DENTAL HEALTH

VOLUME 64 | NO 5 OF 6 SEPTEMBER 2025

BSDHT.ORG.UK

THE JOURNAL OF THE BRITISH SOCIETY OF DENTAL HYGIENE AND THERAPY

CONGRATULATIONS TO THE **CLASS OF 2025**

PERIODONTAL DISEASE A SYSTEMS-BASED APPROACH TO MANAGEMENT

SYNTHETIC APPROACHES IN THE **MANAGEMENT OF CARIES**

GBT SUMMIT

LONDON 2025

BOOK YOUR PLACE

31.10.2025

ROYAL COLLEGE OF PHYSICIANS

11 Saint Andrews Place, London, NW1 4LE

EMS

DENTAL HEALTH

The mission of BSDHT is to represent the interests of members and to provide a consultative body for public and private organisations on all matters relating to dental hygiene and therapy. We aim to work with other professional and regulatory groups to provide the highest level of information to our members as well as to the general public. The Society seeks to increase the range of benefits offered to members and to support this with a clear business and financial strategy. The Society will continue to work to increase membership for the benefit of the profession.

BRITISH SOCIETY OF DENTAL HYGIENE AND THERAPY
Promoting health, preventing disease, providing skills

bsdht.org.uk

DENTAL HEALTH – ISSN 0011-8605

Annual Subscriptions for non-members: £155.00 per annum
UK 6 issues including postage and packing. Air and Surface Mail upon request.

Warners Midlands plc
The Maltings, Manor Lane, Bourne,
Lincolnshire PE10 9PH
Telephone: 01778 391000
Email: helpdesk@warners.co.uk
Web: www.warners.co.uk

This journal is printed on paper from an FSC® certified merchant

11

ON THE COVER

Helping parents of autistic children improve their dental health

OPTIM™

Durability even on the Smallest Sizes

OPTIM Interdental brushes are precision made in the UK, using high tensile strength, plastic-coated, stainless-steel wire at the core, which helps to prevent the brushes from buckling, **even on the smallest sizes**. They are the same colour coded sizes that practices/patients are already familiar with and are very competitively priced.

For more information or to request a sample, simply speak to your dealer, scan the QR code or visit **www.optim-idb.uk**

Guest Editorial

Mouth Cancer – It's never been so important for you to be involved!

The annual incidence of head and neck cancer in the United Kingdom reached a record high last year with more than 10,000 cases being diagnosed. Sadly, the number of our patients being found to have mouth cancer has more than doubled in the last twenty years. The dramatic increase in cases of cancer is extremely worrying since, despite significant improvements in treatment, the 5-year survival from this devasting condition has remained poor at only 55%. The single most important factor that can improve a patient's outcome is detection of the tumour whilst it is small and has not spread to the lymph nodes in the neck. Treatment under these circumstances is likely to be less extensive and consequently have a reduced impact on the patient's quality of life.

I have previously published the results of a clinical study that revealed that dental hygienists and dental therapists have an ability to detect the presence of mouth cancer equal to that of primary care dental practitioners and therefore they should be considered as competent in this aspect of front-line healthcare delivery.[1] Throughout my career I have provided undergraduate and postgraduate teaching on mouth cancer to all members of the dental team, including local and national BSDHT meetings and webinars. I hope that I have been able to raise awareness of the changes that are associated with the presence of mouth cancer and the importance of the regular soft tissue examination. Some of you may have enjoyed one of the mouth cancer quizzes that I usually include in presentations.

In addition to holding the position of an Honorary Vice-President of BSDHT, I was delighted recently to be invited to serve as a Clinical Ambassador for the Mouth Cancer Foundation. This charity is dedicated to raising awareness and support for those suffering from, or at risk of, mouth cancer, in particular providing assistance on living with mouth cancer for families, friends and carers. A huge amount of information is freely available on the charity website and is a perfect place to access material that would help you if you are preparing for Mouth Cancer Awareness Month in November.

The main fund-raising event for the charity is the annual **Mouth Cancer 10K Awareness Walk**. The walk this year marks the 20th Anniversary of the event and is being held on Saturday 20th September in London. Full details, including how to register, can be accessed at www.mouthcancerwalk.org. If you are able to participate then look out those walking shoes and I will see you there!

In summary, our fight against mouth cancer is so important and I thank you for your support.

Professor Mike Lewis
Emeritus Professor of Oral Medicine

References

1. Brocklehurst P, Pemberton M, Macey R, Cotton C, Walsh T, Lewis M. How accurately do members of the dental team detect malignant lesions? *BDJ Team* 3, 16103 (2016). https://doi.org/10.1038/bdjteam.2016.103

FROM THE PRESIDENT

BY RHIANNON JONES

I hope you are all enjoying the British summertime — it certainly gives us plenty to talk about with our patients!

BSDHT podcast

I am delighted to announce some exciting news about a new initiative we have been working on: *Dental Health Matters*, the flagship podcast from your Society. Designed with busy dental professionals in mind, the podcast will feature BSDHT updates, interviews with respected colleagues and industry partners, as well as practical tips to support you in your daily practice. The plan is to release two episodes a month, and following the pilot series, you are invited to feedback your thoughts, impressions and ideas for content to shape the first full season.

The podcast was created to connect with you, our members, in an accessible and engaging way. As a clinician, I understand the time constraints we all face — reading lengthy updates is not always possible. Podcasts offer a flexible alternative. Whether you are walking the dog, commuting, or have some time between appointments, you can stay informed 'on the go'! We hope it becomes a convenient way for you to engage with your professional organisation — essentially, BSDHT in your pocket!

While the podcast will be open access, there will be exclusive, in-depth episodes available only to members. Having it freely accessible means you can share episodes with your team, colleagues and even patients when relevant — helping to raise awareness and extend the reach of the Society's work.

We have spent considerable time researching trends and formats to ensure the podcast reflects what matters most to you. If you have ideas for topics or suggestions for guests you would like to hear, please email **jo@barkerpr.com** with the subject line: *"DHM Ideas."* Or register here: **https://www.bsdht.org.uk/podcast/**

This is your podcast, and we want it to be a valuable addition to your membership benefits.

On to other matters…

One of the most important meetings I attended recently was an audience with the Minister of State for Care, Stephen Kinnock. The meeting, hosted by Jason Wong Chief Dental Officer for England, brought together representatives from various dental care professional organisations to discuss contract reform ahead of a new consultation.

Given the limited time available, I spent days preparing to ensure I could accurately represent our profession and members. I was joined by knowledgeable colleagues who not only spoke for their respective professions but also highlighted our shared concerns. Topics included workforce shortages, pensions, remuneration, and the issue of double-counting on the GDC register.

A research project to gather more accurate workforce data will help us prepare for the next phase. BSDHT has also been invited to join the working groups once the consultation closes on 19th August. You can find more details here: NHS dentistry contract: quality and payment reforms - GOV.UK.

I am encouraged by the willingness of my colleagues in the room to work collaboratively toward practical solutions. I want to reassure you that I will continue to advocate for a fair deal for all current and future NHS dental professionals.

