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# SPRING 2024

- **05** Editorial: It is time for the Irish Government to act
- **06** Word of mouth: The implications for dentistry of AI
- **08** News: NI amalgam fears; Plans for Ireland's new dental school shelved

# FEATURES

- **16** Future of Ireland's dental service debated
- 21 Ireland pioneers VR-haptics in dental education
- 25 Nitrate in leafy greens study

## CLINICAL

**28** Peri-implantitis therapy; challenges and opportunities

### MANAGEMENT

**33** On partnerships and contracts

### MEET THE REPS

**34** EMS & Southern Implants

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I. Milleman J, et al. Journal of Dental Hygiene. 2022;96(3):21-34. 2. Bosma ML, et al. Journal of Dental Hygiene. 2022;96(3):8-20.





IE-LI-2300023



Will Peakin editor@irelandsdentalmag.ie Follow Ireland's Dental on X at: x.com/IrelandsDental

# The Irish Government must act

News that plans for the new Cork University Dental School and Hospital have been shelved is "devastating"

n the spring of 2020, it was anticipated that work would soon begin on the new €45m Cork University Dental School and Hospital (CUDSH). The vision was for "a leading centre of excellence", according to Helen Whelton, head of the College of Medicine and Health, "providing quality patient care for the community, shaping the dental team of tomorrow through education, research and innovation". The state-of-the-art facilities would provide increased capacity for students,

both national and international, as well as integration and enhancement of key research goals, and enhanced student experience through practical teaching and learning. The existing school and hospital, including the Oral Health Services Research Centre, comprises 5,557m<sup>2</sup> of space; the new development would increase this to 8,710m<sup>2</sup>, over five floors and with adjoining clinical and education/ administration blocks.

The clinical block would house 140 dental chairs across primary dental care, acute emergency care, oral surgery, medicine and radiology, as well as a conscious sedation suite and recovery area. The chairs would also cover special care dentistry, paediatric dentistry, orthodontics and restorative dentistry. The block would contain a postgraduate research and innovation centre, including an oral research/translational research laboratory. There would be an imaging department, a central

decontamination unit, support spaces for clinics, as well as sensory rooms on the ground and upper floors for special care and paediatric dentistry patients. The education and administration block would house a 72-bench simulation laboratory, haptic lab, library, staff offices, administration area and facilities management, café, auditorium, seminar rooms, and staff and student support spaces, including a multifaith prayer room. Whelton added: "It focuses on our

aspirations to significantly expand the postgraduate function and associated research outputs in line with UCC's strategic plan.

# **GG** <u>We have a frail, old building"</u>

- PROFESSOR PAUL BRADY

"That is to deliver an outstanding, student-centred teaching and learning experience with a renewed, responsive, research-led curriculum at its core and to be a leading university for research, discovery, innovation, entrepreneurship, commercialisation and societal impact."

Then came news last month that plans for the new dental school and hospital have been shelved. The pandemic had meant work could not begin on schedule and now rising construction costs have put the project out of reach.

Professor Paul Brady, the Dean, said that remaining at their current location was "untenable". He said: "We have a frail, old building. It's got a leaking roof, and other issues as would be expected of a building that age."

According to a recent study<sup>1</sup>, Ireland has the fewest dentists out of 24 European countries. It is estimated by the Irish Dental Association (IDA) that the number of dentists has decreased by around 25 per cent over the last decade – with eligible patients increasing by 25 per cent over the same period – and that the country currently has a shortfall of around 500.

Only around 90 dental graduates every year from Ireland's two dental schools in UCC and Trinity College.

The IDA has described the news that plans for the new CUDSH had been shelved as "devastating". It is urging the Minister for Higher Education Simon Harris, the Minister for Health Stephen Donnelly, and all relevant Government departments to acknowledge that the dental school can no longer reside in an aging building with outdated equipment – and allocate adequate funding to allow for the original plans to proceed.

We support this view wholeheartedly; the Irish Government must act, and quickly.

1 tinyurl.com/3x8xfc96

# Word of mouth

Dr Paul O' Dwyer BDS MSc (Healthcare Mgmt)

# **ChatGPT or ChatGDP?**

Diagnosis, decision making and treatment outcome prediction are key areas where AI may have the most impact



t the American Dental Association convention in Orlando, Florida, last October, there were two recurring themes: workforce planning and artificial intelligence (AI). It seems every facet of every industry and profession is seeing the effects of AI. It is timely to reflect on

what this could mean for dentistry – and particularly dental practice.

Firstly, the term AI has been around for a long time. According to a recent paper by Ding et al (2023)<sup>1</sup>, one of the better definitions for AI includes "... the theory and development of computer systems able to perform tasks normally requiring human intelligence..." Since the early 1950s, AI has been making headway.

The term AI is usually attributed to a workshop from 1955 led by John McCarthy, Marvin Minsky et al. Over the following decades, and particularly in the 1980s, two distinct pathways were established for AI development: machine learning (ML) and expert systems. Machine Learning allows computers to learn by experience, whereas Expert Systems need human experts to input all possible situations and solutions in advance.

Famous AI examples include the chess-playing expert system called Deep Blue that shocked the world when it defeated Gary Kasparov in 1997. Then some 20 years later, in 2017, Google's own machine AlphaGo, a deep learning (DL) programme, defeated the No 1 ranked Go player Jie Ke in a Go match. If you don't know the game of Go – it's a terrific strategy game developed in China more than 2,000 years ago.

Then in 2022, OpenAI launched ChatGPT (Chat Generative Pre-trained Transformer) as a textgeneration model that can generate human like responses based on text input.

But will ChatGPT eventually create ChatGDP? That is the question!

Among all the potential AI applications in dentistry, the key areas where most experts agree that it will have most impact are diagnosis, decision making and treatment outcome prediction. It's helpful perhaps to look at some areas of dentistry where these impacts can be harnessed and ideally lead to better quality patient care.

**Operative dentistry:** Traditionally dental caries (as we know) is diagnosed through a combination

of visual, tactile and radiographic examination. Early lesion detection Is often challenging with deep fissures, tight interproximal contacts and with secondary lesions present. It is suggested that research into accurate radiographic diagnosis with further follow up could add vital information to collective learning here and –after many hundreds of thousands of data collected – would help to accurately diagnose early caries.

**Periodontology:** Similarly, there is a suggestion that an algorithm can be developed based on extent data which could help to better diagnose early periodontal disease.

**Orthodontics:** AI appears to be the ideal tool here for treatment outcome/prediction with utilisation in planning and simulating changes. These smart algorithms combined with the latest CBCT imaging and 3D modelling hold out much hope for powerful tools in the orthodontic world.

**Oral and maxillofacial surgery**: The many applications being studied include one piece of software which can help distinguish between ameloblastoma and keratocystic odontogenic tumour. The two oral tumours can have similar radiographic features. A recent study using computer generated images (with biopsy results confirming diagnosis) showed an encouraging 83 per cent AI success rate in diagnosis – with a diagnostic time of under one minute.

**Prosthodontics:** CAD/CAM has already changed the way we now deliver crowns and bridges. The future for this and other technologies is in its infancy.

Some say that this is beginning of a new industrial age, with many time and labour-saving technologies such as AI changing the face of many industries, much like the assembly line for Ford or the so called "modern conveniences" that we have learned to accept as part of everyday life.

It is certain that whatever AI may bring to dentistry, the physical delivery of treatment will always remain – in some shape or form. The incorporation of an AI module in the training of tomorrow's dentists or recently graduated dentists, might be one suggestion to better keep ahead of this fast changing field.

### REFERENCE

 Ding H, Wu J, Zhao W, Matinlinna JP, Burrow MF and Tsoi JKH (2023) Artificial intelligence in dentistry—A review. Front. Dent. Med 4:1085251. doi: 10.3389/fdmed.2023.1085251

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# Looking forward to the Show

With a busy exhibition and world-class education programme, SDS 2024 is a must-attend event

**THE** Scottish Dental Show, with more than 130 exhibitors and an education programme featuring 40-plus speakers, is on 31 May – 1 June this year at Braehead Arena, Glasgow.

Exhibitors will be demonstrating the laest technology and developments in detntistry as well sharing best advice in the areas of law, finance and life planning. The education programme features lecture and workshop sessions on more than 20 areas of clinical expertise.

There are also sessions dedicated to Dental Nurses, Hygienists and Therapists, and Practice Managers. The business and finances of dentistry



will be covered by experts in their field. The programme will also include a briefing on the latest in regulation and an update from the Scottish Government on the reform of NHS dentistry.

