice is not fully computerised, nearly all practices will have some kind of computer, even if it is just for accounts or email, and Patricia says: "If you have a computer, it doesn't matter what you keep on it, if it's anything to do with your work, you need to have a plan".

Ransomware attacks are not easily preventable because it takes money and time to get the appropriate IT in place, but it is worth doing. Patricia says the most important thing for dentists is to have a back-up plan, and have off-site

and cloud-based back-ups. You should have anti-ransomware software wherever you keep data. It's important to have good anti-viral software and firewalls. Good staff training and good computer hygiene are also very important. Staff should know when to open emails and if anything looks suspicious, not to open it. The dentist should have final say and staff should know if that they're unsure about something, they should not open an email or click on a link unless they speak to the dentist first. She also believes you need to have someone to advise you because although you may think you're good with a computer, dentists aren't in the cybersecurity business.

Patricia has given two talks on this subject in Ireland and says one of the reasons she did those was to help other people to avoid this experience, because it was awful: "It was a devastating event in my career. It took a year, at least a year, to recover. It was a hugely stressful time for me, probably one of the most stressful in my career, far more stressful than any clinical episode".

Case 2

For another dentist, who wished to remain anonymous because he is still dealing with the fallout of a recent attack, cyber criminals got access to the practice's server through a weakness in the firewall. One employee who works in administration was working from home and had remote access to the server, and there was a weakness in this remote access.

Again, the hackers got into the practice's system and encrypted all the data. The dentist explains that when they arrived in work the next day, they could get into their computers but they couldn't access their practice management software. They rang their IT consultant, who told them they'd had a cyber attack. The criminals were demanding $100,000 in bitcoin to unencrypt the data.

Again, the Gardaí, Dental Protection and the DPC were notified. The Gardaí took a statement and passed it to the National Cyber Crime Bureau in Harcourt Street. An investigation was carried out but whoever was behind the attack was never brought to justice, although it was discovered that the person was in Russia.

The Gardaí informed the dentist that this type of crime has increased significantly since the start of the Covid-19 pandemic. With more people online, there is more opportunity, and probably less chance to engage in 'normal' criminality.

The practice had two back-ups. The attackers had encrypted one of these as well, but there was another cloud-based one, which had a lot of data but not everything. The dentist says they lost three or four years of clinical notes and x-rays.

There was huge disruption, he says: "For about a week, we had people walking into the surgery. We didn't know who they were, what they were here for. It was a nightmare".

They were able to painstakingly scan in some data, which they had on file in other places. The practice also had a separate server for CBCT scans. Unfortunately, this worked off the main system, so the computer didn't know where to put these scans because the main database was gone. Patients had to be notified and the dentist is still in the process of doing this.

The dentist says that Dental Protection were very helpful. His advice to the IDA is to get the word out to members about the risk of these attacks. He says that he did not realise that he was so vulnerable: "If I had only known I was so


Bill Holohan, solicitor with Holohan Law.

vulnerable, I would have had five or six back-ups… I would say to any other practitioner: get your IT guy to show you how they're going to retrieve the data. Don't trust anyone. Go down to your server and say: 'Re-establish me'".

The dentist says that if the criminals had asked for an amount around €20,000, he probably would have paid it and that it has cost him more than that to restore the data and notify all the patients. He emphasises good IT advice and recommends having at least four back-ups, with one off site. Data insurance is also available and he advises dentists to get this.

He thinks that dental practices are extremely vulnerable to this type of attack: "I just did not know how vulnerable I was. I did not know how much hassle it is. It costs an awful lot of money".

One positive he says is that patients have been extremely understanding: "They've been way more understanding than I thought they would be. When you explain to them that their data isn't there and that you might need to take a new x-ray, they're fine about it".

Expert advice

If you are subject to an attack, you must notify the DPC within 72 hours. You should also contact the Gardaí, your indemnity provider and the Dental Council.

Bill Holohan is a solicitor with Holohan Law and previously gave a presentation to the IDA Munster Branch on this subject. He explains: "When someone collects and uses/processes personal data, they have a legal duty of care to protect it. There are also strict limitations to how the data can be used, and companies must make it clear to the person whose data has been retained how the data will be used at the point it is collected, and they must give express permission for those purposes".

Bill says all businesses should carry out a cyber risk assessment and has six tips for ensuring good cyber security:

1. Install a good firewall system.
2. Back up your data.
3. Keep your network up to date.
4. Create an acceptable user policy.
5. Insist on strong passwords.
6. Make sure that you have appropriate insurance cover in place to cover cyber attacks.

Dr Mark Sanchez, orthodontist and founder of orthodontic practice management system, tops Software, recently spoke to the Irish Orthodontic Society on this subject. He says there are two main weaknesses that small businesses experience in their network security: poor password management; and, lack of training and understanding of phishing (when someone tries to gain access to your system through email or SMS by posing as someone you know or as a legitimate organisation).

Mark explains that the main problems with passwords are that people use


Dr Mark Sanchez, orthodontist and founder of orthodontic practice management system, tops Software.

passwords that are: too short; single words; used across multiple accounts; shared with others; sent via SMS or email; and, have been hacked previously and now populate widely circulated lists of known passwords. Mark says: "The only way to manage this properly is to use a password management tool like 1Password and/or use a practice management system that has single sign-on built in, as tops Platform One does".

When it comes to training staff on phishing, Mark says that all staff need to learn and exercise good email hygiene. His advice is to never click on a link in an email or an SMS message: "If you think you really do need to click on that link, know how to verify that the link is okay. Know the signs that give away almost every phishing attack".

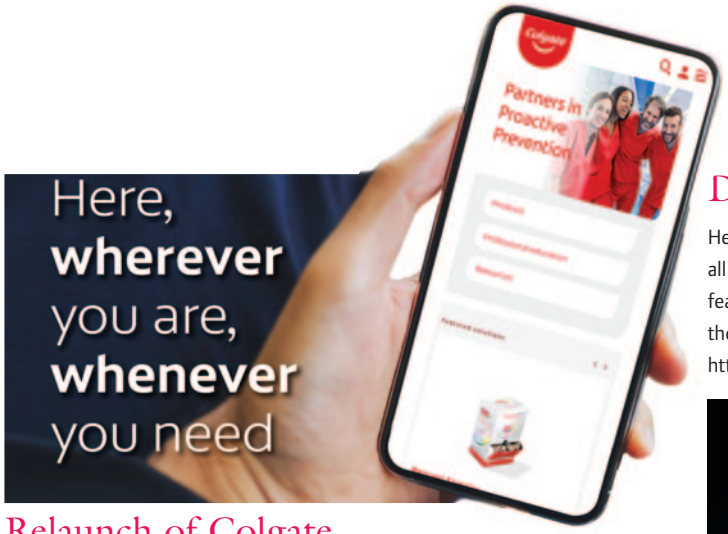
Without question, our practices are prime targets. We aren't experts in the area of cybersecurity, but we tend to manage our networks ourselves or with the help of someone local.

Mark says dental practices need to protect themselves: "Without question, our practices are prime targets. We aren't experts in the area of cybersecurity, but we tend to manage our networks ourselves or with the help of someone local. While some have the knowledge and skill, many are self-educated on these topics and don't pursue study with the passion needed. If your network tech is your brother-in-law's cousin, you're likely at risk".

Bill agrees that dental practices are at risk and says: "Carry out a risk assessment, and if you don't know where to start, then you need to contact a good IT support service provider who can do that, and install a firewall and antivirus software immediately. Dental practices are especially at risk since healthcare information, such as patient addresses and social security numbers, is worth up to 10 times more than credit card data on the black market. An example was the Wannacry virus attack on the NHS a couple of years ago. Yet few practices have even the basic level of security in place to ensure there are no holes in the net".

Mark recommends this resource from the US National Institute of Standards and Technology, which has good advice on protecting your business: https://www.nist.gov/itl/smallbusinesscyber.

Using a dental analogy, Mark compares cybersecurity to flossing: "It's actually quite easy to do once you've been shown how, and it's even easier not to do. Take a small amount of time to arm yourself with knowledge, and then just use simple discipline to never skip the easy steps of good cybersecurity hygiene".



Relaunch of Colgate Professional website

Colgate states that more than ever, you need easy access to current and relevant oral care information and resources to support prevention and treatment across all your patient groups. According to the company, visit the relaunched www.colgateprofessional.ie wherever you are, and whenever you need, to access quality professional and patient information including:

- latest product information;
- professional education; and,
- new professional and patient resources.

Dentology online

Henry Schein's Dentology was an online event that the company states covered all aspects of digital dentistry. The event took place on January 29 and 30 and featured 14 international speakers from nine countries. Dentists who missed the event can view all presentations on demand from now until February 27 at: https://www.dentology.world/.

Irish Dental Brokers launches

Marguerite Morgan, founder of Irish Dental Jobs, a dental recruitment agency, has announced the launch of Irish Dental Brokers, which will be involved in the buying and selling of dental practices on a nationwide basis.

Composites from Coltene

Jon Portner of Portner Pittack Dental Practice, London

Dentists are reporting more cases of stress-related bruxism. According to Coltene, for conservative, efficient and upgraded restorative treatment, select composite materials from its range. The company's selection includes Brilliant EverGlow, which it states is a universal submicron hybrid composite that is easy to handle and offers enduring gloss for both single and multi-shade layered restorations.

Coltene also supplies Brilliant Componeer, which it states comprises prefabricated, easy-to-process, thin enamel shells that can be used for restoring anterior teeth chairside.

The company also provides impression materials and Jon Portner of Portner Pittack Dental Practice in London uses them and states: "For accurate crown and bridge work, Affinis and President offer choices – different washes, working and setting times and consistencies. Different colours too, which I am able to mix and match. Affinis Precious materials, in gold and silver, have a variable working time, for example. The materials are predictable and easy to handle, and my dental nurse Jadeen loves working with them too!"

Dental Compliance celebrates third anniversary

Dental Compliance Ltd celebrates three years in business in 2021. Dr Jane Renehan, left, of the company believes that practice compliance is a series of simple quality checks built into daily tasks. Working with dentists, she said: "I see first-hand that no two dental practices are the same. My advice is therefore customised to each practice".

According to Jane, dentists who commit to compliance as part of their daily routine have better-trained dental teams, more efficient use of resources, fewer equipment breakdowns, and improved patient engagement.

According to Dental Compliance, other benefits of working with the company include peace of mind and reduced risk to professional reputation, along with increased patient trust and satisfaction.

Dental Compliance Ltd currently offers its consultancy services online, including advisory programmes, mandated training for dentists, and education sessions for dental staff.

Dentsply Sirona acquires Datum Dental

Dentsply Sirona has completed its acquisition of Datum Dental, which it states has a strong OSSIX biomaterial portfolio. Datum Dental is an Israeli-based company, which Dentsply Sirona states is known for its innovative dental regeneration products, such as the proprietary technology GLYMATRIX. According to Dentsply Sirona, Datum Dental complements its existing implant dentistry strategy around Ankylos, the Astra Tech Implant System, Xive and Atlantis. Dentsply Sirona also believes that Datum Dental has a strong R&D pipeline, with many promising products with differentiated value propositions.

Gene Dorff, Group Vice President, Implants Product Group of Dentsply Sirona, said: "Datum Dental perfectly fits in our strategy to deliver innovative and meaningful solutions for our customers. The biomaterial sector is an important cornerstone of the future of dentistry. The acquisition is another important step for us to deliver on our purpose to empower dental professionals to provide patients with better dental care and make people smile".

Renew and upgrade from Quintess and Quoris3D

Quintess Denta states that it has decades of experience, expertise and excellence in handpiece repair and maintenance. According to Quintess Denta, it is more than a repair or sales company; it is an integral part of your practice.

The company states that it guarantees high-quality services and competitive prices. According to the company, its restoration centre covers repairs to most popular handpiece brands, with expertise in fixing electric and air turbines, as well as scalers.

Quintess also offers Neodent implants, which it states offer an ability to maintain and preserve bone around the connection and give patients beautiful and lasting results. Also available from the company are Total Health Screens, which Quintess states offer dentists the ability to perform blood pressure tests and check blood glucose levels, blood cholesterol levels, BMI and waist-to-height ratios.

Sister company Quoris3D offers Chrome, which it states is a full-arch stackable guide technology, developed for dentists who desire a pre-planned, predictable, guided 'all-on-X' type of surgery.

According to Quoris3D, the Chrome service delivers anchored bite verification, anchored bone reduction, anchored site drilling, accurate anchored provisionalisation, and a method of transferring all surgical and restorative information for the final restorative conversion phase.

New appointment at Dental Protection

Leanne Keane is the new Business Relationship Manager with Dental Protection.

Dental Protection has announced that Leanne Keane has joined its expanding Ireland team as Business Relationship Manager. The indemnity provider states that Leanne possesses a wealth of experience in the Irish dental market, and is focused on supporting and maintaining business relationships with members across the country. As the first point of contact for conferences and events, Leanne is also key to communicating Dental Protection's expertise and membership benefits to students at Trinity and Cork dental schools. Leanne will be the key contact for all dental and hygienist members in Ireland. You can contact her at: leanne.keane@dentalprotection.org.

'One health' in one book

Dr Alastair Woods of Deansgrange Dental Clinic and his sister Dr Vanessa Woods, a scientist and consumer engagement professional, have launched a new book, which they say is aimed at engaging children, teachers and parents in the importance of oral disease prevention and health promotion. *Irish Food From A-Z* is a book of poems that tells the story of Irish farming, food culture and health. Vanessa says that the book enables some of the more difficult concepts to be grasped by students of a younger age, so that they have an introduction to the concepts of soil, plant, animal, dental, human and environmental health as key and interlinked components of the food value chain.