Looking ahead

The finance team is also working on the Society's next budget to ensure continued financial stability and align our resources with our strategic goals. If you have any ideas or suggestions for the future, please do not hesitate to get in touch — the executive team is always keen to hear from our members.

Your president-elect and I are also preparing to represent the UK at several national and international meetings this summer. Our international colleagues consistently express appreciation for the experience and insights we bring, and I look forward to sharing updates with you in my next *From the President*, in November.

In the meantime, enjoy the rest of your summer, and I look forward to seeing many of you at upcoming events and at the **Oral Health Summit in November**.

CALL FOR **SUBMISSIONS**

The BSP and BSDHT Outstanding Clinical Team Case Report Prize

The BSP and BSDHT are delighted to announce a joint prize to be awarded at The Oral Health Summit in Edinburgh in November to the team of oral healthcare professionals who demonstrate excellence in the planning and treatment of a patient through a whole team approach. The prize will take the form of a cash award of £500, together with a certificate for the winning team.

To find full details on submission requirements and how to apply, visit the OHS website for more details:
profile.eventsair.com/oral-health-summit-2025

AN ULTRASONIC LEGACY

ACTEON® has long been a pioneer in the field of ultrasonic technology for dental procedures, by designing and manufacturing equipment that enhances clinical workflows while prioritising patient comfort. Their ultrasonic devices both tabletop and built in, are widely recognised globally and have revolutionised dental care.

ACTEON® is proud to present OPUS®, their most significant prophylaxis and periodontal innovation of recent years!

Designed to meet the demands of dental professionals and patients, OPUS® delivers enhanced efficiency through clever anti-clogging control of the Silky® air-polishing pen and superior patient comfort thanks to the legendary Newtron technology. Its versatility and precision ensure an outstanding intuitive experience, making it an indispensable tool for any dental professional looking to elevate preventative care.

Free yourself from Protocol

Thanks to OPUS® and tool such as their C50® intra-oral camera, ACTEON® want to give you the confidence to free yourself from rigid protocols and treat every patient as the individual they are.

It is crucial to base treatment on solid, evidence-based research to ensure that patients receive the highest standard of care. While the same traditional practices or habits can sometimes feel comforting, adhering to unsupported protocols for every Patient can limit a clinician's ability to provide the best possible outcomes. Understanding why it's essential to break free from protocols that lack scientific evidence is key to improving both treatment effectiveness and patient engagement.

Promoting Personalised Care

Every patient is unique, and their dental care should be tailored to their specific needs. A one-size-fits-all approach, driven by unsupported protocols, overlooks the individual's unique condition, circumstances, and preferences. **Patient engagement** is critical to the success of any treatment plan. When protocols are flexible and based on scientific evidence, dental professionals can adjust their approach to fit the patient's specific oral health situation, history, and level of involvement that is required from them, in their care.

For example, two patients with the same diagnosis might require different treatment strategies depending on many different factors. The goal should always be to **treat the patient as an individual.**

Increasing Treatment Effectiveness

Dental treatments based on unsupported protocols might not be as effective as those rooted in the latest scientific evidence. Dental research is constantly advancing, and new technologies, techniques, and understanding of oral health are emerging all the time. By remaining open to evidence-based treatments, clinicians can ensure that they are using the most current and effective methods available.

Enhancing Patient Engagement and Trust

Explaining to patients why specific treatments are chosen and how they are supported by scientific research can help build patient confidence. Moreover, when patients feel that their treatment plan is personalised to their unique needs and that they are being treated with the latest technology and knowledge, they are more likely to follow through with the prescribed care and have a positive outcome.

SCAN ME

Adapting to the Patient's Condition and Engagement

Each patient's level of engagement and their response to treatment can vary. The ability to adapt treatment based on the **patient's specific condition and level of cooperation** is essential. Protocols that fail to account for a patient's individual response to treatment may lead to suboptimal outcomes.

Providing flexible, evidence-based care allows clinicians to **adjust** their approach based on how the patient is responding. It might involve altering the pace of treatment or the order in which the clinicians' tools are used, or it might involve delaying treatment altogether.

Step into the world of opus and arrange your personal demonstration today

OBITUARY

Kevin Lewis
1949-2025

By Marina Harris

Kevin Lewis was a leading light in dentistry. The outpouring of sadness and loss from multiple arenas within our profession highlights his significant influence and the impact he made.

He was firstly a general dental practitioner, and then went on to helm Dental Protection (DPL) when it was the leading indemnity provider for dentists at the time. He was also a prolific writer in dental columns who managed to capture the essence of the argument with both clarity and a wry sense of humour. This wry sense of humour also made Kevin a popular lecturer and presenter who the audience loved to listen to.

I was lucky enough to get to know Kevin when he appointed me as the first DCP local adviser with DPL. Even then in 2005, he was leading the way in embracing the skills and expertise of the wider dental team. As a staunch advocate, I know he was proud to have a DCP within the organisation.

It was without hesitation that when I took over as President of BSDHT, I invited Kevin as my after-dinner speaker. As with all his public speaking, he enlightened, enthralled, and brought the house down.

Kevin was instrumental in the development of the new College of General Dentistry. It was not that surprising to me, that when I received a call from Sir Nairn Wilson inviting me to be an Ambassador for the College, that I found out it was Kevin who had suggested it. I think likewise for many other colleagues, he enhanced their opportunities without seeking the limelight for himself.

I last met Kevin on 1 August 2023. We met for lunch to celebrate my promotion to Associate Professor, and to talk over the write-up that he wanted to do about my career from being a dental nurse to where I am now. Unsurprisingly, his motivation was for my own story to inspire others and, despite his illness, he was his upbeat and witty self. A few months later we finalised the write-up but sadly Kevin's health circumstances may have prevented it getting out for publication.

To reiterate what has repeatedly been said - dentistry has lost a true friend who will be deeply missed.

WE INVITE YOU TO SUBMIT ABSTRACTS BY
FRIDAY 19TH SEPTEMBER 2025 AT 5PM.

Email: enquiries@bsdht.org.uk or call 01788 575050

WELLBEING FOR THE DENTAL COMMUNITY

BREATHE Dental Wellness was launched earlier this year online.

The idea behind this valuable resource is to create a single point of contact, support and wellbeing for the dental workforce.

General wellbeing of every member of the team is vital and can only positively impact on patient care. This valuable resource can be accessed here:

Please visit BREATHE Dental Wellness | Wellbeing for the Dental Community:
https://www.breathedentalwellness.org

HELPING PARENTS OF AUTISTIC CHILDREN **IMPROVE THEIR DENTAL HEALTH**

A new, free, online support package aims to empower parents of young autistic children to look after their dental health.

It follows a study led by the University of Leeds, which highlights the oral health challenges faced by autistic children. The research team has collaborated with autistic youngsters, their families, and early-years professionals to co-design the support package, following parents' calls for autism-specific advice on how to improve oral health habits. The toothPASTE website provides parents with practical, tailored solutions focusing on: toothbrushing, going to the dentist, and eating and drinking. It features videos, downloadable resources and a forum where parents can share their experiences and advice.

Challenges faced by parents with autistic children

One in four autistic children have tooth decay by the age of five – similar to the wider childhood population – but they are less likely to visit the dentist and twice as likely to need dental treatment under general anaesthetic.