Speakers include Simon Crewe, Forensic Odontologist, and Brian Millar, Professor of Blended Learning in Dentistry at King's College London.

The programme also covers all eight of the GDC's Highly Recommended and Recommended topics: Medical Emergencies, Disinfection and Decontamination, Radiography and Radiation Protection, Legal and Ethical Issues, Complaints Handling, Oral Cancer: early detection, Safeguarding Children and Young People and Safeguarding Vulnerable Adults.

GDC topic speakers include Nick Beacher, Stuart Clark, Aubrey Craig, Mark Greenwood, Jane Holt, Mike Lewis, Jim McCaul, Christine Park, Emma Riley, Suzanne Riordan and Julie Willis.

The programme can provide up to nine hours of verifiable Continuing Professional Development (CPD) in compliance with the General Dental Council's Enhanced CPD scheme regulations.

www.sdshow.co.uk

# Study highlights dentistry's chronic disease screening potential

**DENTAL** professionals could make a positive difference to public health by being trained to spot some of the key markers of chronic disease, according to a new study.

Researchers from the Royal Liverpool University Dental Hospital and the University of Plymouth oversaw the trial introduction of health screenings during regular dental check-ups in general dental practices. In the UK, up to 11 per cent of the adult population is affected by impaired glucose regulation and nearly half of dental patients aged 45 years and older are at risk of developing diabetes within the next decade.

The study authors said that this indicates the potential benefits and positive impact of implementing diabetes screening in dental settings, particularly for early intervention in Type 2 diabetes. Their study evaluated health screening in dental settings, including patient willingness to accept such a service and recommendations for improvement. The data was gathered from two dental practices located in North West England and the Welsh border region, one a predominantly NHS practice and the other offering a mix of NHS and private dental services.

The data collection spanned August 2020 to November 2021 at the first practice and from February 2021 to January 2023 at the second. At the NHS practice, 4.1 per cent of the 11,200 patients accepted the offer for screening and 6.5 per cent of the 871 patients at the mixed practice.

The screenings included assessments of blood pressure, cholesterol, blood glucose, body mass index (BMI) and waist-to-height ratio – crucial for detecting early signs of cardiovascular diseases and Type 2 diabetes in healthy adults. The selection of these specific screening tests was based on their relevance to oral health and shared risk factors for oral health complications, such as diet and chronic inflammation.

The findings showed that 78.4 per cent of the patients screened had blood pressure readings above the normal range, 55.8 per cent had BMI values that fell outside the healthy range and 16.7 per cent had cholesterol levels that deviated from the healthy range. Elevated blood glucose levels were observed in just over 3 per cent of the patients.

Dr Janine Doughty, the lead author, said: "A health check at the dentist could provide reassurance for many patients, and a wake-up call for others to become healthier. We have someone already sitting in the chair who visits the dentist every six to 12 months yet who may not have seen a GP for years. It is simple to give them a few minutes of health checks at the same time."

# A healthy smile shouldn't cost the Earth

**IN** 2023, nearly 200 dental practices across the UK took part in the new Green Impact Dentistry programme, to take positive action for sustainability and encourage behaviour change within their practice and communities. Following a successful launch, the programme continues in 2024, You can register your practice now for free to work towards a Green Impact award and help to create more just and sustainable dental care.

Green Impact is an excellent way to start or increase your ongoing sustainability efforts. Participating staff can also develop new skills and make a real impact within their role. The programme helps to structure and strengthen your practice's sustainability work and social value, and you can work towards an award to demonstrate your commitment to sustainability at a local and national level.

Any dental practice in Northern Ireland, Scotland or England can register and take part for free. Please contact gidentistry@ sos-uk.org, including your practice name and location, to register your practice. Don't be blinded by other tooth whitening systems!

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# Mums can pass dental decay to newborns

Study suggests new mothers should undergo regular plaque removal

**MOTHERS** with high levels of dental plaque can pass cavity-promoting yeast to their newborns and infants, a new study suggests.

The yeast, *Candida albicans*, is found in the mouths of many healthy babies, but it can play a role in tooth decay in early childhood — a condition known as severe early childhood caries. In addition, the fungus can cause a mouth infection in infants called oral thrush.

Because of these potential health effects researchers investigated *C. albicans* in the mouths of mothers and their offspring, to see if there was a link. Their study<sup>1</sup>, published in the journal *PLOS ONE*, suggests that mothers with a large accumulation of dental plaque are eight times more likely to pass the yeast to their infants than mothers with less plaque on their teeth.

Although babies also pick up *C. albicans* from other sources, not just their mothers, the study emphasises a potential link between a mother's oral health and that of their children.

For the study, researchers took oral samples from 160 mothers and their children between 2017 and 2020. Samples were collected over the course of eight visits, which were conducted during pregnancy, at the time of birth and then up to when the child turned two years old. The scientists sequenced the genomes of organisms in the samples to identify the fungi.

In all, 93 (about 58 per cent) of the mother-child pairs had *C. albicans* in their samples. There were higher levels of *C. albicans* in children later in their lives compared with birth. Notably, 94 per cent of the mothers and children with *C. albicans* in their mouths carried strains that were highly genetically related, suggesting that mothers play a role in transmitting the fungi to their children.

To see how oral health factored in, the researchers used a scale to gauge how much plaque mothers had accumulated on their teeth; the scale rates plaque build-up from zero to three. They found that women who scored two or higher on the scale were eight times more likely to transfer *C. albicans* to their babies than those with lower scores.

The researchers did not investigate exactly how the yeast transfers, but theories suggest that babies may be exposed during delivery, skin-to-skin contact or potentially while feeding. The finding suggests that mothers should consider the effects of their oral health on their children and undergo regular plaque removal, or dental scaling, from a dentist, said the authors.

In addition to plaque accumulation, the researchers looked at other ways in which babies might pick up *C. albicans*. The infants who tested positive for the yeast were more likely to have been fed with a bottle at night when they were two months old, while those without the fungus were more likely to have been exclusively breastfed at 12 and 18 months.

1 Multilocus sequence typing of Candida albicans oral isolates reveals high genetic relatedness of motherchild dyads in early life. Naemah Alkhars, Nisreen Al Jallad, Tong Tong Wu, Jin Xiao. https://journals.plos.org/ plosone/article?id=10.1371/journal.pone.0290938

# Preventative care 'inconsistent'

Study reveals just 34 per cent of oral health professionals always offer advice

THERE are "clear discrepancies" in the understanding of preventative care and it is not being offered consistently to patients across the UK, according to research undertaken by healthcare company Haleon and the College of General Dentistry (CGDent)<sup>1</sup>.

This is despite a high incidence of tooth decay, with 70,000 people treated for the disease in UK emergency departments last year.

Just one third (34 per cent) of oral health professionals said they always offer preventative care advice to patients, while one in four (25 per cent) patients said they weren't given preventative advice during their last dental appointment. The 'Dental Health Barometer' study, which included a survey of 2,000 consumers and 505 dental health professionals, also found that: > More than half (59 per cent) of oral health professionals are

more likely to offer preventative

advice for private patients than NHS patients.

More than a third (37 per cent) of NHS oral health professionals cited time constraints as the top reason for not being able to routinely offer preventative care advice, as opposed to just 15 per cent

of private professionals.

 Oral health professionals differed on the preventative advice they would recommend to patients.

Bas Vorsteveld, General Manager of Haleon UK and Ireland, said: "We know that oral health professionals are facing huge pressures, and we want to help them to provide better preventative advice. We will develop new initiatives to support dental professionals alongside our existing initiatives which include providing educational materials."

<sup>1</sup> cgdent.uk/2023/11/30/new-researchreveals-the-missed-opportunity-ofpreventative-oral-care/

# Amalgam ban 'sends shockwaves'

**THE** European Parliament has voted to ban dental amalgam from 1 January 2025. The British Dental Association (BDA) says it is a decision that will "send shockwaves across already struggling dental services".

Amalgam is the most common material for NHS permanent fillings across the UK. Last July, the European Commission adopted a proposal to revise the Mercury Regulation, to introduce a total phase-out of the use of dental amalgam and prohibit its manufacture and export from the EU from 1 January 2025 – five years earlier than expected.

In a letter to the UK's four Chief Dental Officers (CDOs)<sup>1</sup>, the BDA said that there were currently no alternative restorative materials that compete with amalgam on speed of placement or longevity.

It urged the CDOs to work together to adopt a renewed focus on prevention to reduce the need for dental restorations, work with industry to secure an ongoing supply of amalgam and work with the BDA to ensure that there is no financial impact on dentists from the need to use alternative materials.

"Without action a ban will eat into clinical time and resource that are in short supply, likely creating further access barriers," said a BDA spokesperson.