Irish Food from A-Z is available from www.vbwoodscommunications.com at a cost of €12 per book.

Periodontitis: implementation tools for daily practice

This article offers a practical approach for practitioners when classifying periodontitis following the publication of the 2017 Classification of Periodontal and Peri-Implant Diseases and Conditions.

Introduction and background

In 2017, a Joint European Federation of Periodontology (EFP) and American Academy of Periodontology (AAP) Workshop was held in Chicago to form a consensus on a new classification of periodontal diseases. Four working groups produced a consensus report, which was published in June 2018.[1] The main diagnostic cohorts are summarised in **Table 1**, and an overview of this scheme was previously published in this *Journal*.[2] While dental healthcare professionals are likely to be aware of the new classification, widespread integration into daily practice is expected to be a gradual process. This article looks at some pertinent considerations and suggests a simplified approach for implementation when classifying periodontitis cases.

Classification

Classification systems proffer significant utility to the clinical and scientific community:[3]

- they assist practitioners in categorising individual patients by clinical presentation – this can provide a guide by which practitioners can structure and implement treatment approaches for their patients;
- they provide a common terminology and interpretation for dental and other healthcare professionals to communicate about patients; and,
- they generate a framework for researchers to study the aetiology and pathogenesis of diseases, and develop and evaluate treatment strategies.

In this context, the 2017 periodontal classification accommodates evidence-based advances in dentistry that have occurred since the previous (1999) classification,[4] to better reflect contemporary knowledge. Its design has also incorporated 'future-proofing', wherein the classification will be periodically updated by a task force to reflect developments in knowledge over time. While some changes from the previous classification system could be considered academic to many practitioners, there has been a significant change of ethos – and evolution in terminology – in relation to the classification of periodontitis cases. This requires a shift in thinking and will no doubt take time to become embedded among the profession. The current system aims to capture several aspects of disease:

- severity of periodontitis and complexity of its management – denoted by disease *stage*;
- recognition of each patient's individual susceptibility to disease (and risk of future progression) – denoted by disease *grade*;
- extent of disease (based on the number of teeth affected/pattern of distribution of affected teeth); and,
- application of point-in-time clinical measurements to reflect current periodontal status and patient risk profile – taking diagnosis beyond simple evidence of historic progression and making it more dynamic.

Practice resources

The central tenet of classifying periodontitis post 2017 involves staging (Stages I-IV) and grading (Grades A-C) each case.[5] The classification provides detailed tables of criteria to characterise each stage and grade,[6] which results in some complexity and potential for 'grey areas'. As there have been concerns as to how the World Workshop proceedings could be implemented on a practical basis in general practice, the American Academy of Periodontology (AAP), European Federation of Periodontology (EFP) and British Society of

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Table 1: The 2017 classification of periodontal and peri-implant diseases and conditions.

PERIODONTAL DISEASES AND CONDITIONS										
Periodontal health, gingival diseases and conditions			**Periodontitis**			**Other conditions affecting the periodontium**				
Periodontal health and gingival health	Gingivitis: dental biofilm induced	Gingival diseases: non-dental biofilm induced	Necrotising periodontal diseases	Periodontitis	Periodontitis as a manifestation of systemic disease	Systemic diseases or conditions affecting the periodontal supporting tissues	Periodontal abscesses and endodontic-periodontal lesions	Mucogingival deformities and conditions	Traumatic occlusal forces	Tooth and prosthesis-related factors
PERI-IMPLANT DISEASES AND CONDITIONS										
Peri-implant health			Peri-implant mucositis			Peri-implantitis		Peri-implant soft and hard tissue deficiencies		

Table 2: Staging of periodontitis.

2017 World Workshop					British Society of Periodontology implementation of 2017 classification	
Stage	**Interdental CAL at site of greatest loss**	**Radiographic bone loss**	**Tooth loss**	**Complexity**	**Severity/complexity of management**	**Interproximal bone loss at worst site**
I	1-2mm	Coronal third (<15%)	No tooth loss due to periodontitis	Maximum probing depth ≤4mm Mostly horizontal bone loss	Early/mild	<15% maximum bone loss at worst site or <2mm from CEJ if bitewing only available
II	3-4mm	Coronal third (15-33%)		Maximum probing depth ≤5mm Mostly horizontal bone loss	Moderate	Coronal third of root
III	≥5mm	Middle third extending to mid third of root and beyond	Tooth loss due to periodontitis of ≤4 teeth	In addition to Stage II complexity: Probing depth ≥6mm Vertical bone loss ≥3mm Furcation involvement Class II or III Moderate ridge defect	Severe – potential for additional tooth loss	Middle third of root
IV	≥5mm	Apical third extending to mid third of root and beyond	Tooth loss due to periodontitis of ≥5mm teeth	In addition to Stage III complexity: Need for complex rehabilitation due to: Masticatory dysfunction Secondary occlusal trauma Severe ridge defect Bite collapse, drifting, flaring Less than 20 remaining teeth (10 opposing pairs)	Very severe - potential for dentition loss	Apical third of root

Table 3: Grading of periodontitis.

2017 World Workshop					British Society of Periodontology implementation of 2017 classification
Grade	**Rate of progression**	**Direct evidence of progression CAL/RBL**	**Indirect evidence of progression**		**Maximum % bone loss/age**
			% bone loss/age	**Case phenotype**	
A	Slow	No evidence of CAL or RBL over 5 yrs	<0.25	Heavy biofilm deposits with low levels of destruction	<0.5
B	Moderate	<2mm over 5 yrs	0.25-1	Destruction commensurate with biofilm deposits	0.5-1.0
C	Rapid	≥2mm over 5 yrs	>1.0	Destruction exceeds expectation given biofilm deposits	>1.0

Periodontology (BSP) have each produced resources to help clinicians to work through the classification process; these resources are readily accessible through their websites.[7-9] By their nature, these simplified implementation/decision tools are not exhaustive, so practitioners will still occasionally need to utilise additional resources when making diagnoses. In general, these user-friendly tools focus on decision-making in the patient cohorts most likely to present in dental practice, specifically:

- differentiating patients with periodontitis from those who do not have periodontitis;
- further characterisation of those patients with periodontitis; and,
- identifying patients with historic disease that is currently stable, but who are at high risk of future disease progression.

The AAP resources closely adhere to the format of the classification documents, while the EFP resources are most comprehensive and include a highly detailed algorithm to work through each case.[10] For pragmatic reasons, the dental schools in Cork and Dublin have selected the BSP implementation tool in their teaching based on its clarity and ease of use. This tool[11] aligns diagnosis with clinical periodontal screening/assessment, which arguably enhances its utility in practice. **Tables 2** and **3** provide an outline of the key aspects of the World Workshop proceedings with regard to staging and grading, respectively, and for comparison the BSP interpretation plan, which was designed to simplify the introduction of the 2017 classification in general practice. A current series in this *Journal* demonstrates the practical application of this tool in establishing periodontitis diagnoses.[12]

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Dr Sagi Shavit
DMD, MSc(Endodontology), MFGDP(UK), Dip.Dent.Imp

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Basic premises

Practitioners should understand some basic premises when using the 2017 system:

- **Worst affected tooth**: Diagnosis of disease stage and grade relates to the tooth most severely affected by periodontitis.
- **No need to sub-classify**: Information on the extent/distribution of periodontitis is used to further qualify stage and grade. A single diagnosis of stage and grade suffices – clinicians do not have to outline different levels of disease severity within the same mouth.
- **Assessment of current stability**: For the first time, the new system incorporates classification of periodontal health in both untreated and treated patients.[13] Current clinical measurements are utilised to assess stability. In treated cases, it is recognised that a patient who has been treated for periodontitis remains a periodontitis patient for life; while clinical stability may be achieved following treatment, this patient remains at risk of disease progression in the future if risk factors cannot be successfully controlled. These patients require long-term maintenance.
- **No regression to a lower stage following treatment**: Despite the improvement in clinical measurements associated with successful treatment outcomes, a patient does not regress to a lower stage of disease, i.e., if initially classified as Stage III, the patient will remain Stage III even after treatment. (One exception to this may be where regenerative surgery modifies calculation of radiographic bone loss at the most severely affected tooth.)
- **Clinical judgment still applies**: It is likely that borderline cases will continue to present and clinical judgment may still be required in specific circumstances, for example:
  - differentiation of early signs of slight disease (Stage I) from gingivitis; and,
  - differentiation of severe cases (on the borderline between Stage III and IV).
- **Value and limitations of screening**: The BSP tool aligns classification with periodontal (e.g., basic periodontal examination (BPE)) screening. This acknowledges the value of performing periodontal screening in every new patient and at recall visits for existing patients. In those patients formerly treated for periodontitis or demonstrating obvious clinical attachment/bone loss, it must be recognised that screening is inadequate and comprehensive periodontal examination is indicated.

British Society of Periodontology tool

The BSP implementation tool exhibits several subtle differences from the more detailed classification grids outlined in the 2017 classification paperwork. The rationale behind these changes has been discussed in detail,[14] but can be summarised as follows:

- **Staging with radiographs only**: Recognising that clinical attachment loss (CAL) measurements are not routinely collected in dental practice, staging is based on radiographic assessment of bone loss only.
- **Differentiating Stages III and IV is simpler**: The BSP tool simplifies the

Table 4: Assessment of disease status in periodontitis patients.

Disease status	BoP	PPD	Descriptor
Currently stable	<10%	≤4mm	No BoP at 4mm sites
Currently in remission	≥10%	≤4mm	No BoP at 4mm sites
Currently unstable	See descriptor	≥5mm or ≥4mm with BoP	Any site present with PPD ≥5mm or PPD ≥4mm with BoP

criteria for differentiating between Stage III and IV cases. Whereas the classification differentiated these stages based on complexity factors such as presence of ridge defects, bite collapse and number of teeth lost to periodontitis, the BSP tool acknowledges the challenges of making these inferences. Instead, Stages III and IV are differentiated by radiographic features alone: Stage III describes bone loss extending to the middle third of the root, whereas Stage IV involves apical third bone loss.

- **Thresholds for determining grade are simpler**: Grade is determined by measuring percentage bone loss at the most severely affected tooth, and dividing by patient age (% bone loss/age). The resulting ratio allows characterisation of each case as Grade A, B or C, respectively, with Grade B considered the likely 'default' (average rate of disease progression). The BSP tool simplifies the thresholds used for calculating these ratios.
- **Incorporates current disease status into diagnosis**: The BSP tool utilises clinical findings to include a formal statement of disease stability (e.g., "currently stable") in the diagnosis (**Table 4**). This will allow clinicians to relate diagnosis more closely to individual treatment needs and recall strategy.
- **Incorporates statement on risk factors:** The classification denoted smoking and diabetes as formal "modifiers", which can elevate the assigned disease grade. The BSP tool instead lists risk factors, where present, in the formal statement of diagnosis. This should flag the presence of risk factors more easily in case notes, in communication between clinicians and with the patient.

Implementation in practice

Diagnosis of a periodontitis case using BSP tool

Conduct patient assessment:

- periodontal screening (BPE) to assess treatment needs; and,
- if obvious clinical evidence of periodontitis/history of periodontitis diagnosis or periodontitis treatment exists, proceed straight to comprehensive examination.

Diagnostic threshold for a periodontitis case:

- presence of ≥2mm of interproximal clinical attachment loss at ≥2 non-adjacent teeth, not accounted for by other reasons (e.g., crown lengthening) – assessment of radiographic bone loss may serve as an effective proxy for clinical attachment loss measurements.

For periodontitis cases, utilise available radiographs to follow the implementation flowchart:

- determine the tooth that is most severely affected by proportional bone loss;
- quantify the percentage bone loss at this tooth → apply relevant stage;
- calculate percentage bone loss/patient age → apply grade;
- extent/distribution: evaluate the proportion of teeth affected by periodontal bone loss (<30% teeth affected = localised; ≥30% teeth = generalised – cases formerly diagnosed as localised aggressive periodontitis are described as "molar-incisor distribution");
- use summary clinical findings to list current disease status;
- statement of risk factors – note the presence of smoking or diabetes; and,
- list the diagnosis statement: extent – condition – stage – grade – stability – risk factors (e.g., generalised periodontitis Stage II Grade B, currently unstable. Risk: smoker, 10 cigarettes/day).

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IDA
irish dental association

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February/March 2021

MEMBERS' NEWS

In a time of pandemic

Practical advice was on offer when the Association staged its annual Practice Management Seminar last month. PAUL O'GRADY reports.

Dr James Goolnik, a GDP in London.

Dr Anne O'Neill, the President of the Association, opened the Seminar on Practice Management at the end of January, saying

indicators [KPIs]. Our best metric is new patients per month. In every month we should have 80. If we are getting 60, we need to improve. If we are getting 100, we are doing well". He challenged members of the Association to identify the top one, and then the top three, KPIs for their practice and also to identify three places where their practice is "leaking money" in time for his address to the IDA Annual Conference in April.

He also had a series of useful tips for practical improvements in a dental business. These were: use cloud accounting (so everyone can input information efficiently); check bills (during the pandemic, he found he was paying a water bill twice a month in error); make bleaching trays. Easy, profitable. Use contactless payment systems (the recommended

and the associate pays the practice, Revenue says that if the payment to the practice is for supply of overheads, then VAT may be payable, but this interpretation is disputed by accountants as well as the IDA. In a partnership, money is paid into a joint bank account and income is shared so there is less VAT liability.