Poor oral health in childhood has lifelong impacts. Establishing optimal oral health habits – brushing twice a day with fluoride toothpaste, limiting sugary foods and drinks, and going to the dentist – are critical. However, for families of autistic children, building and keeping these habits can be more difficult. This is due to additional challenges such as communication difficulties, sensory sensitivities and restricted or repetitive behaviours.

For example, sensory differences can make toothbrushing painful or repulsive. Dental visits can also be overwhelming, with bright lights, unfamiliar smells, strange tastes and unexpected sounds or touch. Some autistic people experience social communication differences, making it hard for them to express if they are in dental pain. In addition, repetitive behaviours, or strong preferences, may lead to limited diets, often high in sugar, which can increase their caries risk.

The impact of caries is far-reaching, affecting self-esteem, speech, eating, sleeping and quality of life. But it can also affect a child's school attendance, impacting negatively on life outcomes.

Designed with parents, for parents

Dr Amrit Chauhan, Lecturer in Qualitative Methodology and Autism-related Oral Health Research within the School of

Fredi Kilgallon. Credit: Anne-Marie Kilgallon

Dentistry and a Chartered Psychologist at Leeds, who co-led the research, said: "We want to help parents feel more confident in caring for their young autistic children's teeth. That's why families of autistic children have been involved from the start of the study, and we have very much been led by them on what they want.

"We know that most parents already have a good idea of what they should be doing, like brushing twice a day with fluoride toothpaste – it's more about finding practical ways to get there.

"Every family is at a different point in their journey, and every child's needs are unique. So, on the website, we break things down into small, manageable steps. We take a gentle, gradual approach, recognising that for some children, making even one small change might take weeks or even months – and that's okay."

The Leeds team collaborated with researchers from the University of Manchester and University of Sheffield on the project, which was funded by the National Institute for Health and Care Research (NIHR) and West Yorkshire NHS Integrated Care Board. It is hoped the project will help reduce health inequalities.

Visit the toothPASTE website here:
https://www.autismtoothcare.com

Read the paper in full:

Chauhan A, Leadbitter K, Gray-Burrows KA, Vinall-Collier K, Pickles N, Baker SR, Marshaman Z, Day PF. An 'explosion in the mouth': The oral health experiences of autistic children. *Autism*. 2025; **29(3)**: 627-641 https://doi.org/10.1177/13623613241288628

BSDHT NORTH EAST REGIONAL STUDY DAY

Date: Saturday 5th April 2025

Venue: Radisson Blu Hotel Durham

Speakers: Ian Dunn and Juliette Reeves

Sponsors: Thanks to - Buxton Coates, CC Med, Durr Dental, Geistlich, Haleon, Ivoclar, J&S Davis, MC Repairs, MDU, Optident, Optim, Oral B, Oralieve, Philips, Swallow, TePe, Trycare, Waterpik.

Following delegates' feedback from last year's study day, we had a rather more relaxed itinerary and moved the event further 'up North,' to the picturesque city of Durham.

Our committee was up early to welcome 18 trade stands and 80 delegates. This year's speakers encouraged a number of dentist colleagues to attend, ensuring a really good team event! Our trade colleagues joined us from 8:00 am-9:00 am, during the morning refreshment break and again after lunch, to ensure our delegates had enough time to meet with them all.

Our speakers for the day really needed no introduction!

First to present was **Ian Dunn**, Specialist Periodontist and former Undergraduate Teaching lead in Periodontics at Liverpool University. Ian opened the morning session with his first presentation entitled: **Diagnosis, misdiagnosis and treatment planning**. This was a great refresher for all delegates and his down to earth enthusiasm, with plenty of anecdotes, really engaged the audience.

After our morning break, Ian returned to the stage with his second presentation: **Avoiding the knife!** Again, a brilliant presentation, encouraging delegates to rethink the boundaries between treatment in practice and specialist referral. This was particularly useful as specialist periodontists in the North East have limited capacity to accept such referrals.

Just before lunch Cara, our Regional Group Representative, presented her report from BSDHT Council.

Juliette Reeves' first presentation of the day followed lunch: **Oral health and the menopause.** Juliette shared her vast knowledge about how menopause affects not only a woman's general wellbeing, but also the huge impact that fluctuating and reducing levels of female hormones have on oral health.

Juliette's second presentation, **Nutritional influence in chronic inflammation – implications in the management of periodontal disease,** provided great insight into how dietary choices impact the levels of inflammation in our bodies and the subsequent problems this causes not only on general health, but also periodontal health. As educators, we ought to share this information with our patients, sympathetically and without judgement.

The raffle raised a huge £296, which was split between Ovacome and Testicular Cancer. Thank you all for your support.

The committee is already organising our next events: the Autumn meeting will be online and we are looking at venues for the Spring meeting. If anyone would like to suggest content, speakers or a particular subject, please contact a member of the team at BSDHT North East.

Sarah Hunter
northeastsecretary@bsdht.org.uk

The North East Regional Group Team

NEW APPROACHES IN PROPHYLAXIS: IVOCLAR ELEVATES DENTAL PREVENTION AND CARE TO THE NEXT LEVEL

Prevention & Care: Transforming oral health together

Prophylactic care plays a crucial role in maintaining long-term oral health. It not only protects against diseases such as caries and periodontitis but also supports overall dental health. Regular professional teeth cleanings, preventive check-ups and targeted dental care help identify risks early and counteract them effectively. This helps prevent dental issues and minimize the need for treatments. Consistent prophylactic care is the key to a healthy smile and improved quality of life. For Ivoclar, prophylaxis is more than just cleaning, it is an integral part of long-lasting dental health and care. In close collaboration with oral hygiene professionals, products that ensure effective, safe and comfortable treatment are developed.

Focus: A new era for Prevention & Care

The strategic realignment will elevate the Prevention & Care portfolio to the next level. The first step in this transformation is marked by the realignment of four innovative products. The new products are designed to redefine efficiency in preventive care –making treatments smoother for dental teams and more pleasant for patients. Ivoclar is initiating the transformation of this segment with four progressive products that raise the standard in preventive care:

- **VivaDent Protecting Mouthwash:** This alcohol-free mouthwash provides excellent protection and actively supports the health of teeth and gums. Thanks to its mild yet effective formula, it is ideal for daily use in the practice as well as at home.
- **VivaDent Fluoridation Gel:** A highly effective fluoride gel that strengthens tooth enamel and protects against caries. Its special formula promotes remineralization and provides long-lasting protection – an essential part of professional prophylaxis and at-home care. New approaches in prophylaxis: Ivoclar elevates dental prevention and care to the next level
- **VivaDent Protecting Gel:** Developed for targeted use after professional cleanings to soothe oral tissues and form a protective layer against external influences. The gel supports oral health and ensures a pleasant feeling in the mouth after treatment.
- **VivaDent Polishing Paste:** The first choice for effective polishing with minimal abrasion of the tooth structure. With various levels of abrasiveness and flavours, VivaDent® Polishing pastes enable needs-based treatments and ensure optimal results in professional teeth cleaning, suitable for all tooth surfaces, including natural teeth, restorations, implants and prosthetic reconstructions. Even high-quality restorations retain their high gloss. Now available in three flavours: apple, bubble-gum and mint.