They said Northern Ireland will be disproportionately affected, not just because of Brexit but because of the state of the health service in the region, the weakest in the UK with the longest waiting lists and the highest use of the filler.

<sup>1</sup>www.bda.org/media/h5ceamgl/letter-on-amalgam-to-cdosjan-2024.pdf



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8 MARCH

IAAD Conference 2024 Hilton Belfast iaad.ie/index.php/2024conference

# 25-27 APRIL

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### 31 MAY-1 JUNE

Scottish Dental Show Braehead Arena, Glasgow sdshow.co.uk

### 23-24 AUGUST

International Conference on Dentistry (Venue TBC, Dublin) waset.org/dentistry-conferencein-august-2024-in-dublin

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# 2025

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Dublin Dental University Hospital adee.org/meetings/dublin-2025

Note: Where possible this list includes rescheduled events, but some dates may still be subject to change.

footprint THE carbon footprint of dental practices has increased significantly, according to a new study<sup>1</sup>. It found that there have

been "notable shifts" in different components, such as increased waste and staff travel. despite a decrease in electricity-related emissions.

Life cycle analysis (LCA) methodology was used to calculate the carbon footprint of a full-time dental clinic operating 220 days a vear.

Compared with a study by the same authors in 2015. the latest calculation shows reduced water use emissions but increased total waste emissions. Staff travel and patient travel continues to significantly impact the CFP, it added.

"The carbon footprint of incinerating mixed dental waste is estimated at 1,552 kg carbon emissions per tonne emphasising the significant environmental impact associated with waste management in dental practices and the need for sustainable waste disposal strategies," said the authors.

They added: "Growing awareness of environmental sustainability is essential. The Intergovernmental Panel on Climate Change's report stresses urgent carbon reductions to limit global warming to 1.5 °C. The NHS in all four countries of the UK aims to be net zero. Dental practices must prioritise sustainability for public health."

1 What is the environmental footprint

s41415-023-6710-z

of a dental practice? A life cycle analysis (Part 1) www.nature.com/articles/

# **Dentistry's** carbon

for a five-storey building in Curraheen. The school was designed and the project went to tender but, because of rising building costs and the pandemic, it was shelved.

"I almost feel it is untenable to stay here," Professor Brady said of the CUH site. "We have a frail, old building. It's got a leaking roof, and other issues as would be expected of a building that age," he said. Equipment also needs

upgrading or replacing, he added. The Higher Education Authority has

recommended investment to boost training places nationally for dentistry, medicine and veterinary courses. Options for achieving this are being examined through the departments of health, agriculture and higher and further education.

investment.

# Revamp of periodontology education planned

UCC drops plans to move

dental school and hospital

**LEADING** international experts have met to discuss a new consensus on teaching periodontology at undergraduate, postgraduate and continuing education levels.

UNIVERSITY College Cork (UCC) has

dropped plans for Cork University Dental

despite its dean warning that the current

building is "untenable" without significant

The change in plans for the school, one

of only two in Ireland, comes amid a national

crisis in dentist numbers. One in six patients

are already waiting over three months for

The school, which treats almost 11,000

campus with Cork University Hospital (CUH).

In 2019, UCC was granted planning permission

routine appointments, the Irish Dental

patients and trains around 50 Irish and

international students annually, shares a

Association recently warned.

School and Hospital to move to a bigger site,

Chaired by David Herrera, Professor of Periodontology at Madrid University, the workshop brought together a selection of specialists from the European Federation of Periodontology (EFP) and Association for Dental Education in Europe (ADEE).

"We identified relevant factors that are impacting education in periodontology since 2009," said Professor Herrera. "Those include the recent recommendations of the World Health Organisation, the new framework for the undergraduate curriculum in dentistry proposed by the ADEE, the impact of teaching and evaluation methods after the COVID-19 pandemic and the recent workshops on the classification and management of periodontal and peri-implant diseases and conditions."

The outcomes of these four days reviewing the latest studies available on this field will be published as a consensus paper in the EFP-edited Journal of Clinical Periodontology later this year.

They are set to shape how periodontology and therapeutics with dental implants are taught in the coming years by any public or private organisation teaching periodontics around the world, including the EFPaccredited postgraduate programmes.



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Dr Pieter Esterhuysen B Med Sci, B CH D, Dip Odontology In Ortho, (Pretoria), PGA Ortho (CoLDS), M Clin.Dent. In Ortho And Dentofacial Orthopedics (BPP)



Dr Rohit Farmah BDS, PG Dip (Clinical Education) RCPSG, PG Cert (Restorative), PG Cert (Orthodontics), MJDF RCS (Eng)



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# A COMPLEX CASE

Reform of Ireland's oral healthcare system is under way, but challenges remain



debate in mid-January was not just a lively exchange of opinions; it was a sobering discourse on the complex challenges and anxieties surrounding oral healthcare in the nation.

The debate painted a stark picture of access disparities within the Irish dental system.

Deputy Mattie McGrath, highlighting the plight of medical card holders, described a system rife with lengthy waiting lists and limited treatment options.

### WORDS WILL PEAKIN

He brought to life the human cost of these shortcomings through the case of Francis, a constituent suffering from severe dental issues due to inadequate access. This personal story resonated with other members, amplifying the call for a more equitable system.

Deputy Cathal Berry echoed McGrath's concerns, adding the dimension of geographic disparity. He pointed out the lack of dentists in rural areas, further isolating vulnerable populations from essential care.

This highlighted the need for a holistic approach that addresses both financial and geographic barriers to access.

While access was a cornerstone of the debate, the discussion transcended mere availability. Deputy David Cullinane challenged the outdated Dental Treatment Services Scheme (DTSS), calling for a comprehensive overhaul.

He championed a preventative approach, advocating for investment in oral health education and early intervention programs.

This shift towards prevention was a recurring theme, highlighting the potential for cost savings and long-term improvements in oral health outcomes.

Deputy Gino Kenny delved deeper into the system's inner workings, questioning the rationale behind certain DTSS limitations and advocating for greater transparency and accountability within the Dental Council.

His emphasis on resource distribution resonated with





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concerns about rural areas and the need to ensure equitable access across the country.

Deputy Stephen Donnelly, the Minister for Health, said that in the previous year more than €200m had been allocated to oral healthcare.

"Everyone needs to have timely access to healthcare for diagnostics and treatment, but there are challenges," he said.

"It is a priority for the Government to address this in the short term, and we are taking action through muchneeded reform.

The salaried public dental service last year provided care to 143,000 adults and children. Those with additional needs who cannot receive care in a general dental practice may receive special services provided by HSE public dental services.

The scheme also provides a targeted programme that includes screening and necessary treatment for children at important stages of development – from six to eight years, between 11 and 16 and, subject to capacity, those aged between nine and 11 years.

Emergency care is also provided to children up to the age of 16 and those with complex and additional needs.

"As we are all aware, coming out of the pandemic, there are backlogs in the targeted screening programme in particular," said Donnelly.

"This is leading to delays in children receiving their first appointment. It is something none of us want. We know early intervention is essential in oral health, and many other parts of healthcare."

What is the Government doing about this? In the budget for this it has allocated €15 million, "an unprecedented allocation," said Donnelly, for a range of measures to protect access to services through once-off funding.

A total of €5 million is being invested on a once-off basis to support the provision of care to eligible children and adults, including addressing the backlogs in targeted primary school class programmes.

On orthodontic services, the public oral healthcare service provided by the State includes orthodontic treatment. It is provided by HSE orthodontists to patients referred before their 16th birthday who have a significant need. More than 10,000 people are currently in active orthodontic treatment funded by the state. Given the nature of treatment, it takes several years to complete.

# **THE CALL FOR A SIGNIFICANT** OVERHAUL OF THE DTSS HAS BEEN HEARD"

### STEPHEN DONNELLY

More than 2,000 of these patients are receiving treatment with a private provider through a procurement initiative.

The Government has allocated €4m in additional funding for that programme for this year. "It will allow us to target those who have been waiting the longest to make sure they get access to treatment and, in some cases, more complex surgical care," said Donnelly.

"Last year, through the DTSS, which is the subject of a lot of debate in the Chamber, the State provided care to more than 360,000 medical card holders.

"I fully acknowledge that more needs to be done and dentists have been leaving the scheme for a variety of reasons. Nonetheless, 360,000 men, women and children received oral healthcare through the scheme last year. It is important we acknowledge the work that was done to that effect." To address contractor concerns regarding the DTSS, interim measures came into effect from 1 May last year. Fees paid to dentists for most treatments were increased by between 40 per cent and 60 per cent.