David identified several challenges facing dentistry, including: further interruptions (doing accounts) and employee issues (testing positive) due to the pandemic; HIQA regulations for dentistry, which may mean increased expenditure to ensure standards; Revenue issues from 2020 – wage support scheme PAYE outstanding; the impact of Brexit (more expensive to set up a practice because of customs duty on equipment from the UK); and, the consolidation of practices as a result of corporate bodies.

However, he said there is good cause for optimism. There is a high level of savings; Ireland's economy only shrank by 2.5% in 2020 compared with 11.3% in the UK; the dental sector is currently buoyant; and, Davy stockbrokers is forecasting about 4% growth in the Irish economy for 2021.

Dr Martin Foster of Dental Protection.

Dealing with Covid complainers

After the break, Dr Martin Foster of Dental Protection spoke about helping to empower dentists and the dental team to deal with "Covid complainers", i.e., patients who may not want to comply with the strict regulations necessary for the safe practice of dentistry during this pandemic. While he spoke about leadership and empowerment generally in dental practices, he gave four specific tips for dentists or their staff to deal with a patient complaining about any or all aspects of the restrictions in a practice.

Tip 1: Stress the obligation on the dental practice to provide a safe environment for patients and staff.

Tip 2: Point out that compliance with the guidance obligations is a legal (and ethical) requirement for the practice.

Tip 3: State that the practice does not make the rules. They are set by the Government's Health Protection Surveillance Centre (HPSC) and the Dental Council of Ireland.

Tip 4: If none of the above satisfies the patient, respect the patient's choice. Specifically, state that the patient is free to choose not to attend your practice for treatment at this time, but that you

How and when you retire

John Connellan is a solicitor in practice for 20 years with experience in advising on the buying and selling of dental practices, and dental and employee contracts in dentistry. In practice with Conway and Donellan LLP in

Among many updates to the ethical requirements under the Code, there are enhanced provisions for responsibility in several areas, including:

- use of social media should be appropriate and not bring the profession into disrepute;
- requirements about referrals to and from specialists are enhanced to ensure that the patient is maintained in good oral health;
- prescribing, control and storage of medications is covered; and,
- there are now items relating to support, research and teaching for new dentists.

While David had much more information on the Codes than we can reproduce here, he did point out that the previous Codes on public relations and advertising had been rescinded, and that they were effectively covered in the new Code of Professional Behaviour and Ethical Conduct so that any advertising has to be factual, accurate and appropriate. Essentially, it cannot bring the profession into disrepute. There are also new Codes on Medical Emergencies and on Non-Surgical Cosmetic Procedures.

He said that the response to the call for consultation on the Codes had been very positive and urged dentists to put aside time to read the Codes when they arrive at practices.

The answer is the Association

The Chief Executive of the Association, Fintan [illegible]

changes that impact on Public Dental Service (PDS) dentists and would have detrimental effects on children: "We have challenged that and have offered to engage with the Department of Health and Children".

Brexit also poses challenges for dentistry and the Association has arranged a webinar to look at the practical implications for dentists on consumables, equipment and the workforce.

While Fintan also alluded to the health and well-being challenge for dentists, their colleagues, employees and family, he finished on a positive note: "We should take some time to reflect on what we learned in our practices and realise that there is now a huge amount of disposable income and savings available to patients that can be spent on dentistry".

Maximising social media

Marie Ennis O'Connor is a social media strategist for the healthcare sector and is a board member of the Mayo Clinic Social Media Network. She stated that social media is a fundamental shift in how we communicate and it has been more pronounced during the pandemic. There are 3.8bn users of social media in the world and it is growing exponentially. Irish people spend an average of [illegible]

Covid-19 and pregnant healthcare workers

The HSE has updated its guidance on high-risk healthcare workers to include pregnant healthcare workers.

'Very High Risk' HCWs, given the increased risk of exposure in healthcare". It states: "A workplace pregnancy risk assessment should be carried out by the line manager for all pregnant HCWs".

Pregnant HCWs "with no other risk factors" are designated as High Risk and "should work from home if possible". However, "clinical work, care work and working closely with others may be possible where testing of patients and staff, and provision of controls (e.g., screens, PPE) is effective in managing the risk".

HCWs with certain health conditions are considered Very High Risk and must follow the Government guidance for "extremely medically vulnerable" people. Very High Risk HCWs "must work from home and cannot return to the workplace".

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EDUCATION LOAN	4.97% (5.08% APR*)		
COVERED LOAN (SAVINGS HIGHER THAN LOAN)	4.97% (5.08% APR*)		
HOME LOAN	**LTV < 50%** 3.40% (3.45% APRC**)	**LTV < 80%** 3.60% (3.66% APRC**)	

*The APR (Annual Percentage Rate) included is an example only; all APR examples are based on a €10,000 loan over a period of 60 monthly repayments.
**The APRC (Annual Percentage Rate of Charge) included is an example only; all APRC examples are based on €200,000 over a period of 300 months. 1st legal charge will be required.

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Application of the new periodontal classification: Part 2

The second part of our series on the application of the 2017 World Workshop classification of periodontal and peri-implant diseases and conditions in daily practice presents two further clinical cases.

Introduction

The World Workshop on the Classification of Periodontal and Peri-implant Diseases and Conditions was convened in 2017 and resulted in the publication of a new classification system in 2018.[1] This replaces the formerly used 1999 (Armitage) Classification.[2] The complete Workshop proceedings are available to clinicians for free online via the European Federation of Periodontology (EFP) website.[3]

The new process for diagnosing and classifying cases of periodontitis incorporates staging and grading of each case.[4] At its simplest, the stage represents an interpretation of periodontitis severity and the complexity of management of the case. The grade provides supplemental evidence on the historic rate of disease progression, and can help to identify cases where risk factors exist and/or where expected outcomes of therapy may be less favourable.[5]

Diagnostic decision trees may be of value to practitioners in applying the new classification in daily practice. The current series utilises the decision tree published by the British Society of Periodontology (BSP),[6] as this arguably represents the simplest approach to classifying periodontitis cases.

CASE 1

This case assimilates patient history, clinical and radiographic findings from a 54-year-old female patient who attended the Dublin Dental University Hospital (DDUH) for periodontal assessment, in order to establish a clinical case diagnosis (**Figures 1** and **2**). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis is presented.

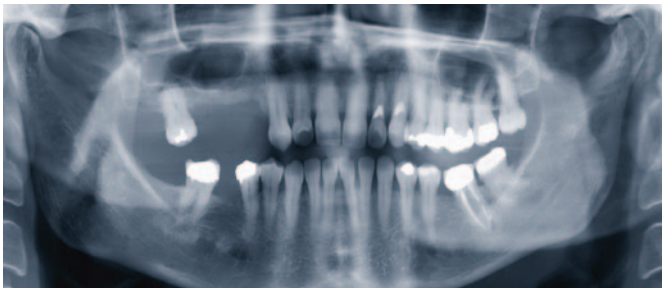


FIGURE 1: Orthopantomogram (OPG) of patient taken at initial periodontal assessment.

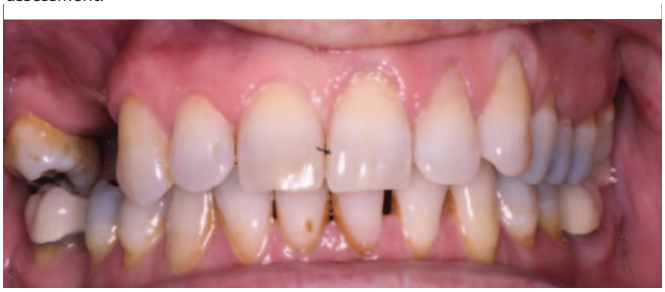


FIGURE 2: Clinical photograph at initial presentation at DDUH.

Case presentation: patient history

Table 1: Overview of case presentation.

Patient:	54-year-old female
Presenting complaint:	"I'm conscious of the gap on my upper right side"
Medical history:	No significant medical history
Smoking status:	Non-smoker
Family history of periodontitis:	No
Other risk factors:	No

Table 2: Summary of clinical findings.

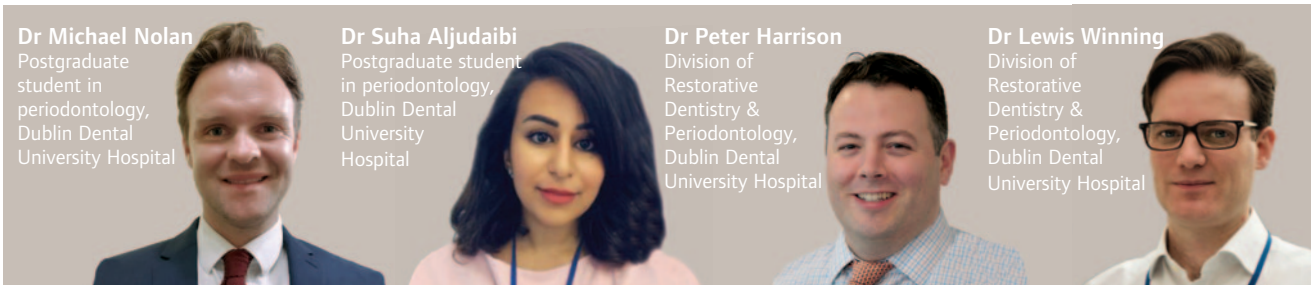
Visual assessment:	Relatively good tissue tone and colour
Probing pocket depths:	1-5mm
Clinical attachment loss:	2-6mm
Bleeding on probing:	35%
Plaque control:	Fair
Tooth mobility:	Nil
Furcation involvement:	Grade 1 mesial and distal 1.7
Tooth loss due to periodontitis:	Nil – all lost to repeated restoration failure and peri-apical infection
Other factors of relevance:	Poorly adapted restorative margins

Dr Michael Nolan
Postgraduate student in periodontology, Dublin Dental University Hospital

Dr Suha Aljudaibi
Postgraduate student in periodontology, Dublin Dental University Hospital

Dr Peter Harrison
Division of Restorative Dentistry & Periodontology, Dublin Dental University Hospital

Dr Lewis Winning
Division of Restorative Dentistry & Periodontology, Dublin Dental University Hospital



RADIOGRAPHIC FINDINGS:

Bone loss present:	Yes
Pattern of bone loss:	Horizontal
Severity of bone loss:	10-50%
Distribution:	Generalised

Clinical findings

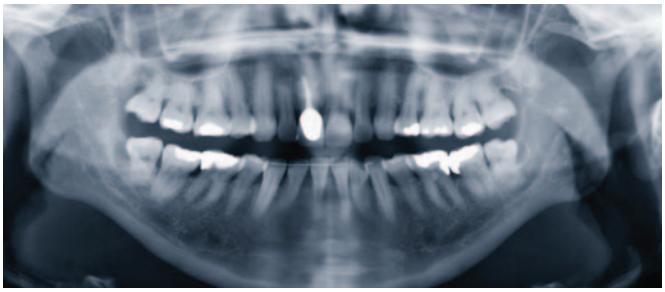
What is the diagnosis using the new classification?

The diagnosis in this case is:

- generalised periodontitis;
- Stage III, Grade B; and,
- currently unstable.

How this diagnosis was reached

- This is a periodontitis case as clinical attachment loss is present at ≥2 non-adjacent teeth.
- This is a generalised periodontitis case as >30% of teeth are affected by attachment loss/bone loss.
- Stage III was selected based on the site of greatest bone loss severity based on the radiographic assessment: approximately 50% radiographic bone loss at tooth 1.7 equating to the middle third of the root.
- Grade B was selected based on calculation of the ratio of percentage bone loss at the worst-affected tooth divided by patient age. In this case, the ratio is >0.5 and <1 (50% [bone loss] ÷ 54 [age] =0.93).
- The disease is currently unstable based on the presence of probing pocket depths (PPDs) ≥5mm.
- Risk factor assessment: disease moderators were not present and the periodontal destruction was commensurate with the biofilm deposits present and level of oral hygiene.



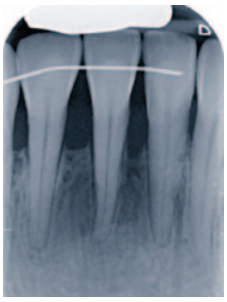
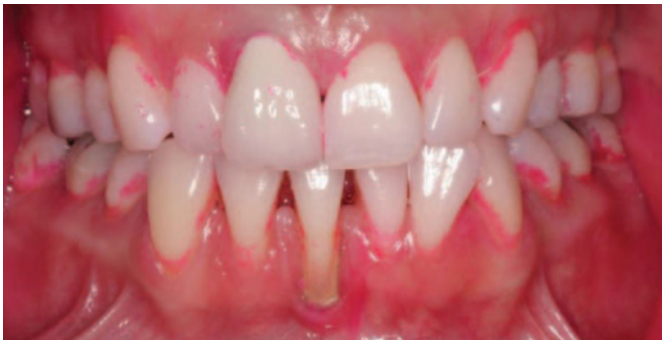


FIGURE 3 (ABOVE): Orthopantomogram (OPG) of patient taken at initial periodontal assessment.

FIGURE 4 (LEFT): Intra-oral periapical radiograph of mandibular anterior teeth.

FIGURE 5 (BELOW): Clinical photograph following plaque disclosure at initial presentation at DDUH.