These and all other products in the Prevention & Care range are designed to ease the daily workload of prophylactic care teams and support lasting improvements in patients' oral health.

In a nutshell: The benefits for dental practices and prophylactic care teams

The solutions in the Prevention & Care range have-been specifically developed and tested in collaboration with professionals from clinical practice. Guided by the motto "Your smile is our mission: Oral health," Ivoclar has gathered insights from preventive care professionals who dedicate themselves with passion and commitment to their patients' oral health every day.

Together for better oral health

Close collaboration with preventive care specialists, dental hygienists and dentists is an integral part of Ivoclar's development strategy. It is only through active dialogue with dental professionals that products which not only excel technically but also enhance everyday practice workflows can be developed. With the repositioning of its Prevention & Care portfolio, Ivoclar reinforces its mission to develop sustainable solutions for dental professionals and improve oral health worldwide.

Find more information on the products of the Prevention & Care range on:
https://www.ivoclar.com/en_gb

Or scan the QR code! ▶ ▶

ivoclar

BSDHT

The British Society of Dental Hygiene and Therapy

GRADUATION AWARDS

CLASS OF 2025

CONGRATULATIONS TO:

Oralieve®
DRY MOUTH RELIEF

Each year, the BSDHT provides awards to universities and dental schools across the UK, kindly sponsored by Oralieve. Tutors select one individual to receive the BSDHT Graduation Award, in recognition and celebration of their achievements.

Aaliyah Seth

Winner of the BSDHT Graduation Award 2025
for School of Dentistry, University of **Leeds**

Aaliyah was chosen for this award by her tutor for achieving the highest overall mark in the Final Year Dental Hygiene & Therapy Research Project.

(Pictured: Aaliya being presented with her award by Alan Mighell, Dean of Dentistry)

Fatimah Karbhari

Winner of the BSDHT Graduation Award 2025
for School of Dentistry, **University of Central Lancashire.**

Fatimah was chosen for this award by her tutor for gaining the highest mark in the Health Promotion and Population Studies (HPPS) exam.

(Pictured: Fatimah being presented with her award by Vicki Griffiths, North West Regional Rep.)

Ivett Hollands

Winner of the BSDHT Graduation Award 2025
for **Teesside** University

Ivett was chosen for this award by her tutor in recognition of her continued commitment, professionalism, and academic excellence throughout the course.

Jenna Benns

Winner of the BSDHT Graduation Award 2025
for Queen Mary University, **London**

Jenna was chosen for this award by her tutor for achieving overall excellence throughout the programme.

(Pictured: Jenna being presented with her award by Professor Christopher Tredwin, Dean of Dentistry)

Rosie Boddy

Winner of the BSDHT Graduation Award 2025
for **Liverpool University** Dental Hospital

Rosie was chosen for this award by her tutor as the graduating dental therapist who has shown the best overall clinical developmental progress over the course of the CLC3 programme

(Pictured: Rosie being presented with her award by Professor Luke Dawson)

Kirsty Mathieson

Winner of the BSDHT Graduation Award 2025
for **Glasgow Caledonian University**

Kirsty was chosen for this award by her tutor for Clinical Excellence

(Pictured: Kirsty being presented with her award by one of her tutors Edward Cheung)

Sofia Riley

Winner of the BSDHT Graduation Award 2025
for the School of Dental Sciences, **Newcastle University**

Sophia was chosen for this award by her tutor for achieving the highest overall marks in the Stage 3 BSc written examinations.

(Pictured: Sophia being presented with her award by Claire McGee, Associate Clinical Lecturer at Newcastle University)

Robyn McIntosh

Winner of the BSDHT Graduation Award 2025
at the School of Dentistry, **University of Dundee**

Robyn was chosen for this award by her tutor for Best academic student for the final year of the BSc programme.

(Pictured: Robyn being presented with her award by Dr Kevin Davey, Interim Dean of Dentistry at University of Dundee)

Veronika Eguzhinskaia

Winner of the BSDHT Graduation Award 2025
for University of **Portsmouth** Dental Academy

Veronika was chosen for this award by her tutor for Best BSc Research Project Prize

(Pictured: Veronika being presented with her award by Debbie Withers, Senior Dental Care Professional Teaching Fellow)

Colgate Total

NEW FORMULA*

NEW Colgate Total®.

Extend your professional care.

3x *REDUCTION OF BACTERIAL BIOFILM‡*

31% *REDUCTION IN CALCULUS FORMATION‡*

34% *REDUCTION IN GUM PROBLEMS§*

Colgate Total® empowers your patients with active prevention between visits

The new uniquely* stabilised **stannous formula** fights the root causes of many common oral problems.†

DENTIST RECOMMENDED #1

*US Patented.
^Colgate® Brand, Toothpaste, UK, Dentist Survey 2023. To verify contact ukverification@colpal.com.
†Bacterial plaque reduction, with 3 months continued use.
‡Vs non-antibacterial fluoride toothpaste with 3 months of continued use.
§Vs non-antibacterial fluoride toothpaste with 6 months of continued use.

TOTAL CONFIDENCE

We invited **43,000 UK dental professionals** to try the **New Colgate Total® Active Prevention Toothpaste**. After 8 weeks, we gathered their professional feedback.[1] The results speak for themselves, giving you and your patients TOTAL CONFIDENCE.

98%

Likely to recommend Colgate® after using Colgate Total® Active Prevention[1]

91%

Felt a fresh, clean mouth after using Colgate Total® Active Prevention[1]

82%

Want to keep using Colgate Total® Active Prevention[1]

> 'Nice to try the new formulation - it is the number one toothpaste I recommend'[1]

> 'Fantastic toothpaste, makes your mouth feel fresh every time'[1]

> 'Love the new toothpaste – excellent protection, reduces plaque/calculus build up'[1]

Giving you TOTAL CONFIDENCE to recommend NEW Colgate Total®

PROFESSIONAL ORAL HEALTH

1. Data on file. Colgate Total® Personal Use Mailer Feedback activity May 2025 (n=415).

BY ALISHA INAYET

FINDING MY PLACE
A JOURNEY TO DENTAL HYGIENE AND THERAPY

As I approach my final year as a dental therapy student at the University of Bristol, I often reflect on the long journey I have undertaken to get me here.

As an 18 years-old immigrant from the Philippines, I always knew it was going to be challenging to start a new life in a new country – new culture, new friends and having to prove myself every step of the way. But through perseverance, and support from my family and friends, I have made it this far. I hope my story inspires you to never give up on your goals and dreams.

Discovering dentistry

I actually wanted to study accountancy, but my mum had other ideas! Like many Filipino parents, she encouraged me to do something in healthcare. She was convinced that this would provide me with greater security and pushed me into doing a dental nursing apprenticeship – "just as a back-up," she said – something I could always fall back on if my life did not work out here in the UK. Little did I know that I would fall in love with dentistry.

I would always consider myself to be a caring person: I find it easy to put the needs of others first and I easily and naturally, fitted the role of a dental assistant. I was lucky enough to grow, personally and professionally, in a lovely practice in Watford where I quickly realised how much I enjoyed working with the team, helping others and making patients feel comfortable.