But Connelly claimed: "Dentists have said they want more and are clearly making more money from private than public patients. They are choosing to spend their time treating private patients over public patients.

"Deputies have raised concerns around the administrative burden faced by dentists, something which has to be looked at.

"One of the things we are not good at is having streamlined processes and easy access for providers. That is something I will take on board and bring back to the Department.

"On the DTSS payments, we looked at November of last year, which is the most recent month for which we have information, versus the previous year.

"What we found is that the level of activity on the scheme is increasing, which is positive. We found that 3,000 more patients received care, year on year, and over 15,000 additional scale and polish treatments were done.

"That treatment is now available to adult medical card holders. It was taken out of the scheme some years ago, but we put it back in. I allocated €10m to the budget for last year and it brought medical card holders in line with people who have PRSI eligibility, and it is good to know that 15,000 extra scale and polish procedures were done as a result. Nearly 2,000 more oral health examinations were also carried out. I fully acknowledge there are difficulties in some parts of the



### Key points from the debate

> Deep concerns about access and affordability: The debate exposed the stark • A push for preventative approaches: The emphasis on oral health long-term solutions.

> Calls for systemic reform: The outdated DTSS and the need for

> Collaboration and accountability: The debate highlighted the importance

### country where many dentists have left the scheme.

"That is a real concern for me and for everyone else in this house. That said, it is positive that a lot more money is being allocated. Fees to dentists have gone up by almost 50 per cent in one year.

"It is also positive that the volume of care being provided, and the number of patients being seen has gone up - but there is more that we need to do.

"We are engaging with the representative body [Irish Dental Association (IDA)], and we need to see how we can bring a lot more dentists back into the scheme.

A sum of €5m has been allocated on a one-off basis to support the HSE's safety net service for adult medical card holders. These are people who need emergency care but who cannot get it through the DTSS.

"I have allocated €5 million for a safety net fund specifically for those patients. [Deputies] have raised issues affecting their constituents in this regard. We need reform," he added.

"The national oral healthcare policy, Smile agus Sláinte, was approved in 2019 but it is fair to say that due to COVID-19, it was not implemented between 2019 and 2022 at anything like the level needed.

"One of the things that was needed was a significant increase in funding. Through last year's budget I allocated extra money to oral healthcare and then in the budget for this year more again to increase services, engage with the representative bodies and reform the DTSS.

"We are also going to start hiring some senior clinical leadership roles into the HSE. The feedback I got from the chief dentist in my department is that while the national strategy is excellent and the money

that was put in place last year and this year to apply the necessary reforms is welcome, we need to have serious senior clinicians within the HSE driving the reform.

"On that basis, I funded those posts through the budget as well. There is a provision of an additional €15m this year to progress implementation of the policy.

"I thank deputies for continuing to raise this issue with me. It is a priority. There has been a big backlog, and we know there are challenges.

"I have allocated a lot of additional funding, and we are now getting on with implementing the national strategy.

"The call for a significant overhaul of the DTSS has been heard and that is something we are undertaking now. I acknowledge that this is urgent and needs to be progressed quickly."

However, not everyone was convinced. Deputy McGrath expressed scepticism about relying solely on the IDA, suggesting a potential conflict of interest and the need for independent oversight and regulation.

This point of contention highlights the complex dynamics within the dental sector and the need for a balanced approach that ensures both collaboration and accountability.

### **Potential policy directions**

> Exploring alternative funding models: Investigating public-private partnerships or innovative financing mechanisms could provide additional resources for the public dental system.

The debate concluded with a renewed call for action and reform. Deputies from across the political spectrum expressed a shared concern about the state of public dental services and a willingness to work together towards solutions.

While the path forward remains unclear, the debate served as a catalyst for further discussion and potential policy adjustments.



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# THE SHEET OF THE S

Integration of VR-haptic tech into Ireland and Northern Ireland's dental curriculum is underway



aptics: the use of technology that stimulates the senses of touch and motion, especially to reproduce in remote operation or computer simulation the sensations that would be felt by a user interacting directly with physical objects." -Robotics@UMass Amhers.

It began with a conversation over a cup of coffee in Kuopio, Finland, at the University of Eastern Finland's Institute of Dentistry. An informal group of university teachers, researchers and dental specialists were discussing the possibilities of virtual reality haptic technologies (VR-haptics) in dental education.

Imagine, as a student, practising and feeling the delicate resistance of a tooth as you drill, the subtle vibration of a scaler against tartar or even the temperature change when polishing a filling; that is the promise of VR-haptics.

Through specialised devices and software, haptic simulators

# WORDS WILL PEAKIN

mimic the physical sensations of real-world dental procedures, creating an immersive and interactive training environment.

One of the group's conclusions was that successful integration into the curriculum would depend on collaboration between 'haptic thinkers' around the world. Last November, a newly established formal group convened at the university – and online – for the first International VR-Haptic Thinkers Meetup<sup>1</sup> involving more than 200 scientists, dentists and students interested in VR-haptics and dental education.

The aims of the meetup were to: • Advance knowledge on the usability of VR-haptics in preclinical, clinical and postgraduate dental training. • Share experimental data, challenges and solutions, and reinforce collaborative capacity initiatives in education and research.

• Engage with universities' policy makers to address the benefits of

->

HAPTICS

VR-haptics in manual dexterity development.

• Bring together those interested in dental education to strengthen the existing partnerships and extend networking.

"From its humble beginnings over a coffee to becoming a global group of VR-haptic thinkers, the journey has been nothing short of remarkable," said a spokesperson following the event. "VR-Haptic Thinkers are only just getting started. We will continue to dream, do crossborder research and work towards free-to-join hybrid meetups – for a future where most dental schools are empowered by the transformative possibilities of VR-haptics."

Dental education traditionally uses well-proven phantom headbased teaching methods and clinical training. But the use of VR-haptics has become more prevalent in dental education in the past few years. Students can practice handling drills, scalers and polishers; experiencing the resistance of different tooth materials and learning to control pressure with precision. This tactile feedback builds muscle memory and dexterity, translating into smoother, more controlled movements when they treat real patients.



In addition to instrument handling, haptic simulators offer an opportunity to practise dental procedures. From preparing cavities to placing fillings and performing root canals, students can rehearse on a variety of virtual teeth with varying textures and densities. The simulators provide real-time feedback on tool placement, pressure and technique, helping students refine their skills and build confidence before stepping into the clinic.

The power of haptic technology extends beyond mimicking procedures. Some advanced simulators integrate virtual X-rays and other diagnostic tools, allowing students to train in identifying dental issues like caries, periodontal disease and even



abnormalities in jaw structure. This immersive approach fosters critical thinking and decision-making skills, preparing students to diagnose and plan treatment for patients in a virtual, risk-free environment.

Its backers say that by implementing VR-haptic dental trainers in preclinical and clinical courses it is possible to improve students' learning curves and outcomes. In addition, they add, studies have shown that students feel that their self-confidence improves after practising within the VR-haptic environment.

Last year, a review of their use in more than 40 universities across China was published<sup>2</sup>. It concluded: "Haptic simulation technology is a valuable complementary tool to the phantom head in dental education. The combined utilisation of these two training devices has been superior to either in isolation.

"However, there is a lack of research on the sequencing of the two systems, as well as the appropriate distribution of curriculum between them. It is necessary for educators to organise or engage in experience sharing, collaboration and knowledge dissemination. These actions are essential for promoting effective teaching within dental educational institutions."

In January, a comparison of the effectiveness of virtual realitybased education and conventional teaching methods in dental education was published<sup>3</sup>. It concluded: "Based on our findings, adding haptic technology to virtual reality can improve students' practical skills, hand skills, theoretical knowledge, selfconfidence and learning environment.

"Although a fair amount of research needs to be done, notably on cost-effectiveness, student satisfaction and other potentially adverse effects, virtual reality is a growing phenomenon with immense potential."



In 2021, Leeds University's School of Dentistry installed haptic simulators running in-house software based on real patients' dental models, including anatomically correct contact points and gingival margins; the first in the world to do so.

In March 2021, the Northern Ireland Medical and Dental Training Agency (NIMDTA) announced the opening of its dental simulation suite, home to 10 VR-haptic training units. Last year, Queens University Belfast ran a pilot study at NIMDTA, involving 55 second year dental students. A range of standardised tasks were undertaken by each student and automatically graded as a pass or fail by the trainer using set criteria.

These selected tasks were analogous to those carried out by 2BDS students in the Clinical Techniques Laboratory. Cavity preparation dimensions and iatrogenic damage were measured and scored. To obtain feedback on the training units, an anonymised

# HAPTICS

questionnaire was completed by the students at the end of the VR teaching sessions.