CASE 2

This case assimilates patient history, and clinical and radiographic findings, from a 34-year-old female patient who attended the Dublin Dental University Hospital (DDUH) for periodontal assessment, in order to establish a clinical case diagnosis (**Figures 3-5**). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis is presented.

Case presentation: patient history

Table 3: Overview of case presentation.

Patient:	34-year-old female
Presenting complaint:	Receding gums, tooth sensitivity
History of presenting complaint:	Recession present since age 16; previous orthodontic treatment
Medical history:	No significant medical history
Smoking status:	Current smoker (15 cigarettes/day)
Family history of periodontitis:	No

Table 4: Summary of clinical findings.

Visual assessment:	Thin gingival biotype, gingival recession evident (8mm at buccal 41)
Probing pocket depths:	Range 4-7mm
Clinical attachment loss:	Range 1-7mm
Bleeding on probing:	23%
Plaque control:	Fair
Tooth mobility:	Grade I mobility at 4,1; 4,2; 3,1; 3,2
Furcation involvement:	Class II 2.7
Tooth loss due to periodontitis:	No
Other factors of relevance:	Iatrogenic factors (overhanging restoration 3,6 and 3,7)

RADIOGRAPHIC FINDINGS:

Bone loss present:	Yes
Pattern of bone loss:	Mainly horizontal with localised vertical components
Severity of bone loss:	Range 10-40% coronal third to mid third of the root
Distribution:	Generalised (>30% teeth)

Clinical findings

What is the diagnosis using the new classification?

The diagnoses in this case is:

- generalised periodontitis;
- Stage III, Grade C;
- currently unstable;
- risk factors: current smoker; and,
- localised recession defect 4,1 (RT 2).

How this diagnosis was reached

- This is a periodontitis case as clinical attachment loss is present at ≥2 non-adjacent teeth.
- This is a generalised periodontitis case as >30% of teeth are affected by attachment loss/bone loss.
- Stage III was selected based on the site of greatest bone loss severity (based on the radiographic assessment: approximately 40% radiographic bone loss at tooth 4.1, equating to the middle third of the root).
- Grade C was chosen based on calculation of the ratio of percentage bone loss at the worst-affected tooth divided by patient age. In this case, the ratio is >1 (40% [bone loss] ÷ 34 [age] =1.18).
- The disease is currently unstable based on the presence of probing pocket depths (PPDs) ≥5mm.
- Risk factor assessment: the patient is a current smoker.
- The present case contains additional subtlety in the presence of a notable gingival recession lesion at 4.1. Gingival recession is not specifically addressed in the simplified decision trees, where the focus is primarily on staging and grading of periodontitis. The recession lesion at 4.1 was classified using the system of recession type (RT) proposed by Cairo *et al.*, (2011),[7] which was adopted in the new classification.[8] RT 2 describes a gingival recession lesion that is associated with interproximal attachment loss. In RT 2 cases, the interproximal attachment loss is less than or equal to the attachment loss seen at the buccal aspect.

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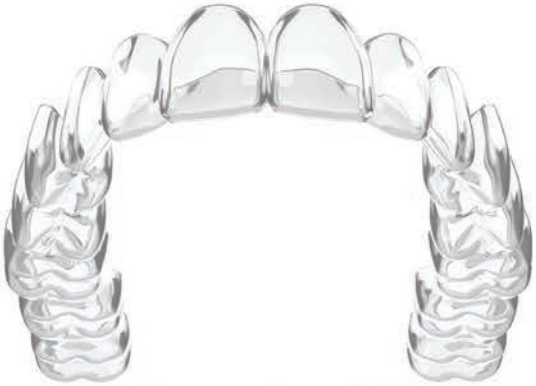

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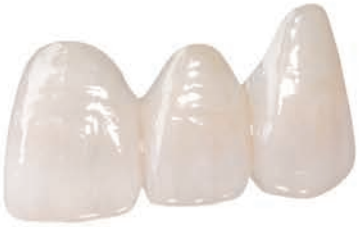

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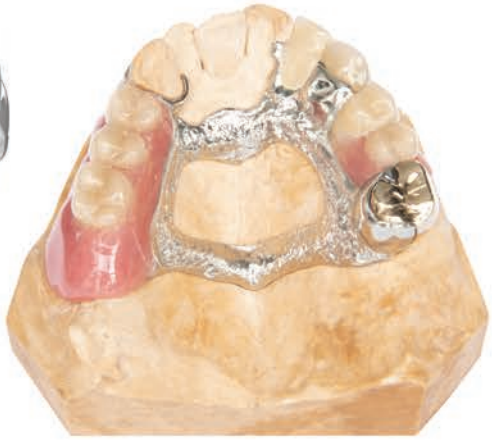

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Failure to communicate – nothing to complain about?

The recent Dental Complaints Resolution Service Annual Report outlines some common reasons for complaints to dental practices.

We are a profession well used to interacting with patients. After all, we spend considerable time in other people's personal space in the course of our day-to-day work. The nature of dentistry is such that we communicate with our patients not only before and after treatment, but also during. We communicate a lot. Mostly this goes well. Sometimes it does not.

The most recent Annual Report from the Dental Complaints Resolution Service shows that a significant proportion of complaints arose from poor communication. This may seem surprising, given the central importance of good communication in providing treatment successfully. On the other hand, when you consider how much communicating the profession must do every day, it is perhaps to be expected that we will not always get it right.

There are clear strands in the communication failures, which the DCRS report picks up on. The difficulties appear to arise in relation to poor explanation of treatment costs and failing to address complaints. It is worth considering why these two areas might feature.

Dr Martin Foster BDS MPH DipHSM

Martin is Dentolegal Consultant at Dental Protection

Treatment costs

Firstly, treatment costs may not always be predictable; they may change as treatment progresses. It may not always be possible to foresee the exact amount of the possible increase, but has the patient been warned that the cost may be more than initially indicated? For example, the root canal treatment cost may go up if a specialist referral is required half way through treatment. It is better to make sure that the patient is prepared for this possibility.

There is sometimes a lack of clarity about what the fee covers (e.g., does the quotation for that root canal or implant treatment include restoration with a crown? Does the orthodontic fee cover replacement retainers? If so, how many?)

Other factors that can potentially lead to communication breakdowns include simple oversights, such as not providing details of treatment costs in advance, or being vague about what these will be. Patients can also have a selective memory of the information given, or may have unrealistic expectations of what the cost should be.

The best way to prevent treatment cost complaints is to make sure that the patient understands the details of the treatment that they will get for their money and knows what they can expect to pay in advance. Written treatment plans with detailed explanations and costings can be well worth the effort.

Managing complaints

Nobody likes complaints. Receiving one can trigger a whole range of simultaneous, unhelpful emotions, which can create stress just at the point when you need a calm and objective view of the situation. This can clearly influence our communication skills.

Another factor can be unfamiliarity with what to do with a complaint. You may simply not be used to this and may unwittingly respond in a way that aggravates the situation. Sometimes it might seem easier to not engage and hope that it just goes away.

The best way to manage a complaint is to attend to it promptly and in accordance with a process with which you are familiar. Check your current practice complaints procedure and make sure it is up to date, particularly given the unique challenges dental professionals are facing due to the Covid-19 pandemic.

A prompt and process-driven response to a complaint helps to keep things objective and unemotional, as well as avoiding the hazards of delay, which can stem from a lack of confidence when figuring out the next steps. It's always a good idea to remind yourself of the practice complaints procedure, even if you don't need it at present. One day you will be glad you did, as an effective, early response to a complaint can stop a small spark becoming a big fire.

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1. The Guardian https://www.theguardian.com/society/2009/aug/08/dentists-earnings-nhs-private-practice. Accessed December 2017.

Management of the deep carious lesion: a literature review

Abstract

Statement of the problem: The management of the deep carious lesion is a topic of keen interest to the dental profession with many and varied treatment modalities advocated in the scientific literature.

Purpose of the study: This literature review proposes to summarise current consensus approaches and scientific thinking in this area. Some new treatment advances have been advocated in recent years and their efficacy is also examined. Topics and areas of interest are proposed for future research.

Methods: The studies examined in this review were based on searches online in the PubMed, Embase, and Google Scholar search engines, and Cochrane reviews, and include systematic reviews and consensus papers, as well as observational studies, randomised controlled trials and meta-analyses.

Conclusion: Problems exist in this area regarding precise definitions and measurement of deep carious lesions in practice, and standardisations of measurement do not currently exist. This is an area where further study and research would be welcome.

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Introduction: dental caries, its sequalae and appropriate caries management

Dental caries is a disease process affecting dental hard tissues, caused by a shift in the normal oral microbiological biofilm balance to a more acidophilic, aciduric and cariogenic, biofilm consisting mainly but not exclusively of *Streptococci mutans* and lactobacilli. Frequent ingestion of fermentable carbohydrates encourages an environment of low pH within the biofilm, which favours the selective growth of cariogenic bacteria.[1]

A cumulative demineralisation pattern over time leads to dissolution of dental hard tissues and the formation of a carious lesion. Other factors such as fluoride ion concentration and salivary flow rate modify the caries process and are intimately involved in determining the likelihood of overall mineral loss and the rate at which this occurs. The operative treatment of the deep carious lesion (DCL) should:

- aid biofilm control on a tooth surface;
- protect the pulp-dentine complex and arrest the lesion activity by sealing the coronal part; and,
- restore the function, form and aesthetics of the tooth.[2]

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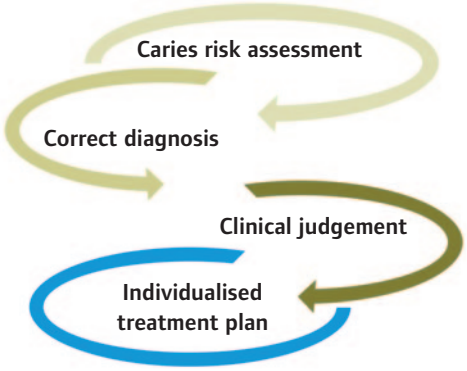


FIGURE 1: Sequential gathering of information leading to individualised patient treatment plan during caries management.

Maintaining pulpal vitality has a great impact on the lifetime prognosis of a tooth and also reduces the overall lifetime cost of retaining that tooth.[3]

Many studies have shown that sealing of carious lesions can lead to caries arrest so this is accepted as one of the guiding principles when restoring a DCL.[4]

Evidence-based research has encouraged a minimally invasive (MI) approach to the management of caries in the post-fluoride caries generation.[2] This approach stresses a preventive philosophy, individualised risk assessments for patients, early detection of lesions, and efforts to remineralise non-cavitated lesions, with the provision of preventive care to minimise the need for operative intervention (**Figure 1**). When operative intervention is unequivocally required, the procedure used should be as minimally invasive as possible.[5]

With the above treatment principles in mind, the DCL should be treated with an MI treatment strategy, with the primary aim of preserving pulp vitality if possible and restoring the tooth to its original form so that normal biofilm control can be re-established.[6]

Precise terminology used in relation to the operative management of the deep carious lesion

In 2015, the International Caries Consensus Collaboration, comprising worldwide cariology experts, decided on consensus recommendations for terminology in relation to managing carious lesions.[7] This terminology is used throughout this review.

A carious lesion is a consequence of a disease process and its management involves intervention to arrest its progression by conversion of the lesion to a cleansable form. The size and depth of a carious lesion can be assessed clinically or radiographically, but there is currently no standard definition or measurement of the term DCL.

According to this Consensus Collaboration, "deep lesions are defined as those radiographically involving the inner pulpal third or quarter of dentine or with clinically assessed risk of pulpal exposure" (**Figure 2**).

The hardness of dentine is an indicator of the extent of caries in dentinal tissue. The International Caries Consensus Collaboration has defined the different clinical presentations of affected carious dentine.

Soft dentine

Soft dentine will deform or deflect when a hard instrument is pressed onto it and can be easily scooped up (e.g., with a hand excavator), with little force being required.

Leathery dentine

Leathery dentine does not deform when an instrument is pressed onto it and can still be easily lifted without much force being required. There may be little difference between leathery and firm dentine, with leathery being a transition on the spectrum between soft and firm dentine.

Firm dentine

Firm dentine is physically resistant to hand excavation, and some pressure needs to be exerted through an instrument to lift it.

Hard dentine

For hard dentine, a pushing force needs to be used with a hard instrument to engage the dentine, and only a sharp cutting edge or a bur will lift it. A scratchy sound or 'cri dentinaire' can be heard when a straight probe is taken across the dentine.