Over seven years, I worked my way up to become head nurse, but what truly shifted my career goals was seeing the impact of the dental hygienist with whom I worked. She built great relationships with patients, and was booked up months in advance!

I could have followed other pathways in dentistry – my mum strongly suggested orthodontic therapy, especially with her many years of experience in orthodontics – but my heart was set on prevention, oral health promotion and building those long-term connections with patients.

Rejections and self-doubt

After qualifying as a dental nurse, I looked into applying for dental hygiene, only to realise that most universities required a level 3 course and GCSEs. This was a problem for me as I did not have these qualifications and mine from my home in the Philippines were not recognised here in the UK.

There was only one solution to following my dream to become a dental therapist: I decided to start over again in my new home!

It was daunting to begin again, but I knew it had to be done. I enrolled in an Access to Science course and sat my maths and English GCSEs, thinking that this would be enough. However, when I applied, I was rejected. Most universities wanted at least five GCSEs so I carried on to study four more subjects independently while working almost full time. Additionally, I took an oral health education course to build my confidence in communication, especially since English is not my first language. Balancing work and study was incredibly tough, but I was determined to get into university.

Eventually, I met the entry requirements and secured an interview – but I still did not get accepted. The rejection hit hard, and I started questioning everything: was I good enough? Am I wasting my time? Am I too old? I felt so behind in life and unsure of my future. Coming from another country and culture, I often felt less capable. I doubted whether I was 'allowed' to be ambitious, perhaps success was not meant for people like me? But I refused to let those fears stop me.

I applied the following year again and secured more interviews. Although I was still rejected, I could finally see some progress.

The turning point and breakthrough

Even with the qualifications and my experience, I still was not standing out from all the other applicants. I decided that something needed to change. After years in a wonderful practice, I moved into a specialist periodontal clinic in London, surrounded by forward-thinking people who aimed high and encouraged others to grow. That environment lit a fire in me. I started revising harder, practising questions in the mirror and, slowly, I began believing that I really could become a dental therapist.

In 2023, I had my first interview with the University of Bristol. At the end of my interview, the course director said: "We're looking for someone just as enthusiastic as you." I left shaking but I still did not expect much knowing that there were hundreds of applicants. When I received the email offering me a place to study, I dropped to the floor in tears and then immediately called my mum!

It might have taken me years to get there, but I believe I started at the time that was right for me. The person I was a few years ago might not have been ready for the challenges of university – but now, I am.

That moment changed everything. I realised that perseverance, mindset and being enthusiastic were my strengths all along – and they continue to carry me through. This course is challenging in every way, and I have needed resilience to get through first and second year.

My message to others

Looking back, every rejection and every moment of doubt only strengthened my determination. I have learned that your background does not define your future – your mindset is what is important. And believing in yourself, even through your fears and self-doubt, is what makes growth possible. My journey is not just about becoming a dental hygienist and therapist, it is about resilience and I am proud to share it.

Contact: ux23091@bristol.ac.uk

AMY O'BRIEN

SPOTLIGHT ON...

Amy is a dental hygienist and practice manager in a busy private general and referral practice in Reading. In addition to 2.5 days clinical work, she has managed the business for 13 years. With her love of compliance, Amy enjoys the challenges this brings on a daily basis.

DH: How did you become practice manager as well as a busy dental hygienist in the same practice?

AO: In 2011 I was thriving as a clinician, treating patients I loved and building long-term relationships when our practice manager resigned due to ill health. Prior to her resignation, I had worked closely with her to ensure that the practice became complaint under the new, at the time, HTM-01-05 requirements: I had trained under the new guidelines, and qualified in 2009, just as they were launched. My principal dentist surprised me by asking if I would take over the role. At first, I laughed. Me? A manager! But the more I thought about it, the more it resonated. I had developed a love for compliance (yes, really!) and had already been helping our team navigate the implementation of HTM-01-05 and the CQC's new frameworks.

DH: What is it about compliance that you enjoy?

AO: I like working to a structure, and essentially that is compliance in a nutshell! If everyone is working to the same standard, everyone is then treated fairly and measured against the same standards.

Compliance is everyone's responsibility; whether it be cleaning down a surgery, meeting CPD requirements or wearing a clean uniform every day. Everyone has their part to play and by dividing up the workload, the wider team gains a sense of responsibility and an understanding of why certain things are required or

requested of them. It also stops compliance becoming simply, "because the practice manager says so!" which is a response and attitude I hate!

DH: In your opinion, what qualities make a great practice manager?

AO: Think of a Swiss Army Knife and that's essentially your practice manager – marketer, social media content creator, IT whizz, engineer, recruiter, the list goes on…!

A good listener with empathy and the ability to turn their hand to anything in an instant is a good starting point. The job can be incredibly stressful at times, and trying to keep a calm head whilst navigating challenges goes a long way; I am learning to try and keep my frustrations to myself and vent in other ways. Very loud dance music in the car on the way home helps!

Trying to keep a sense of fun wherever possible in the working day helps. Dentistry is challenging at times and sometimes our efforts are not always appreciated by those we are trying to help, which can be demoralising for the those affected within the team. Team member of the month at staff meetings, flowers for birthdays, the occasional cakes, and coffee runs all contribute to the team morale.

DH: How does being a practice manager compare and contrast to being a dental hygienist?

AO: On the management side, no two days are ever the same. I am constantly juggling: ensuring compliance at all times, supporting the team, marketing, handling corporate demands, and keeping an eye on the overall wellbeing of the practice. Corporate life brings its own challenges, and it can sometimes feel like the focus shifts too far from the people who make the practice what it is. That is something I try hard to counteract - checking in with staff, fostering a supportive environment, and never losing sight of the human element.

Sometimes it feels like all I do is stare at spreadsheets and look at figures when I would much rather be elbows deep working on a periodontal case! At other times, if I have helped a team member with a difficult issue, or finally resolved a problem, the sense of achievement is huge.

As a dental hygienist, I cherish the relationships I have built with patients, some of whom I have been treating for over 15 years. There is something so special about that continuity - getting to know people, seeing them through life's ups and downs, and working together to improve their oral health. Every patient brings a unique challenge, whether it is a medical condition, a tricky perio case, or even a discussion about something they have seen on TikTok!

DH: It sounds like your clinical experience is a huge advantage.

AO: Understanding the business from both aspects is an advantage. As a clinician I need to see patients and provide a level or service by working adequate hours and offering high quality treatments utilising my skills developed over time.

As a practice manager I need to remain competitive in an ever-changing market, to grow the existing business and develop further professional relationships, to ensure staff are treated fairly and well and feel happy at work, the list goes on.

When making business decisions, it is not just a box ticking 'we need another dentist' but looking at what additional services can be brought to our team or how can we improve what we are already doing.

I also work closely with many of our referring dentists to help manage their expectations and those of their patients. The majority have my personal contact details and will reach out directly knowing I can resolve their issue

DH: What specific challenges are there to holding two roles in a busy practice?