Outcomes included: •93 per cent (51 students) felt the training session improved their visual-motor skills. •95 per cent (52 students) felt using Simodont in the future would improve their preclinical skills. •95 per cent (52 students) thought of Simodont as a useful educational

tool in UG dental training programs. "It is clear the majority of 2BDS students found [the trainer] helpful in pre-clinical dental skills training," commented one of the authors. "Using this technology has shown to be beneficial and more sustainable for 2BDS students' progression from simulation to reality on patient clinics."

NIMDTA's launch of its dental simulation suite coincided the adoption of haptic trainers by Leeds University. The working relationship between the units' makers and the school's digital dentistry group meant their introduction was informed by the needs and use-cases identified at Leeds.

World-leading, in-house software has led to Leeds being the first dental school in the world to offer custom haptic training cases based on real patients' dental models, including anatomically correct contact points and gingival margins; both crucial during the preparation of crowns. The simulators also offer haptic cases aligned to the bespoke 3D printed training models currently used in the preclinical skills laboratories, with additional cases lined up to be produced, physically and virtually, going forward.

Future work will focus on expanding students' clinical awareness of the high biological variation encountered in root canal morphology by presenting a catalogue of true, scanned tooth root morphologies, enabling students to gain an understanding of natural variation within endodontics. To support this work, the school invested in a new nano CT scanner.

Paul Coulthard, the then Dean, described the investment in 42 VRhaptic training units – understood to be the highest number installed by any dental school in the world – as "transformational".

He added: "The scale allows us to fully integrate artificial intelligence (AI) learning into our undergraduate curriculum and postgraduate training. Importantly we can undertake pedagogical research to fully explore the advantages for learning and patient benefit."

At the VR-Haptic Thinkers Meetup, Professor Barry Quinn, Secretary General of the Association of Dental Education in Europe (ADEE), said simulation had become an indispensable tool in the training of dental and medical students. "We should not be sending any of our students to do a procedure for the first time on a patient," he said.

Associate Professor Marjoke M Vervoorn, of the Academic Centre for Dentistry Amsterdam (ACTA), added: "Technology enables users to collect data on performance and thus is a valuable tool in enhancing quality assurance." Lectures and ePosters from the first meetup can be viewed here: vr-hapticthinkers.com/meetups

Both the ADEE (adee.org/ january-2024) and the American Dental Education Association (ADEA) will be supporting the formation and future meetings of the VR-Haptic Thinkers network.

The second meet-up, 'VR-Haptic Dentistry, Pedagogy and Curriculum Evolution', is planned for later this year: **bit.ly/4bMPdlM**.

Latest speakers have been announced here: **bit.ly**/**49NMOAT** 

### REFERENCES

<sup>1</sup>tinyurl.com/mscfue64

<sup>2</sup>Application of virtual reality and haptics system Simodont in Chinese dental education: A scoping review onlinelibrary.wiley.com/ doi/10.111/eje.12984

<sup>3</sup>Comparison of the effectiveness of virtual reality-based education and conventional teaching methods in dental education: a systematic review pubmed.ncbi.nlm.nih. gov/38172742/



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suming lettuce juice for two wee<mark>ks was found to reduce</mark> gum inflammation and increase healthy bacteria levels

Eating leafy greens could be better for oral health than using mouthwash, according to a new study



ore than half the adult population in the UK and US<sup>1</sup> have gum disease. Typical treatments include mouthwash<sup>2</sup> and in severe cases, antibiotics<sup>3</sup>. These treatments have side effects, such as dry mouth, the development of antimicrobial resistance<sup>4</sup> and increased blood pressure<sup>5</sup>.

But research has indicated that a molecule called nitrate<sup>6</sup>, which is found in leafy green vegetables, has fewer side effects and offers greater benefits for oral health. And it could WORDS MIA COUSINS Burleigh And Siobhan

AND SIOBHAN Paula Moran be used as a natural alternative for treating oral disease. Inadequate brushing and flossing

leads to the build-up of dental plaque<sup>7</sup>, a sticky layer of bacteria, on the surface of teeth and gums. Plaque causes tooth decay and gum disease. Sugary and acidic foods, dry mouth, and smoking can also contribute to bad breath, tooth decay and gum infections.

The two main types of gum disease are gingivitis and periodontitis. Gingivitis<sup>8</sup> causes redness, swelling and bleeding of the gums. Periodontitis<sup>9</sup> is a more advanced form of gum disease, causing damage to the soft tissues and bones supporting the teeth.

Periodontal disease can, therefore, lead to tooth loss and, when bacteria from the mouth enter the bloodstream, can also contribute to the development of systemic disorders<sup>10</sup> such as cardiovascular disease, dementia, diabetes and rheumatoid arthritis.

# Leafy greens may be the secret

Leafy greens and root vegetables are bursting with vitamins, minerals, and antioxidants<sup>11</sup> – and it's no secret that a diet consisting of these vegetables is crucial for maintaining a healthy weight, boosting the immune system, and preventing heart disease, cancer and diabetes<sup>12</sup>. The multiple health benefits of leafy greens are partly because spinach, lettuce and beetroots are brimming with nitrate<sup>13</sup>, which can be reduced to nitric oxide by nitrate-reducing bacteria inside the mouth.

Nitric oxide is known to lower blood pressure<sup>14</sup> and improve exercise performance<sup>15</sup>. However, in the mouth, it helps to prevent the overgrowth of bad bacteria and reduces oral acidity<sup>16</sup>, both of which can cause gum disease and tooth decay.

As part of our research on nitrate and oral health, we studied competitive athletes<sup>17</sup>. Athletes are prone to gum disease<sup>18</sup> due to high intake of carbohydrates – which can cause inflammation of the gum tissues – stress, and dry mouth from breathing hard during training.

Our study showed that beetroot juice (containing approximately 12 millimole<sup>19</sup> of nitrate) protected their teeth from acidic sports drinks and carbohydrate gels during exercise – suggesting that nitrate could be used as a prebiotic by athletes to reduce the risk of tooth decay.

Nitrate offers a lot of promise as an oral health prebiotic<sup>20</sup>. Good oral hygiene and a nitrate-rich diet could be the key to a healthier body, a vibrant smile and diseasefree gums. This is good news for those most at risk of oral health deterioration such as pregnant women<sup>21</sup> and the elderly<sup>22</sup>.

In the UK, antiseptic mouthwashes containing chlorhexidine<sup>23</sup> are commonly used to treat dental plaque and gum disease. Unfortunately, these mouthwashes are a blunderbuss approach to oral health, as they indiscriminately remove both good and bad bacteria and increase oral acidity, which can cause disease.

Worryingly, early research also indicates that chlorhexidine may contribute to antimicrobial resistance<sup>24</sup>. Resistance occurs when bacteria and fungi survive the effects of one or more antimicrobial drugs<sup>25</sup> due to repeated exposure to these treatments. Antimicrobial resistance is a global health concern<sup>26</sup>, predicted to cause 10 million deaths annually by the year 2050.

In contrast, dietary nitrate is more targeted. Nitrate eliminates diseaseassociated bacteria, reduces oral acidity and creates a balanced oral microbiome<sup>27</sup>. The oral microbiome



# NITRIC OXIDE IN THE MOUTH HELPS PREVENT The overgrowth of bad bacteria and Reduces oral acidity"

refers to all the microorganisms in the mouth. Nitrate offers exciting potential as an oral health prebiotic<sup>28</sup>, which can be used to prevent disease onset or limit disease progression.

# How many leafy greens for pearly whites?

So how much should we consume daily? As a rule of thumb, a generous helping of spinach, kale or beetroot at mealtimes contains about 6-10 mmol of nitrate and offers immediate health benefits.

Work we have done with our collaborators has shown that treating plaque samples<sup>29</sup> from periodontal disease patients with 6.5 mmol of nitrate increased healthy bacteria levels and reduced acidity. For example, consuming lettuce juice<sup>30</sup> for two weeks reduced gum inflammation and increased healthy bacteria levels in patients with gum disease.

Growing evidence suggests that nitrate is a cornerstone of oral health. Crunching on a portion



of vegetables at mealtimes can help to prevent or treat oral disease and keeps the mouth fresh and healthy.

Mia Cousins Burleigh is a Lecturer and Siobhan Paula Moran a PhD candidate at the School of Health and Life Sciences, University of the West of Scotland.

This article was first published by *The Conversation*<sup>31</sup>.