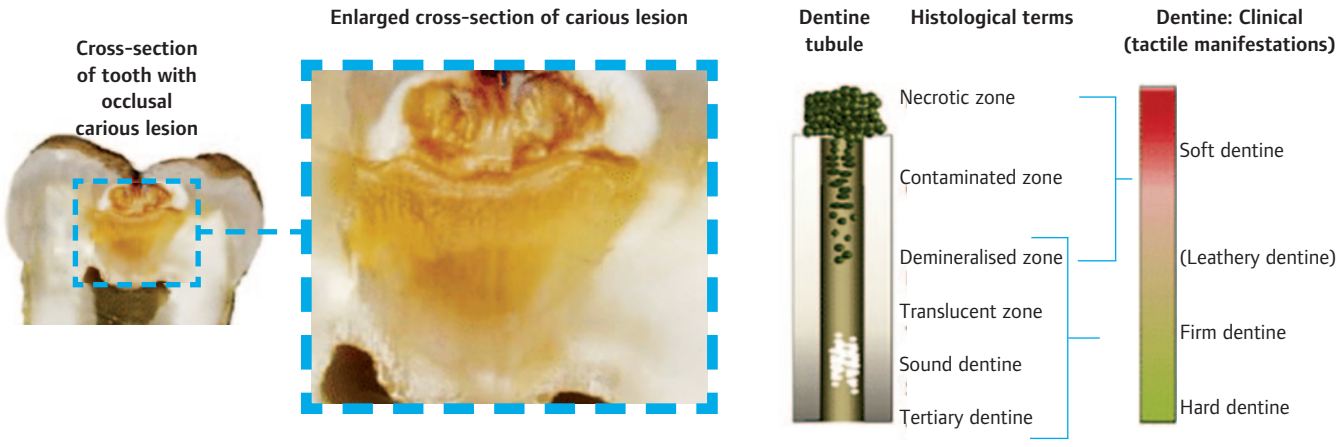


FIGURE 2: Diagrammatic representation of the carious lesion.[8]

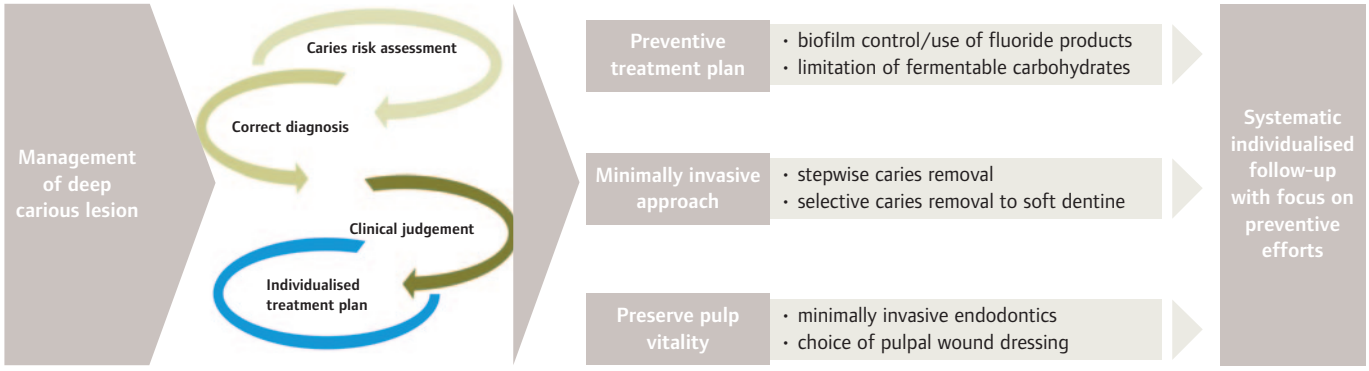


FIGURE 3: Sequential, evidence-based management approach to DCLs.

The classical approach to caries removal: non-selective removal to firm/hard dentine or complete caries removal

Conventional or classical management of caries involves:

- removal of all carious tissue (non-selective removal to hard dentine) even at the risk of pulpal exposure;
- remaining dentine must be hard and firm, often tested by means of a tactile approach with a sharp excavator; and,
- looking for the 'chattering' sound or cri dentinaire.

The rationale for this extensive tissue removal is:

- removal of all infected dentine and bacterial removal so that caries could be stopped from progressing further;
- providing a firm base to the lesion so that restorative materials could be placed and retained adequately; and,
- removing demineralised discoloured dentine.

There is no evidence-based scientific rationale behind this approach, although it is practised worldwide and in some countries remains the overwhelming treatment of choice for DCLs.[9]

Inherent risks

There are a number of risks to this approach, including:

- high risk of pulpal exposure during complete caries removal;
- can also be very destructive of tooth tissue, pushing the affected tooth further along the restorative cycle; and,
- unnecessary reduction of residual dentine floor thickness above the pulpal tissue, which is critical to pulpal health.

Non-selective removal to hard dentine or complete caries removal is now considered overtreatment and this approach is no longer recommended. Several recent systematic reviews agree with this consensus opinion.[10-12]

Stepwise management approach

This technique was introduced to manage DCLs with no signs or symptoms of irreversible pulpitis, but where pulpal exposure could be expected if complete caries removal was attempted (**Figure 3**).[13] The outline operative procedure involves:

- the outermost necrotic carious dentine is partially removed, leaving a soft layer of carious dentine over the pulpal floor;
- the peripheries of the lesion are cleaned to hard dentine;
- the tooth is then sealed with a provisional restoration to entomb any remaining bacteria in the carious dentine for several weeks to months, to allow remineralisation of the carious dentine and the formation of tertiary dentine within the pulpal chamber; and,
- when the tooth is definitively restored, the amount of carious dentine that requires removal is often lessened due to remineralisation and re-hardening of dentine.

Upon re-entering the lesion, the remaining dentine is drier and harder, making it easier to remove without exposing pulpal tissue, indicating reduced lesion activity.

The cultivable microflora in the lesion change before and after stepwise caries removal.[13,14] At the first stage of caries removal, a mixed microbiota is found containing mainly lactobacilli, gram-positive and gram-negative rods, and streptococci. Lactobacilli and gram-positive rods dominate the colony-forming units.

After re-entry, the overall colony numbers fall markedly, and the overall proportion of lactobacilli and gram-negative rods substantially reduces. The flora is dominated by *Actinomyces naeslundii* and *Streptococci orallis*, not typical of the cariogenic microbiota of DCLs.[15]

Stepwise caries removal involves sealing off residual caries from their source of fermentable dietary carbohydrates, thus encouraging arrest of the caries process. The provision of an adequate seal by the provisional restoration provided is integral to the success of this treatment. If an adequate peripheral seal is provided, the need for the re-entry second stage has been questioned.[16] Several studies show higher success rates in terms of retaining pulp vitality long term when the stepwise technique is used in comparison to complete caries removal.[17-19]

Ultraconservative management approach: selective removal of carious dentine

Selective removal of caries is a similar approach to stepwise caries removal but is more conservative in nature. Its aim is to avoid pulpal exposure by restricting caries removal comfortably away from the pulp chamber. The operative plan is to clean carious dentine from the peripheral walls of the carious lesion but to leave caries *in situ* over the pulpal floor and place a definite restoration that seals the carious dentine. This takes place in one visit and no re-entry visit is envisaged.

Selective removal of dentine can be further classified into two subsections:

1. **Selective removal to firm dentine**
   This involves removing peripheral dentine around the cavity margins to

firm dentine but only excavating to leathery dentine over the pulpal floor. There is resistance to a hand excavator on the pulpal floor, but the peripheral margins are left hard (cri dentinaire) after removal of dentine is complete. This is the treatment of choice in shallow or moderately deep cavitated dentine lesions according to the International Caries Consensus Committee.

2. **Selective removal to soft dentine**

This is advocated as the treatment of choice in DCLs as it lessens the risk of physiological stress or exposure of pulpal tissue. Soft carious tissue is left over the pulpal tissues to avoid exposure, encouraging pulp health, while peripheral enamel and dentine are prepared to hard dentine, to allow an effective adhesive seal to be achieved by restoration placement. Selective removal to soft dentine reduces the risk of pulp exposure in deep lesions significantly compared with non-selective removal to hard dentine or selective removal to firm dentine.[7]

Postulated concerns in relation to selective caries removal include the risk of residual caries progression, reduced fracture resistance, and possible higher incidence of long-term clinical restoration failure.

In a Cochrane review by Ricketts *et al.*, exposure rates were shown to be significantly lower using a stepwise approach as opposed to complete caries removal. Complete caries removal involves a much higher risk of pulpal exposure in comparison to selective removal of carious dentine.[20] Assuming that these pulpal exposures are treated mainly by direct pulp capping, which has a poorer success rate in cases of carious exposure, then it must be inferred that selective removal of dentine should be used routinely as it does not have any disadvantages compared to complete caries removal.[21]

Vital pulp therapies – minimally invasive endodontics?

Vital pulp therapy is the umbrella term for three types of procedure that are performed on vital carious exposures: direct pulp capping; partial/complete pulpotomy; and, full/partial pulpectomy.

Direct pulp capping involves the placing of a medicament or wound dressing, commonly calcium hydroxide, over the pulp exposure.

The success rate of direct pulp capping procedures using setting calcium hydroxide as measured by maintenance of pulpal vitality was 37% after five years and 13% after 10 years. Most failures happened slowly and asymptomatically over time, with the pulp becoming necrotic or calcifying.[22]

The low success rates of direct pulp capping using calcium hydroxide in cariously exposed teeth have led to controversy about the use of this technique. The introduction of newer biocompatible materials, such as mineral trioxide aggregate (MTA) and Biodentine (Septodont; Lancaster, PA, USA, and France), has sparked renewed interest with their promise of comparatively higher success rates.

Full/partial pulpotomy is a well-established technique in primary teeth and has shown some success in permanent young molars using calcium hydroxide materials. In light of studies showing much higher success rates following partial pulpotomy techniques in carious teeth using MTA,[23,24] the advent of MI endodontics may be approaching.

Overall, in keeping with the philosophy of MI techniques, the maintenance of a vital pulp, even partially, has many advantages over full pulpectomy. The management of the inflamed pulp is trending to a more conservative approach and techniques such as direct pulp capping, full or partial pulpotomy in vital DCLs using newer materials such as MTA or similar are being revisited with some success.[25]

Table 1: Properties of commonly used restorative materials.

Amalgam	Composite	Glass ionomer
Historical significance – long track record	In use over 50 years	In use over 50 years
Unaesthetic; patient concerns re appearance and safety	Aesthetic demand by patients	Main use in permanent teeth is as provisional/ interim restoration
Minamata signals end of era in Europe		
Ease of use, placement and finishing	Technically more demanding	Usage mainly limited to primary teeth
Proven longevity	Longevity nearing equivalence of amalgam	Poor longevity and wear resistance
Good seal; corrosion products	Greater fracture resistance than amalgam in large restorations in some studies	Release of fluoride ions
Lack of adhesive properties	Adhesive restoration	Chemical adhesion properties

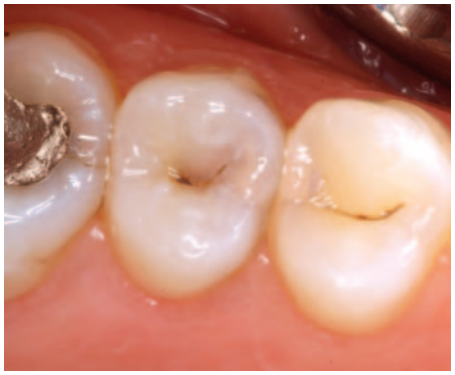
Restoring the deep carious lesion

The choice of restorative material used depends on many factors, such as:

- extent of lesion;
- overall carious risk;
- carious lesion activity; and,
- individual patient conditions, e.g., dental crowding, saliva rate (**Table 1**).

Increasingly, amalgam is becoming unacceptable to dental patients from an aesthetic viewpoint. Environmental concerns are also an issue, and the Minamata Treaty proposes the eventual phase out of amalgam in Europe by 2030 with increasing phase down of its use currently being introduced.[26]

Improvements in the composition of composite resin and bonding agents are leading to increased longevity of restorations.[27] Most studies show dental amalgam to have superior longevity as a restoration in comparison to resin composite. However, some studies have shown that composite is now reaching near equivalence.[28] Large amalgam restorations may show a higher fracture failure rate than the comparable composite resin restoration.[29]



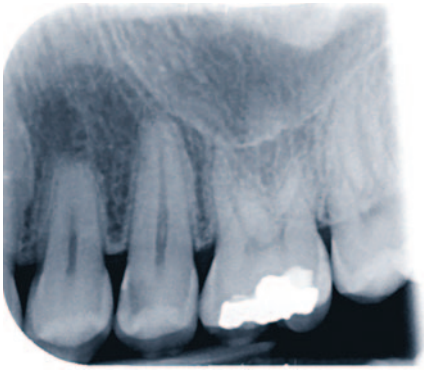


FIGURE 4: Clinical and radiographic appearance of a carious lesion – can we accurately describe how deep this lesion is?

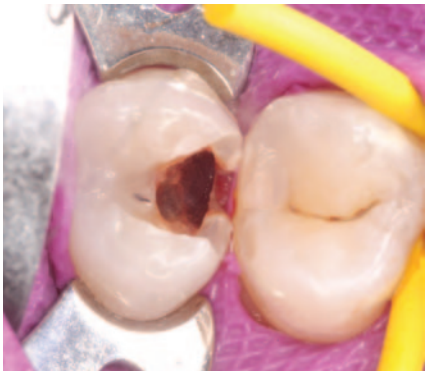


FIGURE 5: Clinical decisions made during caries removal have a direct bearing on the long-term outcome for this tooth, such as the caries management approach undertaken, pulpal treatment considerations and choice of restorative material.