AO: Whatever the role, it's all about team work and patient care! Our practice is a hive of activity. We are a team of dentists, dental hygienists, specialists, nurses, and receptionists working together to provide everything from general dentistry to implants, perio care and orthodontics. What makes us special is our teamwork- we genuinely enjoy working together and supporting one another, whether it is navigating the chaos of the day or laughing through the little moments that keep us going.

Running in house events for both patients and staff takes a portion of my time, but without these we would not be where we are today, and it is another aspect to my working day that keeps the job interesting.

DH: What tips would you give anyone else considering a dual role within a practice or moving into practice management?

AO: Do it! I love being a dental hygienist. I trained and studied hard become one and would never give it up - it will always be my first love. But it is a lonely job at times, and you can feel a bit left out of the wider team, which is a shame. It is also physically and mentally tough on you, and breaking up my working week suits me. I am happier now as a clinician, and love my two days in surgery far more than when I was working a full clinical week.

It also helps to see the business from the other side; decisions are made and not always communicated properly to the wider team, which can lead to feelings of isolation or being unappreciated. However, if an explanation is given and situations are worked through together as a team, everyone understands why changes are made and the impact on the business.

I would suggest that you reach out to your practice managers and see if there are areas you can start to get more involved with, or if there are aspects that you can enjoy, such as social media, that you can help with to get things started.

Q-Optics

Loupes & LED Lighting

12 MONTH PAYMENT PLAN AVAILABLE

Interest Free

Experience exceptionally lightweight loupes with crystal clear optics, designed and optimised for you.

- Custom Measurements
- Custom Fitting
- Custom Fabrication

For a fit as unique as you are.

Peace of Mind

Q-OPTICS · TOTAL LIFETIME WARRANTY ·

Q TrueFit CERTIFIED

01535 656 312

SWALLOWDENTAL.CO.UK

SALES@SWALLOWDENTAL.CO.UK

BOOK YOUR FREE DEMO

SWALLOW

BY EMMA HUTCHISON

WORKING AS A DENTAL HYGIENIST OR DENTAL THERAPIST IN SCOTLAND

The four nations of the UK are united under the Acts of Union 1707. Each nation has distinct regulations and systems for dental hygiene and therapy professionals, particularly within the National Health Service (NHS).

Scotland's Governance

Historical Context

The Parliament of Scotland, the national legislature of the independent Kingdom of Scotland, existed from the early 13th century until 1707. In 1707, the Acts of Union merged Scotland with England, forming the Kingdom of Great Britain and establishing the Parliament of Great Britain at Westminster, London. Following a 1997 referendum, the devolved Scottish Parliament was re-established under the Scotland Act 1998, with its first meeting on 12 May 1999.

Dental System in Scotland

NHS System: Scotland uses the Statement of Dental Remuneration (SDR), a fee-per-item system without time restrictions for claims. Hygienists and therapists must use a dentist's list number for NHS claims, as they lack independent list numbers. This restricts direct access to NHS patients unless working privately.

Guidance: The Scottish Dental Clinical Effectiveness Programme (SDCEP) provides evidence-based, user-friendly guidance for dental teams. It supports high-quality, safe, and patient-centred care, similar to the Delivering Better Oral Health (DBOH) guidance used across the UK.

Vocational Training (VT): The Dental Hygiene and Therapy (DHT) VT scheme was withdrawn in 2021 but will be reinstated as a pilot in 2025, managed by NHS Education for Scotland (NES).

Key details:

- Program: A one-year supervised practice-based educational program starting 1 September 2025, with 10 trainee places across Scotland.
- Structure: Trainees work 0.6 WTE (Whole Time Equivalent) at NHS Band 5, under NES-appointed Vocational Trainers. The program includes practice-based assessments for "Satisfactory Completion" and educational events to prepare trainees for early-career challenges.
- Applications: Handled via the Oriel system a visitation period in mid-May for matching trainees with trainers.
- Curriculum: Encourages full scope of practice and includes joint sessions with Vocational Dental Practitioners (VDPs) to promote skill mix and team-based care. The VDP curriculum now covers the scope of dental therapists.
- Leadership: NES appointed a Dental Therapy Adviser to oversee the program and represent therapists' educational needs. The new NES Dental Postgraduate Dean, Lee Savarrio, supports this initiative.
- Future Plans: NES aims to expand training places and program scope in subsequent years, developing independently while engaging with UK Deaneries.
- Clyde Munro Dental Therapy Support Scheme (2024): A private initiative for dental therapists meeting specific criteria:
  - Qualified within the last 3 years
  - Registered with the General Dental Council (GDC)
  - Able to work to full scope of practice
  - Willing to relocate to Scotland or start full-time by August 2025
  - Clyde Munro Website: https://careers.clydemunrodental.com/therapist-support-programme

Comparison with Other UK Nations

England

NHS System: Uses Units of Dental Activity (UDA), allowing dental hygienists/therapists to have personal identification numbers (PIN) and treat NHS patients under direct access.

Foundation Training: Eight Dental Therapy Foundation Training (DTFT) schemes operate across regions (e.g., North-West, Thames Valley & Wessex, London & KSS). Key features:

Structure: Trainees work 3 days/week (2 days clinical practice, 1-day postgraduate study) at NHS Band 6, employed by NHS

England. Study includes lectures, clinical sessions, community projects, and optional public health/research placements.

Wales

NHS System: The NHS dental system in Wales operates under two main contractual options: the traditional UDA contract and a contract reform model, which measures performance using a combination of UDAs and other metrics, such as the number of historical and new patients seen. Each practice can choose which model it works under. Dental therapists in Wales are issued with a unique identification number, allowing them to treat NHS patients directly under direct access arrangements.

Vocational Training: The Wales Dental Therapy Foundation Training (WDTFT) program, managed by the Health Education and Improvement Wales (HEIW) Dental Postgraduate Department, supports newly qualified therapists with:

- Structured introduction to NHS general practice
- Study days lectures and conferences

Northern Ireland

NHS System: Similar to Scotland, charges are 80% of the dentist's fee, capped at £384 (as of March 2025).

Vocational Training: Currently, there are no dental therapy undergraduates or a VT programme.

Key Differences

NHS Access: Scotland restricts direct NHS patient access for hygienists/therapists due to the lack of independent list numbers, unlike England and Wales. Northern Ireland's system is closer to that of Scotland.

Remuneration: Scotland's SDR allows flexible fee-per-item claims, while England and Wales use UDAs with set claim limits.

Training: Scotland's VT pilot (2025) is smaller (10 places) compared to England's established DTFT schemes. Wales offers a structured program, while Northern Ireland lacks a comparable initiative.

Guidance: Scotland's SDCEP is tailored to its system but aligns with the UK-wide DBOH.

References

1. [History of the Scottish Parliament] (https://www.parliament.scot/about/history-of-the-scottish-parliament/origins-of-the-scottish-parliament) (accessed 9 January 2025)
2. Calum Cassie, Head of NES Training, email correspondence (10 March 2025)
3. [Wales Dental Therapy Foundation Training (WDTFT)] (https://heiw.nhs.wales) (accessed 12 February 2025)
4. BSDHT Bites, Issue 58 (April 2025) (accessed 1 April 2025)
5. [Scottish Dental Remuneration (SDR)](https://www.scottishdental.nhs.scot/dental-team/statement-of-dental-remuneration/)
6. [SDCEP Guidance] (https://www.sdcep.org.uk/)
7. [Clyde Munro Therapist Support Programme] (https://careers.clydemunrodental.com/therapist-support-programme/)
8. [Delivering Better Oral Health (DBOH)] (https://www.bsperio.org.uk/assets/downloads/Delivering_better_oral_health.pdf)

Author: Emma Hutchison, Dental Hygienist, and BSDHT Scottish Regional Team member.