### References:

1 www.pubmed.ncbi.nlm.nih.gov/26052472 2 www.nature.com/articles/s41598-020-61912-4 3 www.magonlinelibrary.com/doi/abs/10.12968/vetn.2017.8.10.542 4 www.pubmed.ncbi.nlm.nih.gov/30967854/ 5 www.nature.com/articles/s41598-020-61912-4 6 www.nature.com/articles/s41598-020-69931-x 7 www.nature.com/articles/s41598-020-69931-x 8 www.spandidos-publications.com/10.3892/etm.2019.8381 9 www.spandidos-publications.com/10.3892/etm.2019.8381 10 www.nature.com/articles/bdjteam2015163 11 www.sciencedirect.com/science/article/pii/S2666149723000312 12 https://journals.sagepub.com/doi/10.1177/2048004016661435 13 www.nature.com/articles/s41598-020-69931-x 14 www.sciencedirect.com/science/article/abs/pii/ S0006295222004191 15 tinyurl.com/ytwrjdud 16 tinvurl.com/vtwridud 17 https://journals.plos.org/plosone/article?id=10.1371/journal. pone.0243755 . 18 www.ncbi.nlm.nih.gov/pmc/articles/PMC9839431 19 www.nursingtimes.net/students/an-easy-guide-tommols-09-02-2012 20 www.nature.com/articles/s41598-020-69931-x 21 www.news-medical.net/health/Periodontitis-and-Pregnancy.aspx 22 www.ncbi.nlm.nih.gov/pmc/articles/PMC8771712 23 www.nature.com/articles/s41598-020-61912-4 24 www.pubmed.ncbi.nlm.nih.gov/30967854 25 www.ncbi.nlm.nih.gov/pmc/articles/PMC4768623 26 www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02724-0/fulltext 27 www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02724-0/fulltext 28 www.nature.com/articles/s41598-020-69931-x 29 www.nature.com/articles/s41598-020-69931-x 30 https://aap.onlinelibrary.wiley.com/doi/full/10.1002/JPER.20-0778 31 https://theconversation.com/eating-leafy-greens-could-bebetter-for-oral-health-than-using-mouthwash-221181

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# A conceptual review on reconstructive peri-implantitis therapy: challenges and opportunities

Amanda Rodriguez Betancourt, Patrick R. Schmidlin.

### Introduction

Oral implants are a widespread solution for restoring oral function and aesthetics, with a growing number of patients receiving at least one implant; however, while the overall outcomes are promising, a significant subset of implants, estimated to be between 10 per cent and 20 per cent, experience peri-implantitis, a destructive inflammatory process affecting both soft and hard tissues around dental implants<sup>1</sup>. Peri-implant mucositis, characterised by soft tissue inflammation without pathologic bone loss, and peri-implantitis, characterised by both soft and hard tissue manifestations, are the primary two types of inflammatory peri-implant diseases classified by recent research<sup>2</sup>.

The diagnosis of peri-implantitis is based on various criteria, including the depth of probing exceeding 6mm, bleeding on probing, and/or the presence of suppuration/ pus. Without a baseline radiograph for comparison, bone loss of more than 3mm indicates peri-implantitis, compared to 2mm when a baseline radiograph is available<sup>3</sup>. The prevalence of peri-implantitis varies in the literature, primarily due to differences in population and disease definition. Peri-implantitis is believed to be caused by bacterial pathogens in susceptible individuals, leading to the loss of supporting bone and eventually, the implant, causing a significant financial burden and affecting patients' welfare<sup>4</sup>.

Like periodontitis, peri-implantitis is still primarily treated following periodontal surgical strategies to halt disease progression and rescue the implant. While nonsurgical therapy in combination with proper oral hygiene reinforcement remains a basic standard of care and the first step, surgical measures are required in advanced cases since nonsurgical protocols with an adjunctive or alternative failed to demonstrate efficacy in resolving the disease<sup>5</sup>. From a surgical perspective, regeneration is desirable as it has the potential to restore the function and architecture of lost tissues.

The literature reports the efficacy of reconstructive procedures, with mixed results. Systematic reviews show that the average bone gain is 2–3mm; however, there is still a good portion of cases that are not resolved. Wide variations in reported results may be attributed to the heterogeneity in the severity and variation of the disease, selection of surgical techniques and materials, surface decontamination methods, surgeons' skills, and other factors<sup>6</sup>.

There is a need to identify the obstacles to effectively and predictably regenerate peri-implant tissues from biologic and biomechanical viewpoints to develop meaningful research strategies and evidence-based treatment protocols<sup>7</sup>. While most work in this field focuses on biomaterials and related surgical topics, the primary aim of this manuscript is to discuss relevant biological and biomechanical challenges of treating peri-implantitis based on the surgical biological regeneration principles. Strategies to overcome these challenges are suggested for future validation with research and clinical evaluations and modifications in the upcoming sections.

# Challenges of reconstructing peri-implant tissues

Tissue perfusion	<ul> <li>Scar-like tissues at baseline.</li> <li>Interrupted nutritional diffusion from bone.</li> <li>Avascular implant underneath.</li> <li>Compromised microvasculature after tissue releasing.</li> </ul>
Bony topography	<ul> <li>Higher incidence of non-contained defect.</li> <li>Reduced progenitor cell resource.</li> </ul>
Implant surface decontamination	<ul> <li>Calcified deposits on implant surface.</li> <li>Inaccessible macrostructure.</li> <li>Rough surfaces in micro-scale</li> </ul>
Biomechanical wound stability	<ul> <li>Inflamed wound edge with weakened tensile strength.</li> <li>Limited keratinised mucosa.</li> <li>Soft tissue flap recoil.</li> <li>Unstable biomaterials.</li> <li>A challenge to obtain primary wound closure.</li> </ul>

Table 1: Descriptive challenges on

peri-implant reconstructive procedures.

### **Postoperative tissue perfusion**

One of the most common postoperative complications of oral tissue reconstruction is soft tissue dehiscence at the wound edge, resulting in sustained inflammation, disrupted granulation tissue formation, epithelial down growth, and loss of biomaterials<sup>8</sup>. These negative events eventually increase the risk of converting



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- Patient input you can tell your dentist what you are looking to improve in your smile, which is incorporated into the design and highlighted during the 'smile trial'
- High quality through our Signature Smile stents, your dentist can faithfully reproduce your new smile design into your mouth
- Inexpensive compared to porcelain restorations, Signature Smile can give you results similar to porcelain veneers for a fraction of the price
- Repairability if you incur any damage to your Signature Smile teeth, it is very straight forward to repair your original specification

# Introducing Mary Catherine

Mary Catherine is an Enniskillen native, who was initially drawn to dentistry because of her interest in art and design. After graduating from



undergraduate study at Queens University Belfast, Mary Catherine moved to Edinburgh where spent time honing advanced skills within specialist departments; specifically, special care dentistry, paediatric dentistry, oral and maxillofacial surgery and restorative dentistry.

Following training in Restorative and Surgical specialities, Mary Catherine provides advanced dental treatment such as dental implants, surgical extractions, crown and bridgework. At present her most popular treatment is the Align, Brighten and Contour procedure, which entails Invisalign, Whitening and Composite Bonding, a skill that she honed by learning from Dr Monik Vasant.

Building on a knowledge base of surgical and restorative techniques, Mary Catherine is currently undertaking training in dental implantology, and is on course to complete a postgraduate diploma in 2023. She is also studying for a master's degree in advanced aesthetic restorative dentistry, accredited by the University of Portsmouth.

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to unfavourable clinical outcomes. Insufficient tissue perfusion at the wound edges might have partially accounted for wound opening<sup>9</sup>. Most of the periodontal/peri-implant tissue perfusion arises from the supra-periosteal plexuses (SPP) at the base of the flap<sup>10</sup>. The latter reduce in number and diameter as they travel from the lining mucosa to the attached mucosa (Figure 1).



Figure 1: Tissue perfusion in the peri-implant tissues. Arterioles have an apico-coronal direction and they can be intraosseous, supraperiosteal, and in the peri-implant soft tissue. The vessel dimension and density decrease when they pass to the mucogingival junction. They have a parallel orientation with the implant. Only small anastomoses of the arterioles reach the mucosal margin and the peri-implant crestal bone.

In other words, the attached mucosa/keratinised mucosa is less perfused and is vulnerable to ischemia and necrosis under normal conditions<sup>11</sup>.

However, from biomechanical point of view, a minimal amount of this type of tissue is needed to facilitate suturing and wound closure. Specifically for peri-implant tissues, preclinical studies have shown they are essentially scar tissues with less vascularisation and cellularity, compared to the periodontium<sup>12</sup>. Therefore, the baseline peri-implant tissue perfusion is already at its disadvantage. After flap reflection, the microvasculature communicating between the hard and soft tissue interface is disrupted<sup>13</sup>.