The guiding principles of minimal intervention dentistry should still be practised when deciding to replace an existing restoration or re-intervene when defects are found in current restorations. Similarly, once the decision to re-intervene has been made, sound tooth tissues should be preserved during replacement to preserve pulpal health, reduce costs, and limit the subjective burden to the patient. Thus, resealing, refurbishing, repolishing, and repairing restorations should be performed whenever possible, and complete restoration replacement avoided.[30] Repaired restorations have a clinically equivalent survival rate to those restorations that are completely replaced.[31]

Pulpal wound dressings

The purpose of pulp capping materials is to produce and maintain a bacterially impervious seal and physical barrier over the direct pulpal complex, thus reducing bacterial insult following pulpal exposure. Ideally, hard tissue barrier formation is also induced, resulting from pulpal activity. Ideally, these dressings should:

- be non-toxic, biocompatible, antibacterial, and provide a long-term impervious seal over the wound; and,
- provide an environment that encourages regeneration of the pulp-dentinal complex so that the self-reparative capacity of the pulp is optimised.[32]

Calcium hydroxide cement has been the gold standard material for many years. Its mode of action involves the production of hydroxyl ions in a high pH environment, inducing a superficial pulpal necrosis. This mild cytotoxicity stimulates pulpal cells to proliferate and differentiate, producing reparatory tertiary dentine.[33] This tertiary dentine forms a calcific dentinal bridge and acts as a physical barrier to stop ingress of bacteria into the pulpal tissues. Unfortunately, there are some issues with calcium hydroxide, including:

- it does not bond directly to and does not adequately seal the pulpal tissue exposure area;
- it is soluble and degrades over time leaving voids or dead space, with microleakage under restorations;
- the tertiary dentine produced has numerous tunnel defects and is irregular in production; and,
- the current hypothesis is that bacterial ingress could occur through porous tertiary dentine and induce pulpal irritation, dystrophic calcification and potentially degenerative changes in the pulp.[34]

Some calcium silicate-based bioceramic materials, such as MTA, calcium-enriched mixture (CEM) and Biodentine, have been introduced as alternatives in recent years. All are capable of inducing osteogenesis, dentinogenesis and cementogenesis, inducing hard tissue formation.[35] MTA and Biodentine have been shown *in vivo* to produce thicker, more homogenous and complete reparative dentine bridges in comparison to calcium hydroxide.

The main active compounds in these products are calcium hydroxide and a calcium silicate hydrate gel, which solidifies and forms an effective seal and barrier. Advantages of MTA include:

- excellent sealing ability;
- non-absorbable due to its low solubility; and,
- high compressive strength.

Problems exist and include:

- long setting time;
- difficult handling properties; and,
- staining and discolouration of the treated tooth.[36,37]

Biodentine is a tri-calcium silicate-based material used as a bioactive material and pulp-capping agent. It has:

- a much shorter setting time than MTA (approximately 12 minutes);
- when set, similar mechanical properties to dentine itself; and,
- handling characteristics that are easier than MTA.

Research on the biocompatibility and dentinogenic capacity of Biodentine as compared to MTA is currently scarce but one recent study[38] showed similar results between the two products. Its long-term efficacy needs further investigation.

Discussion

Figures 4 and **5** show general visual examples of the deep carious lesion. The treatment of the DCL is one of the most common scenarios in dentistry, but

some basic key definitions are still a matter of debate, such as:

- the precise definition of a DCL;
- the precise definition of the depth and size of a DCL; and,
- as a rule, is a DCL cavitated?

These fundamental features of a DCL should be agreed and precisely defined so that future scientific studies can be undertaken with agreed definition parameters in place. Any results and conclusions from these studies would have a uniform scientific basis and their results and conclusions would be more universally accepted. This could translate more simply and quickly into true evidence-based dental operative practices.

This literature review has shown that it is a period of great change but also great innovation in the management approach for DCLs. The dental profession is in a time of flux with evidence-based research and best practice not always in line with what happens in daily general dental practice. More wide-ranging, evidence-based research should ideally be undertaken to support these changes in the best interests of science and patients.

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CPD questions

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

IDA irish dental association
CPD

1. According to the International Caries Consensus Committee, the treatment of choice in shallow or moderately deep cavitated dentine lesions is:

- ○ A: Selective dentine removal to soft dentine
- ○ B: Complete caries removal
- ○ C: Selective dentine removal to firm dentine

2. The newer calcium silicate materials such as MTA and Biodentine have significant advantages over the previous gold standard material, calcium hydroxide. These materials:

- ○ A: Induce osteogenesis, dentinogenesis and cementogenesis
- ○ B: Produce thicker, more homogenous and complete reparative dentine bridges in comparison to calcium hydroxide
- ○ C: Consist of calcium hydroxide and a calcium silicate hydrate gel, which solidifies and forms an effective seal and barrier
- ○ D: All of the above

3. Evidence-based research has encouraged a minimally invasive (MI) approach to the management of caries in the post-fluoride caries generation. What does a minimally invasive approach to caries management involve?

- ○ A: Adoption of a preventive philosophy
- ○ B: Designing individualised risk assessments for patients
- ○ C: Early detection of carious lesions
- ○ D: Efforts to remineralise non-cavitated lesions
- ○ E: When operative intervention is unequivocally required, the procedure used should be as minimally invasive as possible

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Impact of reducing water fluoride on dental caries and fluorosis

James, P., Harding, M., Beecher, T., Browne, D., Cronin, M., Guiney, H., et al.

Guidance intended to reduce fluoride toothpaste ingestion in early childhood was introduced in Ireland in 2002. In 2007, water fluoride concentration was adjusted from 0.8-1.0 to 0.6-0.8ppm. The objective of this study was to determine the difference in caries and fluorosis levels following introduction of these two policy measures. A before and after study compared caries and fluorosis in random samples of eight year olds in Dublin (n = 707) and Cork-Kerry (n = 1,148) in 2017, with eight year olds in Dublin (n = 679) and Cork-Kerry (n = 565) in 2002. Dentinal caries experience (primary teeth, d_{3vc}mft(cde)) and fluorosis (permanent teeth, Dean's index of very mild or higher) were clinically measured. Lifetime exposure to community water fluoridation (CWF) was classified as "full CWF"/"no CWF". Effect of examination year on caries prevalence and severity and fluorosis prevalence was assessed using multivariate regression adjusting for other explanatory variables. There was little change in commencement of fluoride toothpaste use at ≤24 months following introduction of toothbrushing guidance. Among children with full CWF, there was no statistically significant difference in caries prevalence or severity between 2017 and 2002. In 2017, caries prevalence was 55% in Dublin (full CWF) and 56% in Cork-Kerry (full CWF), and mean d_{3vc}mft(cde) among children with caries was 3.4 and 3.7, respectively. Caries severity was less in 2017 (mean 4.2) than 2002 (mean 4.9) among children with no CWF (P = 0.039). The difference in caries severity between children with full CWF and no CWF was less in 2017 than in 2002 (interaction P = 0.013), suggesting a reduced benefit for CWF in 2017. In 2017, fluorosis prevalence was 18% in Dublin (full CWF) and 12% in Cork-Kerry (full CWF). Fluorosis was predominantly "very mild" with no statistically significant difference between 2017 and 2002. CWF at 0.6-0.8ppm is an effective caries-preventive measure. Results suggested low uptake of toothbrushing guidance, a reduced caries-preventive effect for CWF in primary teeth, and no reduction in fluorosis following introduction of the policy measures.

Journal of Dental Research 2020. [Online ahead of print.]
doi:10.1177/0022034520978777.

Harms and benefits of e-cigarettes and heat-not-burn tobacco products. A literature map

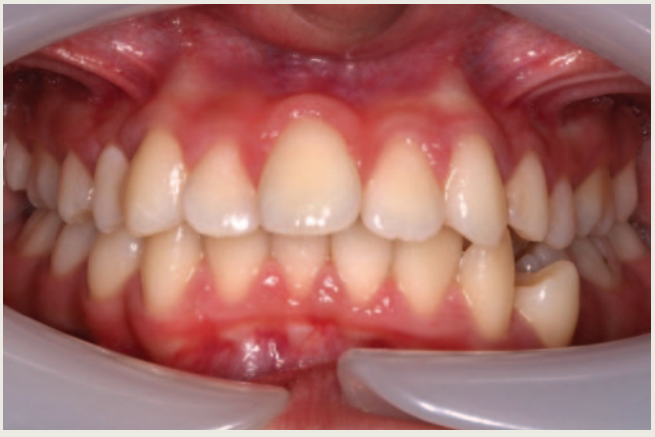
McCarthy, A., Lee, C., O'Brien, D., Long, J.

This mapping exercise describes the nature and extent of the peer-reviewed literature on the public health harms and benefits of e-cigarettes and heat-not-burn tobacco products to the human population. The authors identified 388 papers eligible for inclusion in the map, 361 reporting the harms and benefits of e-cigarettes, and 28 reporting the harms and benefits of heat-not-burn tobacco.

Most of the observed harms were due to acute events associated with the use of e-cigarettes. They included poisonings, burns, fractures, lung injury and exacerbations of asthma. There were fatalities among the poisonings and respiratory disease cases, and long-term disability among some burn cases. There was some early evidence of damage to cardiovascular and respiratory tissue, mainly due to metals and volatile organic compounds. Four cross-sectional surveys on cancers identified the presence of carcinogens for lung, oral, and oesophageal cancer, and one identified biomarkers for bladder cancers. Some respiratory, cardiovascular, and oral diseases were noted to be less harmful in e-cigarette users than in conventional cigarette smokers, but were as harmful in dual users.

Quiz answers

Questions on page 10.



1. This patient is in the permanent dentition with single central incisor tooth.
2. Traumatic loss or cessation of a developing central incisor, hypodontia, mesiodens, fusion and gemination. A single solitary median central incisor differs from a normal central incisor in that the crown form is symmetrical and erupts in the midline. The contour of the two distal surfaces have the anatomical shape of the distal surface of a central incisor.
3. Solitary median maxillary central incisor syndrome. Congenital nasal malformation and short stature are frequently associated with this syndrome.
4. Holoprosencephaly.
5. Multidisciplinary management is most appropriate. Genetic counselling, with input from paediatric dentist, restorative dentist, orthodontist and periodontist/oral surgeon.

The evidence map featured few reported benefits. The most common benefits, which were reported by a small number of heavy smokers of conventional tobacco cigarettes, were smoking cessation and smoking reduction. However, we note that many studies showed that dual use of both e-cigarettes and conventional tobacco cigarettes was not less harmful than smoking conventional tobacco cigarettes alone, thereby raising questions about the smoking reduction benefit of e-cigarettes.

Health Research Board. 2020. Available from: https://www.hrb.ie/publications/publication/harms-and-benefits-of-e-cigarettes-and-heat-not-burn-tobacco-products-a-literature-map/returnPage/1/.

Neutralising antibodies in Spike mediated SARS-CoV-2 adaptation

Kemp, S.A., Collier, D.A., Datir, R., Ferreira, I.A.T.M., Gayed, S., Jahun, A., et al.

SARS-CoV-2 Spike protein is critical for virus infection via engagement of ACE2, and amino acid variation in Spike is increasingly appreciated. Given that both vaccines and therapeutics are designed around Wuhan-1 Spike, this raises the theoretical possibility of virus escape, particularly in immunocompromised individuals where prolonged viral replication occurs. Here we report chronic SARS-CoV-2 with reduced sensitivity to neutralising antibodies in an immune-suppressed individual treated with convalescent plasma, generating whole genome ultradeep sequences by both short and long read technologies over 23 time points spanning 101 days. Although little change was observed in the overall viral population structure following two courses of remdesivir over the first 57 days, N501Y in Spike was transiently detected at day 55 and V157L in RdRp emerged. However, following convalescent plasma we observed large, dynamic virus population shifts, with the emergence of a dominant viral strain bearing D796H in S2 and △H69/△V70 in the S1 N-terminal domain NTD of the Spike protein. As passively transferred serum antibodies diminished, viruses with the escape genotype diminished in frequency, before returning during a final, unsuccessful course of convalescent plasma. *In vitro*, the Spike escape double mutant bearing △H69/△V70 and D796H conferred decreased sensitivity to convalescent plasma, while maintaining infectivity similar to wild type. D796H appeared to be the main contributor to decreased susceptibility, but incurred an infectivity defect. The △H69/△V70 single mutant had two-fold higher infectivity compared to wild type and appeared to compensate for the reduced infectivity of D796H. Consistent with the observed mutations being outside the RBD, monoclonal antibodies targeting the RBD were not impacted by either or both mutations, but a non RBD binding monoclonal antibody was less potent against △H69/△V70 and the double mutant. These data reveal strong selection on SARS-CoV-2 during convalescent plasma therapy associated with emergence of viral variants with reduced susceptibility to neutralising antibodies.

medRxiv 2020 12.05.20241927. doi: https://doi.org/10.1101/2020.12.05.20241927.

Evaluating the effects of SARS-CoV-2 Spike mutation D614G on transmissibility and pathogenicity

Volz, E., Hill, V., McCrone, J.T., Thomson, E.C., Rambaut, A., Conno, T.R.

Global dispersal and increasing frequency of the SARS-CoV-2 spike protein variant D614G are suggestive of a selective advantage but may also be due to a random founder effect.
We investigate the hypothesis for positive selection of spike D614G in the United Kingdom using more than 25,000 whole genome SARS-CoV-2 sequences. Despite the availability of a large dataset, well represented by both spike 614 variants, not all approaches showed a conclusive signal of positive selection. Population genetic analysis indicates that 614G increases in frequency relative to 614D in a manner consistent with a selective advantage. We do not find any indication that patients infected with the spike 614G variant have higher Covid-19 mortality or clinical severity, but 614G is associated with higher viral load and younger age of patients. Significant differences in growth and size of 614G phylogenetic clusters indicate a need for continued study of this variant.

Cell 2021; 184 (1): 64-75.