BEYOND THE BRUSH
LONG-TERM STUDY FINDS INTERDENTAL CLEANERS MAY HELP PREVENT TOOTH LOSS

- Study examined five years of dental health check-up data
- Dental flossing was more beneficial in healthy individuals
- Interdental brushes were more effective in individuals with periodontitis

A comprehensive joint study[1] analysing the link between interdental cleaning devices and tooth loss over five years indicates that longer-term use of interdental tools may help prevent tooth loss, while the effectiveness of different tools also depends on periodontal health.

The joint research by Jichi Medical University, Japan, and international oral healthcare company, Sunstar, examined five years of dental health check-up data from 845 Sunstar employees. While previous short-term clinical trials have demonstrated the effectiveness of interdental cleaning devices in preventing periodontal disease and caries, long-term evidence has been limited.

The study found that individuals with healthy gums (no periodontal pockets), who used dental floss for 4-5 years had a lower risk of tooth loss compared to those with under a year of usage. Similarly, in patients with periodontal disease (presence of periodontal pockets), individuals who had used interdental brushes for 4–5 years experienced a lower risk of tooth loss than those who had used for less than a year.

Tooth loss is associated with increased risk of systemic diseases and a decline in quality of life. The research, published open access in BMC Oral Health, suggests that preventing tooth loss through proper oral care is crucial. Specifically, the study implies that long-term use of interdental cleaning devices, personalised to individual oral conditions, may play a vital role in maintaining oral health.

Analysing dental health data from 845 Sunstar employees (average age: 47.8) who received annual dental check-ups

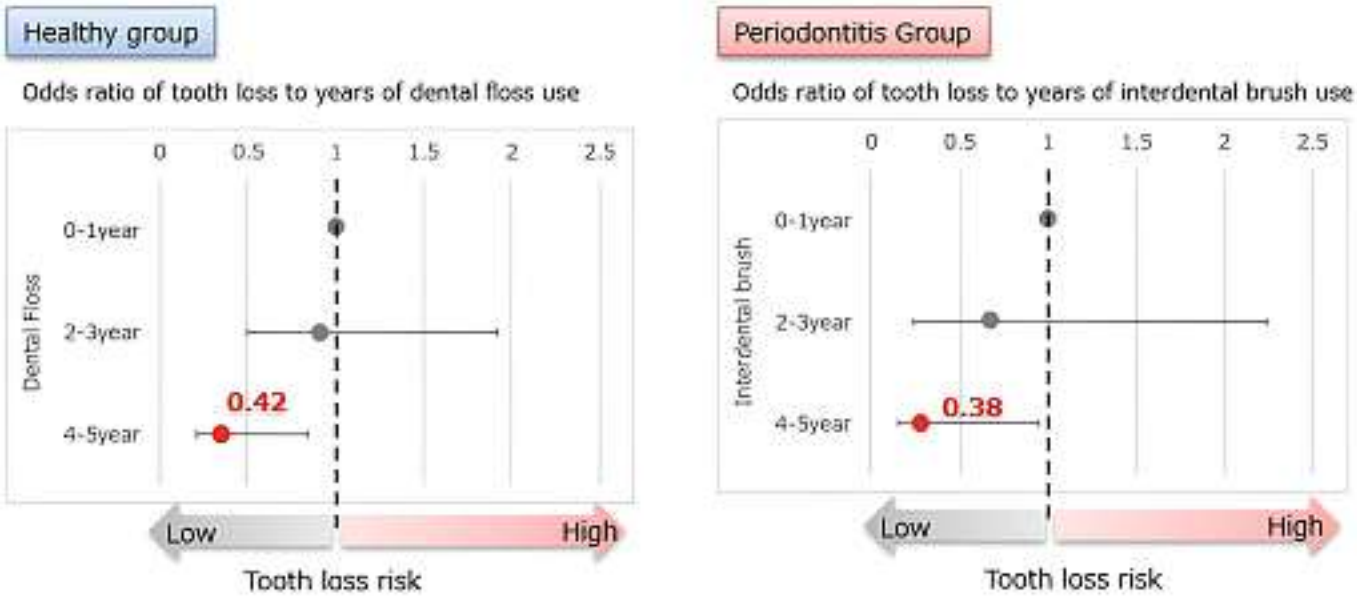


Figure 1: **Logistic regression analysis of association between tooth loss and use of interdental cleaners by initial periodontal status (adjusted for age, gender, dental caries experience, smoking, dental visits, and frequency of tooth brushing)**

from 2012 to 2017, the research focused on the type and duration of interdental cleaning device use (dental floss or interdental brush; categorised as 0-1 year, 2-3 years, or 4-5 years).

The presence or absence of tooth loss among participants was classified into two groups based on their Community Periodontal Index (CPI) scores from a 2012 check-up: the healthy group, with no periodontal pockets (CPI < 3), and the periodontitis group, with a presence of periodontal pockets (CPI ≥ 3).

The association between interdental cleaning device use and tooth loss was analysed separately for each group using a logistic regression model, adjusting for age, gender, dental caries experience (DMFT index), smoking status, years of dental visits, and brushing frequency.

Compared to the healthy group (645 people), the periodontitis group (200 people) had fewer women, was older, and had higher DMFT scores and more years of dental visits. Among the healthy group, long-term dental floss users were more common, while the periodontitis group had a higher proportion of long-term interdental brush users.

In the healthy group, participants who used dental floss for 4-5 years had an odds ratio of 0.42 for tooth loss, compared to those who used it for less than a year. In the periodontitis group, those who used interdental brushes for 4-5 years had an odds ratio of 0.38 for tooth loss compared to those with under a year of use.

The results indicate a significantly lower tooth loss risk with long-term use of appropriate interdental cleaning tools and highlight the importance of continuous use of interdental cleaning devices in preventing tooth loss. Dental floss was more effective in the healthy group, while interdental brushes were more effective in those with periodontal disease, demonstrating that choosing the right tool based on an individual's periodontal condition is crucial.

This longer-term study complements the findings of previous shorter-term studies and provides strong evidence on the importance of interdental cleaning as part of daily oral hygiene routines. Future research by the Department of Community and Family Medicine, Jichi Medical University and Sunstar using even larger datasets is expected to help establish more personalised and effective oral care guidance that can be offered as part of routine dental check-ups.

Reference

Nakao K, Ishikawa M, Yasuda T, Furui Y, Kotani K. The importance of using interdental cleaning devices on prevention of tooth loss in an employee population: a cross-sectional study. *BMC Oral Health*. 2024: DOI: https://doi.org/10.1186/s12903-024-05308-0

BY MEGAN FAIRHALL

TOP TIPS FOR SUCCESSFUL WHITENING

Demand for teeth whitening continues to grow. A recent report found that nearly half (48%) of adults surveyed planned to whiten their teeth within the next year.[1] Despite this, many colleagues are still unsure about implementing this treatment in practice.