During the first few days of healing, nutrient diffusion from the bone to the soft tissue also serves the role of sustaining the flap vitality. With placed biomaterials in between the residual bone and soft tissue flap and the presence of an avascular implant underneath the flap, this diffusion is compromised. What might further compromise the tissue perfusion is the tissue-releasing steps that are performed to allow for coronal advancement of the flap<sup>14</sup>.

These releasing steps, either the periosteal scoring, the pouch technique, or vertical incisions, have the potential to disrupt the microvasculature. These aspects might contribute to insufficient tissue perfusion at the wound edge after the reconstructive procedures that result in wound dehiscence and unpredictable outcomes (Table 1).

### Bone defect morphology

Bony topography surrounding infected implants is a basic factor, which determines the intrinsic conducive potential leading to defect regeneration. Such defects typically comprise suprabony and infrabony components (Figure 2).

Regarding the infrabony component, bone loss patterns usually involve circumferential loss, affecting both interproximal and facial bones. In some cases, the palatal/lingual bone is also lost. These defects tend to be wide, ranging from approximately 1.5–2mm. The creation of such dimensions results from the body's attempt to isolate the source of infection at the expense of losing peri-implant bone volume<sup>15</sup>.

Regenerating these types of defects typically requires a combination of vertical and horizontal bone augmentation, which has been challenging even for augmenting the alveolar ridge or around pristine implants. Especially, the presence of the suprabony bony component makes bone reconstruction even more challenging<sup>16</sup>. Currently, regenerating the bone loss coronal to the interproximal crestal bone is not possible<sup>17</sup>.

Thus, the regeneration potential of such defects is determined by the relative spatial relationship between the implant platform and the interproximal crestal bone. Complete recovery of the bony defect around the implant may be only possible if the interproximal bone remains coronal to the platform; otherwise, the suprabony component of the implant is not expected to be covered by bone even after a successful procedure.



Figure 2: Bony topography surrounding infected implants. The left image shows a vertical defect with an infrabony component and a small suprabony component (a cyan arrow shows the space between the implant platform and the bone crest). The right image shows a horizontal defect without an infrabony component (a cyan arrow shows the suprabony defect above the bone crest).

From a biological concept of peri-implant osseous formation, reconstruction requires the presence of bone-forming/progenitor cells in the surrounding vicinity of the defect, since progenitor cells can only derive from the remaining bone tissues<sup>18</sup>. The distance between the residual bone and the implant, along with missing bone walls, may limit the source of boneforming cells critical for bone reconstruction in periimplant defects. Therefore, defects with missing bone walls and wide defects present a significant challenge for predictable bone reconstruction, which is usually the case in clinical scenarios.

A crucial step in peri-implant treatment lays in adequate defect cleaning. The focus is put on the degranulation of the soft tissue-filled defect on one side and the decontamination of the affected exposed implant on the other side. The implications and consequences of removing granulation tissue on the healing process have been evaluated in various ways over time. As a typical example, granulation tissue is formed after tooth extraction and bears the notable and important potential to differentiate into autologous bone and filling up even empty defects.

While it is obvious from a practical point of view that granulation tissues need to be removed, especially whenever defects are compensated with fillers, complete removal of it has also been questioned since multipotent progenitor stem cells can be even identified in infected granulation tissues. Therefore, the common practice of removing all granulation tissue during bone surgery may also result in the removal of vital multipotent stem cells that could lead to favoured tissue healing if retained.

Studies have also assessed nonsurgical debridement and local detoxification leaving deliberately granulation tissue in the peri-implant pockets, and periodontal tissues with promising results, however further longitudinal studies are required.

A closer look at histology taken from excised material from pathologically altered peri-implant soft tissues highlights the crucial role of histological analysis, understanding, and diagnosing peri-implant defects. Figures 3-5 depict fragmentary overviews and histologic



Figure 3: Clinical situation of a peri-implant defect after degranulation and cleaning (left), along with a biopsy fragment overview and histology (middle). The right image focuses on a detailed view of foreign material using light-optical birefringence.



Figure 4: Histologic image capturing an excised sample from another case, revealing the presence of bone fragments (dark staining).

# <u>A CRUCIAL STEP IN PERI-IMPLANT TREATMENT Lies in Adequate Defect Cleaning"</u>

highlighting different foreign bodies and bacterial aggregates, which themselves showcase the potential role of histological analysis in diagnosing peri-implant defects, underscoring the need for accurate assessment of tissue composition and structure to determine the severity and nature of the defect, enabling personalised treatment planning and intervention.

In this context, one must therefore keep in mind that leaving granulation tissues behind potentially increases the risk of leaving non-vital foreign material with pathogenic character and potential, as well as leaving infectious material that challenges the immune system and complicates healing.

In addition, remaining granulation tissues also interfere with the proper dental implant surface debridement, inspection, and control; the access to the implant surface is restricted in addition by the location in the oral cavity, the bony wall configuration (width and depth), and implant supra-structure, which also limit the ability to effectively reach and decontaminate the implant surface. System-inherent thread designs of modern implants create crevices that are difficult, if not impossible, to reach with currently available armamentarium.

Even under optimal in vitro conditions, instruments display unprocessed areas depending on the implant designs; in addition, titanium remnants can be found in the surrounding tissues, especially after treatment with mechanically more aggressive instruments, which then leads to the controversially discussed and anticipated unwanted biological sequelae.

Beside inevitable soft deposits, that is, biofilms, a second challenge is the presence of calcified deposits, which may adhere to the implant surface. Simple chemical treatment or mechanical blasting with glycine or erythritol is insufficient to remove such calcified



Figure 5. Histological example demonstrating the accumulation and aggregation of bacteria resembling actinomycosis.



deposits. The inability to visualise these concerns, including vital biofilms with our naked eyes or loupes represents a significant challenge. Bleeding may additionally interfere with proper visual control. Without proper access/visual, effective decontamination is like finding a needle in a haystack.

In summary, effective surface decontamination remains a major obstacle for reconstructive periimplant tissues resulting from periimplantitis. But even after ideal defect degranulation and decontamination, reosseointegration may not be an attainable and realistic goal; rather the aim is to recreate a biocompatible implant surface that allows for inflammation resolution, bone reapproximation, and the elimination or reduction of peri-implant pockets to a maintainable status.

### **Postoperative wound stability**

Stable tissue support is crucial to facilitate the reconstruction of periodontal or peri-implant defects. There are essential biological principles and conditions that can unleash the innate potential of the tissues to attain optimal reconstruction, especially when flaps are mobilised coronally and maintained in a new position for adequate wound coverage, while biomaterials must be immobilised for bone conduction and maturation.

The basic principles encompass the biological trinity of space provision, wound stability, and optimised conditions for primary intention healing. Therefore, the final success of reconstructive procedures, especially in the critical periimplant wound system, lies in long-term stable, vital, and infection-free soft tissue conditions after surgery.

Clinicians are aware of multiple factors, which may hamper the desired tissue stability in an already critical and fragile system. We know that sustained and non-resolving inflammation results in reduced collagen content and inferior tissue quality, leading to weakened tissue tensile strength. Secondly, limited keratinised mucosa width, particularly following prior tissue destruction due to periodontitis, is associated with a higher incidence of wound dehiscence after reconstructive procedures. Thirdly, soft tissue flaps tend to return to their original position due to viscoelastic properties, muscle pulls, and postoperative swelling. Finally, biomaterials are typically mobile unless fixation methods are employed, which can lead to soft tissue invagination and decreased opportunity for consolidation and maturation.

The interrelationships between residual bone topography, quality/ quantity of soft tissue flaps, macroand microstructures of implant surfaces, and mechanical properties of biomaterials placed are critical in determining the success of reconstructive procedures around infected implants.

These factors are interconnected and must be considered together, including the size of suprabony defects that may be related to the amount of coronal flap advancement needed for primary closure, which in turn affects the blood perfusion and biomechanical properties of the soft tissue. Balancing conflicting factors is also essential, as extensive flap release can compromise tissue perfusion.

The critical and profound understanding of the influencing factors that negatively affect wound stability is crucial in the development of successful reconstructive procedures for peri-implantitis. A comprehensive approach that considers all the interrelated factors is necessary to achieve predictable outcomes.

For discussion and conclusion see www.sdmag.co.uk/reconstructiveperiimplantitis-therapy

### References

1 Alghamdi, H. S., & Jansen, J. A. (2020). The development and future of dental implants. Dental Materials Journal, 39(2), 167–172.