SITUATIONS WANTED

Experienced dental surgeon seeks room in existing medical or dental practice to set up or to buy existing list/practice from retiring/departing principal surgeon in Clare/Galway/Limerick/Tipperary area. Please email in confidence to discuss at dentalsurgeonbuy@gmail.com.

SITUATIONS VACANT

Associates

We have an opportunity for an energetic, full-time associate to replace a departing colleague. Productive schedule, implants and cosmetic dentistry, excellent support team. Position offers mentoring by very experienced clinicians. Email paula@eyresquaredental.ie for information or to apply.

Dental associate required in Carlow town. Full-time position with full book guaranteed. Be part of a great multidisciplinary team with many visiting specialists. Excellent backroom support. Cerec, in-house laboratory, digital scanner, CBCT. Suit experienced colleague with ambition. Contact Bpm.gmedical@gmail.com.

Associate required for busy, established Waterford City practice. Fully computerised, OPG, excellent support staff. Email CV to waterforddentist21@gmail.com or call 087-222 7316 after 7.30pm.

Part-time associate opportunity. Motivated for skill advancement. Team environment. Multidisciplinary treatment approach in a refurbished practice. Ethical, comprehensive treatment planning skills required. Contact monique@kinsaledental.ie.

Full-time associate required to replace a departing colleague. Initially three days a week with a view to full-time to facilitate transition. Private practice with ortho, implants, hygiene and general dentistry. CBCT, 3D Printer, Cerec, etc. Contact careers@deansgrangedental.ie.

Associate dentist required to share principal's established list. 85% private. One to four busy days available. Flexible position. Winner of Ireland's Most Attractive Dental Practice, intraoral scanner, etc. 60 minutes from Dublin, 80 minutes from Belfast. Accommodation provided. Contact scotty6@gmail.com.

Dental associate required part time (two to three days/week) for busy, friendly practice in the sunny south-east. Modern facilities, fully digitalised with excellent support staff. Please reply with CV to southeastdentist2021@gmail.com.

Associate dentist urgently sought for practice near Dundrum, Co. Dublin. Flexible hours, very friendly staff. Minimum four years' PQE required. Contact dublindentist@gmail.com.

Modern, busy, fully computerised, mainly private family practice in Dublin seeks part-time, experienced, caring dental associate, two to two-and-a-half days per week. Please reply with CV to dublinbaydentalpractice@gmail.com.

Motivated, caring dental associate required for Saturdays in our busy clinic. Experience in endo and basic prostho preferred. CVs to info@cleardentalcare.ie.

Part-time passionate and caring associate required for busy private practice two to three days per week. Great earning potential for right candidate. Reply with CV to dentaljobmayo@gmail.com.

Full-time associate (five days) required to replace established departing colleague. Busy, modern, computerised, mixed practice. Good support staff, friendly atmosphere. Contact hello@ballybrackdental.ie.

Experienced associate required for full-time position in modern practice in Westmeath. January start. Excellent earning potential. 30 minutes from M50. Great patients and excellent support staff. Send CV and cover letter to aidan@kinnegaddental.ie.

Experienced associate required, full-time position in modern practice in Carlow. December or early January start. Excellent earning potential. 30 minutes from M50. Great patients and excellent staff. Fully digitalised. Send CV and cover letter to maddendentalclinic@gmail.com.

Associate required for three to four days in busy Tipperary practice. Loyal support staff and excellent terms for the right applicant. Reply with CV to dentalposition057@gmail.com.

Associate (IDC registered) two days per week in Co. Kerry. Busy, modern and friendly dental practice. Fully computerised, digital X-rays, scanner, I/O camera, sterilisation room. Air sterilisation system (anti-Covid). Great staff. Contact bryanglong@gmail.com.

Part-time associate required for two days a week in modern, long-established, computerised practice with three surgeries, digital X-ray, OPG and Trios scanner. To replace departing associate. North Dublin City. Contact associatenorthdublin@gmail.com.

Experienced associate required for maternity leave cover commencing February 2021. Three days per week (negotiable). Full book. Private-only multi-surgery practice. 40 minutes from Dublin. Excellent facility and staff. Generous remuneration for the right candidate. Contact thadyhayes@gmail.com.

Full-time associate required (Monday to Friday) for a busy, modern, computerised practice in south Dublin. Large, bright, well-equipped surgery. Excellent earning potential. Full book. Excellent support staff. Friendly, relaxed atmosphere. Starting late February. Contact hello@ballybrackdental.ie.

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, March 12, 2021**. 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 appropriate rate.**

Advert size	Members	Non-members
up to 25 words	€80	€160
26 to 40 words	€95	€190

The maximum number of words for classified ads is 40.
If the advert exceeds 40 words, then please contact:
Think Media, The Malthouse, 537 North Circular Road, Dublin 1.
Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie
Please note that all classified adverts MUST come under one of the following headings:

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

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

Experienced, part-time associate for a high-profile, busy practice. Supportive, progressive environment. Well equipped, superb support staff. Endo experience very beneficial. Flexibility crucial. Contact niall@innovativedental.com.

Experienced dental associate required in Kilkenny City. Full-time position in private-only, well-established clinic. Be part of a great multidisciplinary team with many visiting specialists. Excellent backroom support. Cerec, in-house laboratory, digital scanner, CBCT. Please send CV to bpm.gmedical@gmail.com.

Associate dentist required with special interest in cosmetic dentistry in fast-growing Dublin dental practice. Large multidisciplinary team already in place providing general dentistry, ortho, cosmetic, implant and oral surgery. Excellent support staff. Contact hr@3dental.ie.

Associate required for very busy practice in Cavan Town. One hour from Dublin. Full book available replacing departing colleague. Four-surgery modern practice, digital OPG, X-Rays, scanner, etc. Very supportive working environment, great opportunity for the right candidate. Contact frances@railwaydentalsurgery.com.

Part-time associate required from April on Tuesdays 8.00am-4.00pm and Thursdays 10.00am-7.00pm in long-established family practice on Main St., Dundrum, D14. Please send CV to dr.moroney@dentalclinic.ie.

Associate position three to four days/week in a busy, modern two-surgery practice in Co. Laois serving a large area. Principal seeking to reduce days. Competitive remuneration for the right candidate. Excellent support, intra-oral scanner, OPG, computerised. Private, PRSI. Contact neil@orthodental.ie.

Kilkenny City – associate position two to three days a week. Commencing mid-March. Busy, friendly, modern practice. Contact Marketcrossdental@gmail.com.

Experienced associate required for busy practice in Cavan. Full- and part-time options considered. Modern, computerised practice with skilled and friendly support staff. Strong established book. Contact careers@dentalcareireland.ie.

Ailesbury Dental Practice, D4. Experienced associate required three days – Monday/Wednesday/Friday (30hrs/week), replacing departing colleague. Modern, spacious practice, digital X-ray/computerised/Exact, excellent support staff. Email CVs and portfolio to owensroger@hotmail.com.

Associate dentist required in modern, computerised, multi-surgery dental practice in Co. Wicklow, replacing departing colleague. Private and PRSI only. Potential long-term view. Contact positionavailable202@yahoo.com.

Enthusiastic associate needed, Ballincollig, Cork. Two Saturdays a month with scope for more. Lovely, grateful patients, no medical cards, interest in endo/perio welcome. Please email dentalcork2000@gmail.com.

Dentists

Part-time dentist with a view to becoming full-time required urgently for busy north Dublin practice. Contact rahenydentalcentre@outlook.com.

Are you an experienced dentist who genuinely cares about your patients? Would you like to work in a beautiful practice with a great support team and the latest equipment? Get in touch today. Contact ed.oflaherty@seapointclinic.ie.

Dublin – exciting opportunity for a full-time (Tuesdays to Saturdays), experienced GDP to replace departing colleague in multi-surgery practice, with full clinical freedom and excellent support team. Visiting periodontist, oral surgeon, orthodontist and endodontist. Contact helen@portobellodental.com.

Full- or part-time for friendly two-chair practice, Rathgar. Experience in inlays, crowns and implant restorations is a must, RCT advantage. Digital OPG, ceph, periapical X-ray. Visiting orthodontist and implantologist. Potential to principal dentist. Contact ildiko@rathgardental.ie.

Full-time dentist wanted in Wicklow to replace departing colleague. Busy, multi-surgery private practice with excellent staff and digital equipment. Contact info@dentalhub.ie.

Maternity cover March 1 to November 2021, Monday to Friday, nine to five. Will join excellent, friendly team. Experience in Exact software a bonus. North Cork/south Limerick. Contact nualacagney@gmail.com.

Part-time and full-time position available in our flagship branch in Limerick City. Fully private book, lot of restorative/ortho/aesthetic work. CBCT, scanners, etc. Experienced clinicians only please. Contact jobs@alexandradental.ie.

Drogheda – Smiles Dental (part of Bupa Dental) is looking for a passionate dentist to join our well-established, state-of-the-art practice in Drogheda, Co. Louth. Position offers five days per week, established list, great earning potential. Contact joanne.bonfield@smiles.co.uk.

Recently qualified, enthusiastic dentist with interest in orthodontics. Full-time position in a beautiful, state-of-the-art, modern orthodontic and multidisciplinary practice in north Dublin. Excellent working conditions alongside our specialist orthodontist in our fully equipped orthodontic studio. Contact specialistdentalpracticehr@gmail.com.

Full- or part-time dentist required for friendly, two-chair practice. IDC registered, ready to start immediately. Please reply with CV to northdublinclinic1@gmail.com.

Swords – Smiles Dental (part of Bupa Dental) is looking for a passionate dentist to join our well-established, state-of-the-art practice in Swords, Co. Dublin. Position offers five days per week, established list, great earning potential. Contact joanne.bonfield@smiles.co.uk.

Part-time dentist required for maternity cover in busy Galway city centre practice. March-August inclusive. Modern practice, CBCT, fully computerised, endodontics, implants and cosmetic dentistry. CV and covering letter to info@galwaydentalclinic.ie.

Dentist required two days a week, commencing mid-March for five to six months. Busy, friendly practice located in Clonmel, Co. Tipperary. 90% private book. Contact westgatedentalclinic@gmail.com.

Dentist required for maternity cover in Kilkenny city centre practice, commencing mid-March for six months. Three to five days available. Modern practice, fully computerised, OPG. Contact marketcrossdental@gmail.com.

Large practice in south east seeks experienced dentist to replace departing colleague. Excellent career opportunity. Potential long-term view. Ideal for someone in search of work–life balance. Long-established, loyal patient base. Great team. Apply with CV to southeastdentist21@gmail.com.

Dentist wanted with a great personality for busy Cork City practices. All mod cons including digital X-ray. Full book, earning potential up to and over 10k p/w. Full- or part-time available. Position available soon. Contact via email at jobs.gdhd@gmail.com.

Enniscorthy – Smiles Dental (part of Bupa Dental) is looking for a passionate dentist to join our well-established, state-of-the-art practice in Enniscorthy, Co. Wexford. Position offers up to five days per week, established list, great earning potential, initially maternity cover. Contact joanne.bonfield@smiles.co.uk.

Dentists required to join busy facial aesthetics practice. Must be IDC registered. Locations: Waterford, Carlow, Wexford. Training and experience preferable but not necessary. Contact drsana@sitaramedicalclinic.com.

Part-time dentist wanted for busy, bright, modern practice in Greystones. Days negotiable. Full book with lovely patient base. Call Liam for more information on 085-128 0859, or email CV to lsweeney114@gmail.com.

Part-time dentist required for modern dental practice in Swords, Dublin. Flexible hours, immediate start available. Reply with CV to dentalcareersdublin@gmail.com.

Experienced dentist to cover maternity starting early April. Modern, multi-chair, mixed practice, Donegal. Four days/week position (weekdays); minimum three days required. Interest/aptitude in endodontics preferable. Superb team, welcoming atmosphere. Replies to errigaldental@gmail.com.

Full-time dentists required! Very busy practices in Limerick and Tralee, computerised, onsite X-ray, full e-marketing support, competitive percentage. Contact limerick@bio-force.ie.

Part-time dentist required for work in a modern, state-of-the-art clinic in north Dublin. Excellent support staff. Welcoming environment. Contact careers@smilehub.ie.

Full-time dentist required for modern, computerised, friendly and expanding practice. Guaranteed minimum €100k salary with higher earning potential. Own nurse, surgery and any equipment required will be supplied. Please email your CV to northdublindentalclinic@gmail.com.

Locums

Experienced locum dentist sought for January 2021, Navan, Co. Meath. Three days/week – Monday, Tuesday, Wednesday or Friday. Very busy, three-surgery general practice. Periodontist, hygienist. Excellent support team. Exact software. Email gh@bridgeviewdental.ie.

Associate position available Galway. Part-time with flexibility. Busy, modern, friendly practice. Contact locumpositiongalway@gmail.com.

Locum with experience required for part-time position (three days per week) in general practice in Celbridge as cover for maternity leave. Immediate start (January 2021). Favourable private/public ratio. Replies to brian.corcoran26@gmail.com.

Specialist/limited practice

Shields Dental Group in Limerick is seeking an experienced endodontist – full- or part-time role. We are an expanding, modern, dynamic, private dental practice with an extensive patient listing. You will be joining a fun, multidisciplinary team of specialists with a professional support team. CVs to jobs@shieldsdentalclinic.ie.

Shields Dental Group (Limerick) requires an experienced periodontist on a part-time or full-time basis. We are an expanding, modern and private dental practice. You will be joining a dynamic multidisciplinary team of specialists with a professional support team. CVs to jobs@shieldsdentalclinic.ie.