2 Derks, J., Schaller, D., Håkansson, J., Wennström, J. L., Tomasi, C., & Berglundh, T. (2016). Effectiveness of implant therapy analyzed in a Swedish population: Prevalence of peri-implantitis. Journal of Dental Research, 95(1), 43–49.

3 Heitz-Mayfield, L. J. A., & Salvi, G. E. (2018). Peri-implant mucositis. Journal of Periodontology, 89(Suppl. 1), S257–S266.

4 Schwendicke, F., Tu, Y. K., & Stolpe, M. (2015). Preventing and treating peri-implantitis: A cost-effectiveness analysis. Journal of Periodontology, 86(9), 1020–1029.

5 Ramanauskaite, A., Fretwurst, T., & Schwarz, F. (2021). Efficacy of alternative or adjunctive measures to conventional non-surgical and surgical treatment of peri-implant mucositis and peri-implantitis: A systematic review and meta-analysis. International Journal of Implant Dentistry, 7(1), 112.

6 Tomasi, C., Regidor, E., Ortiz-Vigón, A., & Derks, J. (2019). Efficacy of reconstructive surgical therapy at peri-implantitis-related bone defects. A systematic review and meta-analysis. Journal of Clinical Periodontology, 46, 340–356.

7 Solderer, A., & Schmidlin, P. R. (2020). Regenerative surgical therapy of peri-implantitis: An umbrella review of answered/unanswered questions and future perspectives. Frontiers in Dental Medicine, 1, 614240.

8 Naenni, N., Lim, H. C., Papageorgiou, S. N., & Hämmerle, C. H. F. (2019). Efficacy of lateral bone augmentation prior to implant placement: A systematic review and meta-analysis. Journal of Clinical Periodontology, 46, 287–306.

9 Fugazzotto, P. A. (1999). Maintenance of soft tissue closure following guided bone regeneration: Technical considerations and report of 723 cases. Journal of Periodontology, 70(9), 1085–1097. 10 Rodriguez Betancourt, A. B. V. D., & Chan, H. L. (2023). Review of intraoral vasculature and implications on incision designs of periodontal and implant surgeries. International Journal of Periodontics & Restorative Dentistry, 43. In press.

11 Retzepi, M., Tonetti, M., & Donos, N. (2007). Gingival blood flow changes following periodontal access flap surgery using laser Doppler flowmetry. Journal of Clinical Periodontology, 34(5), 437–443.

12 Sculean, A., Gruber, R., & Bosshardt, D. D. (2014). Soft tissue wound healing around teeth and dental implants. Journal of Clinical Periodontology, 41, S6–S22.

13 Hagenaars, S., Louwerse, P. H. G., Timmerman, M. F., Van der Velden, U., & Van der Weijden, G. A. (2004). Soft tissue wound healing following periodontal surgery and EmdogainR application. Journal of Clinical Periodontology, 31(10), 850–856.

14 Shaikh, M. S., Zafar, M. S., Pisani, F., Lone, M. A., & Malik, Y. R. (2021). Critical features of periodontal flaps with regard to blood clot stability: A review. Journal of Oral Biosciences, 63(2), 111–119.

15 Monje, A., Insua, A., & Wang, H.-L. (2019). Understanding peri-implantitis as a plaque-associated and site-specific entity: On the local predisposing factors. Journal of Clinical Medicine, 8(2), 279.

16 Jepsen, K., Jepsen, S., Laine, M. L., Anssari Moin, D., Pilloni, A., Zeza, B., Sanz, M., Ortiz-Vigon, A., Roos-Jansåker, A. M., & Renvert, S. (2016). Reconstruction of peri-implant osseous defects: A multicenter randomized trial. Journal of Dental Research, 95(1), 58–66.

17 Giannobile, W. V., & Somerman, M. J. (2003). Growth and amelogenin-like factors in periodontal wound healing. A systematic review. Annals of Periodontology, 8(1), 193–204.

18 Bosshardt, D. D., Chappuis, V., & Buser, D. (2017). Osseointegration of titanium, titanium alloy and zirconia dental implants: Current knowledge and open questions. Periodontology 2000, 73(1), 22–40.

# ON PARTNERSHIPS AND CONTRACTS

# A few lessons I'd like to share with you

I RECENTLY watched Squaring the Circle on Netflix. It's a documentary about Hipgnosis, the art and design company famous for their work on many iconic vinyl record album sleeves from the late 1960s through until 1982 or so. The demise of the business came about when the two founders stopped talking to each other and started pulling in different directions, against a background of the business changing with the rise of the compact disc.

It made me think of the times, too many to include here, that I have seen business and personal disputes which have led to distraction, unpleasantness and, too often, expensive litigation. After an abortive hospital career I started work as an associate in a fairly established practice, created to fulfil a need in an expanding new suburb. For the first few years the founding, profit sharing, partners were so busy they had little chance for any differences.

As time went on, it was clear that their characters and opinions, their philosophies of dentistry and business were not overlapping. Disagreements followed, mostly on the direction of the business. Two of the partners were strongly opinionated on most things and would not budge, lawyers were consulted, both sides became more deeply entrenched and ultimately barristers became involved. One partner left and started their own practice a few miles away. Both sides claimed victory, split the very significant legal costs and licked their wounds. As the one who moved on told me several years later: "We could all have had long holidays and new cars on what we spent on legal fees".

This was my introduction to dental partnerships and handshake contracts, together with the misunderstandings and disputes, unhappiness and distraction that they can cause. Perhaps it was just my interpretation but the way some dentists behaved towards one another was one of the main things

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Alun K Rees BDS is The Dental Business Coach. An experienced dental practice owner who changed career, he now works as a coach, consultant, troubleshooter, analyst, speaker, writer and broadcaster. He brings the wisdom gained from his and others' successes to help his clients achieve the rewards their work and dedication deserve. www.thedental businesscoach.com that led me to start and remain in 'single-handed' practice for twenty odd years. Since making the move to consulting and coaching I have frequently encountered the same attitudes that so intrigued me early on.

What lessons can I share? Always have a contract in writing with anyone with whom you do business. It's a legal obligation if you are an employer but there seems to be less compulsion or obligation when it comes to self-employed relationships or partnerships. Perhaps it is the difference between the meanings of those things 'obligation' and 'compulsion' that can be partly to blame.

An obligation is something that you must do, because someone else needs/wants you to, or because you have a responsibility. That responsibility could be legal, contractual or moral. On the other hand a compulsion is something you do because something inside you wants to do it. This latter may influence the way you practise your profession, your philosophy of practise if you wish, the way you relate to colleagues and employees and the prism through which you view the world.

**Start as you mean to go on** and never take anything for granted, especially with a partnership. I still hear the phrase "done on a handshake" when disputes have arisen. The old cliché is true: "A handshake contract isn't worth the paper it's written on!". And: "We have an understanding," only works until one side no longer understands.

Keep contracts as simple as possible but no simpler. When I asked a solicitor friend why their firm used the BDA associate contract as a basic, I was told that this was viewed as the "industry standard" and any deviations would only increase the risk of legal disputes. Like all lawyers who are busy and reliable, they wanted to minimise and prevent disputes, because they can lead to unpleasantness and not only do they have to pick up the pieces, but also stick them back together again. I was told: "The greater the detail the more chance of a dispute."

**Keep talking** to other parties, whether that is a business partner, a principal or an associate. That does not mean that you're constantly chivvying them for little changes in the working relationship, nobody needs or wants such needy colleagues (associates take note!) – rather you should sit down quarterly with an agenda to discuss the things that you have in common. If there are problems, concerns or challenges bring them out in the open, work them out, agree and move on.

Keep your business and social relationships cordial but separate. Spouses/life partners can fall out, especially where money is involved.

<u>**Be upfront and honest**</u>. Don't open a branch practice on your own without discussion.

**Share your professional ambitions**. There was a case in a Gloucestershire town where a practice was physically split down the middle over a decision to leave or stay with an NHS commitment.

**Don't spend someone else's money**. One partner re-equipped their surgery without consulting the other but spent shared funds. Make sure that, should any partner wish to leave or to change their commitments, the path is straightforward and clear – so that any new solicitor can understand what was agreed.

### Have different business and personal advisers, when appropriate.

Never presume or assume. Another cliché: "Assume makes an 'ass' out of 'u' and 'me'".

I have witnessed all of the above, and more. So much that these days I seem to be involved in what feels like negotiation, conflict resolution and conciliation more than coaching.

"When I first signed a contract, it was more than a handshake then..." – Pete Townshend, from How Many Friends, The Who by Numbers, 1975.

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