Full-time permanent specialist position in Sydney, Australia. The Department is a centre of excellence in training and service provision. For further details, go to https://jobs.health.nsw.gov.au, search REQ200201, or contact Dr Harleen Kumar at Harleen.kumar@health.nsw.gov.au.

Endodontist sought to join our Dublin general practice team for one day per week with view to full time. Full book and excellent support. Contact dr.shokraei@novadent.ie.

Orthodontist (specialist) with interest in Invisalign, as well as mainly adult orthodontics, needed to join our team for minimum two days per month. Full book and excellent support team provided. Contact helen@portobellodental.com.

Experienced paedodontist required for Shields Dental, a growing private dental group in Limerick and Tipperary. Full-time or part-time. Shields Dental is a multidisciplinary team of specialists who are all involved in mentoring and developing our team. We also offer a professional support team. Established Book. CVs to jobs@shieldsdentalclinic.ie.

Endodontist sought to join our general practice team (with visiting specialists) for two days per month. Full book and excellent support team provided. Contact helen@portobellodental.com.

Oral surgeon: qualified oral surgeon wanted for sessions at busy, modern practice in Swords, Co. Dublin. Existing list of oral surgery and implant cases. Please send CV to colinpatricklynam@hotmail.com, or see www.swords-dental.ie.

Orthodontist: qualified orthodontist wanted for sessions at busy, modern practice in Swords, Co. Dublin. High demand for the service from within the practice. Please send CV to colinpatricklynam@hotmail.com, or see www.swords-dental.ie.

Orthodontic therapists

Orthodontic therapist required in a beautiful, state-of-the-art modern orthodontic and multidisciplinary practice in north Dublin. Excellent working conditions including flexibility on hours and days to suit your personal and family schedule. Free, secure underground parking. Contact Jobs@ncdental.ie.

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Full-time nurse receptionist required for rapidly expanding, busy private practice located in Balbriggan. General and cosmetic dentistry/orthodontics/facial aesthetics. Team player and patient focused with good computer skills. Salary subject to experience. Contact brianjpagni@gmail.com.

Part-time dental nurse required for two-and-a-half to three days. Maternity cover January to September in a busy practice in Bray. Please send CV to jonathandentalfisher@outlook.com or call 01-286 2137.

Full-time nurse receptionist required for a rapidly expanding, busy private practice located in Kilkenny City. General/cosmetic dentistry/specialist ortho/facial aesthetics. Candidate must be a team player, patient focused with good IT skills. Salary subject to experience. Contact shauna@friarycourtdental.ie.

Exciting opportunity for a motivated, dynamic individual to join our team as a part-time nurse/receptionist, in an award-winning practice in Meath. Dental nursing experience +/- qualification, and Exact experience desirable. Contact dentalnursevacancymeath@gmail.com.

Dental nurse/receptionist. Renmore Dental is expanding its team and has full-time vacancy for a highly motivated dental nurse to provide dental assistance and reception duties in our modern dental practice in Galway City. Dental experience essential. Contact aoife@renmoredental.ie.

Part-time, experienced dental nurse required for a modern busy practice in south Dublin. Excellent remuneration for the right candidate. Contact admin@cdpractice.com.

Dental nurse required for maternity cover in busy, friendly dental practice in Tullamore, Co. Offaly. Contact delaneydentist@gmail.com.

Exciting opportunity for a motivated, dynamic individual to join our team as full-time nurse/receptionist in a well-established practice in Castlebar, Co. Mayo. Dental nursing experience +/- qualification, and Exact experience desirable. Email info@tobindental.com.

Deansgrange Dental Clinic requires a full-time dental nurse to join our team. A friendly, positive attitude, good communication skills and work ethic is essential. Please send a cover letter and your CV to careers@deansgrangedental.ie.

Dental nurse/receptionist required for a very busy south city centre dental practice. Pay negotiable for the suitable candidate who must be willing to work hard amicably. Free parking nearby comes with the job. Contact rostrevorp@gmail.com.

Hygienists

Hygienist required to cover maternity leave for nine+ months. Immediate start. Ideally it's a full-time position but we're happy to hear from candidates who can provide cover on a part-time basis. Contact careers@deansgrangedental.ie.

Are you a friendly dental hygienist who wishes to join an award-winning multi-disciplinary team? Frazer Dental, Implants & Orthodontics, requires hygienist for one, two, and three days per week. Accommodation provided. 60 minutes from Dublin, 40 minutes from Newry, 30 minutes from Navan. Contact rachaelfrazer@gmail.com.

Hygienist required for busy, modern, practice, with a great support team in Dublin 24. 8.00am to 2.00pm, Monday to Thursday. Contact adasethsmith@gmail.com.

Hygienist required one day a week in Tipperary for maternity cover. Starting end of January 2021. One day a week. Contact aidanburkethurles@yahoo.ie.

Dental hygienist required for maternity cover, commencing in February. Two days per week in a busy, long-established Dublin practice. Please email your CV to lucandentalcare@gmail.com.

North Dublin. Dental hygienist required two days a week in private practice. Beautiful, modern, fully private practice with lovely patients. Friendly team of dentists and specialists. Contact orthosull@gmail.com.

Galway – Smiles Dental is looking for dental hygienists to join our modern, well-equipped, well-established practices in Galway. Full-time and part-time available with established books and great support teams. Contact Joanne.bonfield@smiles.co.uk.

PRACTICES FOR SALE/TO LET

Kilkenny mediaeval city centre, general practice for sale. First floor leasehold with two operatories and great footfall. Owner retiring. Email dentalpractice3.1415@gmail.com.

North Dublin, less than 10km from city centre. Very suitable premises to rent shell and core at present – 150 square metres. Ground floor, prime, high-profile location. Reasonable rent. Area wide open. Reply in confidence. Contact niall@innovativedental.com.

Dublin south west. Practice to rent in a busy shopping centre. Excellent footfall. Three serviced surgeries, planning permission in place, ready to go. Medical practice and very busy pharmacy next door. Ample free parking directly outside. Reasonable rent. Contact niall@innovativedental.com.

West Dublin, city centre less than 10kms. Two-surgery, private, modern attractive practice. Very busy, walkinable, excellent equipment, including CBCT, great support staff/hygienist. Visiting specialists. High passing trade. Easy parking. Competitively priced. Long-term associate in place. Contact niall@innovativedental.com.

South Dublin. Unit to rent. Excellent location, 2km from St Stephen's Green. Ground floor/first unit. 1,050 sq. ft per floor – Low rent. Ample room for expansion. Very large passing trade. Landlord flexible on lease terms. Contact Niall@innovativedental.com.

Co. Tipperary. Two-surgery, two-dentist, long-established, profitable dental practice for sale. Good patient mix. Hygienist two days. Excellent opportunity in a superb location in large town with free patient parking. Owners retiring. Contact steven@medaccount.ie.

EQUIPMENT FOR SALE

Belmont pro2 kneebreak dental chair for sale. Very good condition. Perfect working order. Only selling as no room in new premises for chair. Also have a new wet-dry suction motor for sale. Open to offers. Contact gormanrc@tcd.ie.

Children's champion

Dr Kirsten FitzGerald is a Consultant Paediatric Dental Surgeon at Children's Health Ireland at Crumlin and the Dublin Dental University Hospital.

What led you to dentistry, and specifically to paediatric dentistry?

Initially I was interested in a career in medicine and surgery, but my experiences as a patient in an orthodontic setting led me towards dentistry. I then decided on specialty training in paediatric dentistry. I trained in Dallas in Texas and came back to Ireland in 2007, and my work now is mainly looking after the oral health needs of children and young people with significant special healthcare needs at Children's Health Ireland at Crumlin. There is a great variety in the patient groups and the work that I do. I feel really lucky to work in that environment with super colleagues and a great team.

I'm also very fortunate and privileged to be able to teach the next generation of paediatric dentists, both in Crumlin and also at the Dublin Dental University Hospital.

What are your specialist/research interests?

I wish I had more time for research, but you can't do everything, and I'm primarily a clinician and a teacher. I have a personal and professional interest in neurodiversity and in particular ADHD and autism, and have undertaken a formal qualification through University College Cork, an online autism studies course. I am very conscious that services for young people with autism across the board are left wanting here in Ireland. In particular, oral health is very much neglected by our health system, aside from the Trojan work of some individuals.

What are the particular challenges for paediatric dentistry in Ireland?

We're really lucky in paediatric dentistry to be growing our workforce. Year on year, the number of specialists is increasing. I also think more families are aware of what we do and what we can offer. But very often those are not the most vulnerable families. We still have a lot of room to increase the profile of the specialty so that more vulnerable children and families can access our expertise. Many of the challenges for my tertiary care team relate to the lack of a universal, transparent, equitable, accessible primary and secondary care system to meet children's needs. Unfortunately, the HSE dental service has suffered from under-investment over the last few decades. There are lots of wonderful individuals and they seem to me to be hamstrung by their circumstances and inadequately resourced to carry out the work that they are trained to do.

What should Government be doing to promote children's oral health?

Regardless of our opinions on the oral health policy, it's out there now and we have to focus on implementation. But to successfully implement its goals, all the stakeholders need to be at the table and equally respected. It's my view that a leader with vision, support and an ability to transform the system will be required to achieve those goals. In Ireland, our political system is driven very much by the wants and demands of our population. Put simply, the wants and demands of our population for dental care, particularly for the vulnerable groups, is not there, so change needs to come not from the grassroots, but from the top down. We need strong leaders advising our Government to get them to commit to a transformative approach to oral health, just like they did with the smoking ban and the plastic bag tax.

How do you think the IDA can contribute?

I think the IDA can build on its tremendous work to date highlighting the importance of child oral health. The publication of its policy on children's health in 2012 was very welcome, and it truly has stood the test of time and remains entirely relevant and appropriate. It's also been great to see the number of publications in the *Journal* relating to paediatric dentistry, and the time given to the specialty at meetings and conferences.

You participated in HSE Leading Care Programme – what did that involve?

Leading Care was modelled on a similar programme in the UK, and funded by the HSE to develop leadership skills across the sector. There are three programmes, Leading Care 1, 2 and 3, and you can choose from these according to what will meet your needs. Having prepared myself pretty well from a clinical knowledge and skills perspective through my training in Dallas, I still felt that I had a lot to learn as a leader. I chose Leading Care 1 because of its personalisable nature, and on a professional and personal level, it has been one of the most formative and rewarding experiences of my life. There is a great focus on leadership style and qualities, and leadership as an ongoing lifelong practice and learning process. I really valued it, and would be happy to talk to anyone who's interested in it.

Like all of us, Kirsten is missing friends during this latest lockdown, but a busy life of work and home schooling, and walking the family's Great Dane puppy, means there's not much time to relax. When she can, she enjoys reading and listening to podcasts, as she likes learning new things, and finding out about different aspects of history and culture.

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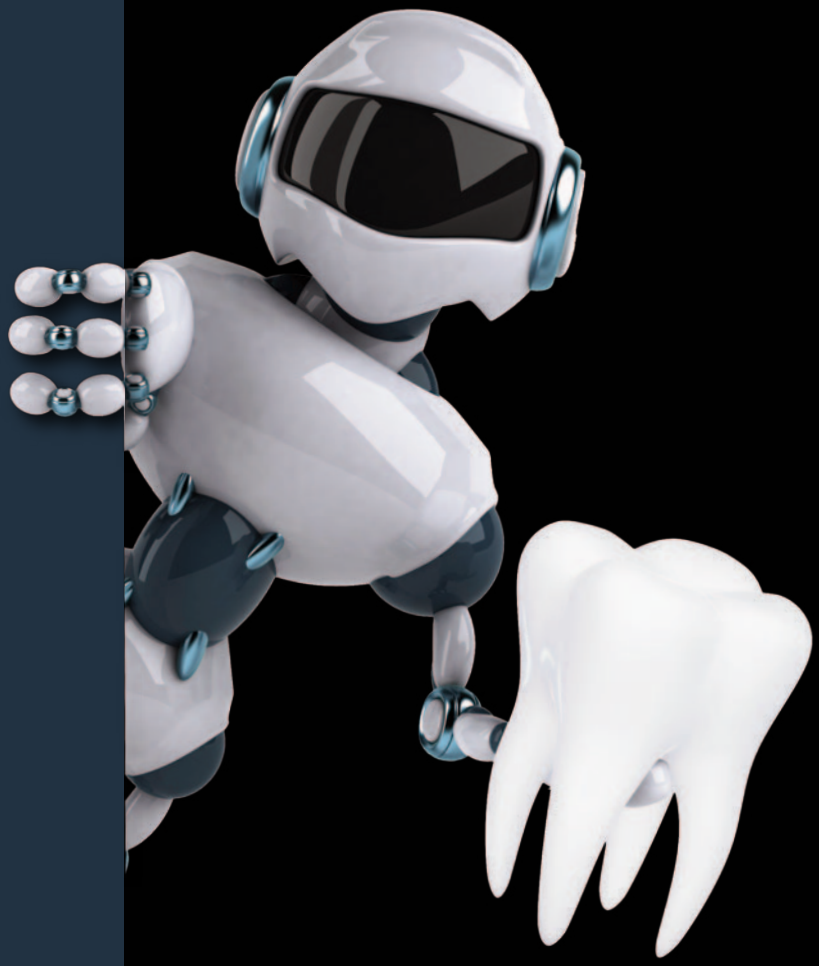
April Friday 16+Saturday 17, 2021



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