Teeth whitening is minimally invasive, it gives an almost instant wow factor and boosts people's confidence. It also serves as an entry point for patients considering more complex aesthetic or restorative treatments, as patients become more motivated to have regular dental visits and maintain their oral health.[2] With the right comprehensive workflow, teeth whitening can offer significant benefits for the patient journey whilst providing tangible benefits for the practice.[3]

Selecting patients for teeth whitening

The health of a patient is the most important factor, over and above the aesthetics of the teeth. Prior to starting any whitening procedure, a patient's dental health and suitability for teeth whitening needs to be assessed. This includes addressing any potential dental concerns that could affect the outcome.

Begin by ensuring that the patient is dentally fit and clear of active dental diseases (including untreated caries, periodontal disease, severe enamel erosion, or dentine sensitivity) and hygiene appointments should be booked prior to teeth whitening, if required.

An examination of the teeth is essential, to confirm or rule out the presence of intrinsic stains (such as tetracycline stains), previous restorations (crowns, veneers), or visible white or brown spots which may not respond well to whitening and could therefore impact the outcome. In these instances, whitening can also have a reverse effect and intensify uneven discolouration of the teeth. Porcelain crowns, bridges, veneers, composite fillings and dental bonding will not whiten. Patients may decide to replace the restorations - at an additional cost - to match the new tooth shade post treatment. Managing expectations is therefore key to avoid any future issues, but it can be a pathway to greater treatment uptake.

After discussing the pros and cons of whitening, including tooth sensitivity levels, the dental professional will need to ensure there are no contraindications for teeth whitening.

Pregnant and breastfeeding women

These patients should avoid whitening treatments. Current research on the effects of tooth whitening agents on foetal development and nursing infants is limited. Women also tend to experience increased gum sensitivity with a higher risk of inflammation as a result of hormonal changes.

Patients under 18

EU Regulations forbid tooth whitening for this group of patients. In extreme clinical circumstances, dentists may proceed with the treatment after seeking advice from their indemnity provider and discussing the risks with the patients and parents/carers. Young patients are characterised as having larger pulp chambers than older patients which can lead to a higher risk of sensitivity after using whitening agents. Uneven whitening results are also possible depending on the maturation stage of enamel development.

Other health conditions

Adverse reactions to whitening agents can also be experienced by patients with cancer, autoimmune diseases. Immunosuppressive therapies may increase sensitivity. Patients with known allergies to hydrogen peroxide, carbamide peroxide are unsuitable candidates for tooth whitening.

Smokers

Dental professionals also need to have a clear understanding of the patient's alcohol and tobacco consumption and the impact on their oral health before proceeding with any treatment. The patient also needs to be made aware of how these habits can aggravate tooth stains.

Temporomandibular Joint Disorder (TMD)

Sufferers of TMJ may complain of enhanced jaw pain as a result of the use of whitening trays for extended periods. Patients need to be informed of this to avoid compliance issues and compromised outcomes.

Tooth anatomy

Variations in enamel thickness, mineral composition, or the presence of microcracks can make teeth whitening challenging.

Selecting a teeth whitening product

As one size does not fit all, offering a tailored treatment portfolio to each patient is advisable. For fast results or people with busy lifestyles, chairside whitening might be the ideal solution. Other patients may find that the take-home whitening is more suitable to their needs, if compliance is not an issue. The gold standard is a combination of the two.

From a dental professional angle, clinical confidence is still an obvious barrier and the fact that not all cases are the same can make the business of whitening appear challenging. This is why it is important to choose a brand you can trust and that means getting the right support whenever you need to.

I have personally used Philips Zoom! Whitening for over ten years which has helped me develop simplified protocols and workflows that are easy to incorporate into practice, for both simple and complex whitening. There are also products to suit every lifestyle, from in-practice to take home (night and day). Products have consistently evolved since the 1990's, innovating to align with regulations while improving efficacy and patient comfort.

Ultimately, dental hygienists and therapists should feel confident that they have ongoing support when implementing whitening into their practice. This includes the reassurance that they can reach out to their chosen provider for training, and support to ensure safe and effective teeth whitening treatment.

Author: Megan qualified from the University of Portsmouth in 2010. She is a Key Opinion Leader for both Philips and DMG Dental UK, regularly collaborating with industry leaders to support innovation and education. Passionate about empowering clinicians, Megan founded her own training academy, delivering in depth whitening courses to dental hygienists, dental therapists and dentists across the UK. She also sits on the committee of the British Dental Bleaching Society (BDBS), supporting national efforts to uphold standards in whitening and combat illegal practice.

Contacts:
W: www.meganfairhalldental.com
T: 07590542160
IG: @meganfairhall_

References

1. Oral Health Foundation (2021) National Smile Month UK Survey 2021. Broadcast Revolution. Sample 2,009.
2. Vlasova N, Samusenkov V, Novikova I, Nikolenko D, Nikolashvili N, Knyazeva M. Influence of professional teeth whitening on oral hygiene: long-term results. *J Int Soc Prev Community Dent.* 2021;**11(4)**:408–413. DOI: 10.4103/jispcd.JISPCD_71_21

THE DR GERALD LEATHERMAN AWARD

Nominations are now open for the Dr Gerald Leatherman Award – the first one was presented to Jean Bailey in 1994. Jean had been BDHA President for the period 1980-1982. Last year it was awarded to Mike Wheeler BEM, BSDHT President 2006-2008.

Nominations by 5.00pm on Friday 12th September 2025.

Email: enquiries@bsdht.org.uk

Background

The late Dr Gerald Leatherman played a very important part in promoting the role of the dental hygienist. Described as 'The Father of World Dentistry' by the late Dame Margaret Seward, he dedicated his professional life to raising the profile of both the dental hygienist and dental health promotion. He was actively involved with the British Dental Hygienists' Association (BDHA) and from the start played a leading role in the establishment of the first dental hygiene training school in England. Following his retirement as President of the BDHA in 1957 he was appointed Honorary Vice President until his death in 1991.

It was during his early professional years, whilst working in the United States, that he first experienced the 'new profession' of the dental hygienist and oral health clinics. Being the visionary that he was, Dr Leatherman could see the potential benefits of such a group of dental auxiliaries. He brought his ideas back to the UK and began the crusade with like-minded colleagues which led to the recognition of the dental hygienist as an integral member of the dental team.

The 'Dr Gerald Leatherman Award' was established in 1994 to perpetuate and honour his name.

The Dr Leatherman Award is held in the highest regard by the profession, with past recipients having demonstrated dedication, professionalism, and consistent support of the profession and the BSDHT. (Formally BDHA).

The Award is in the form of a lapel pin bearing the words: 'Dr Leatherman Award' and a certificate to commemorate the date that the presentation was made.

Nomination Criteria

Nominations must demonstrate how the nominee has shown:

- Consistent support to our profession
- Consistent support to BSDHT (Formally BDHA)
- Altruistic traits in achieving their goals

Self-nominations will not be considered.

The nominee does not need to be a dental hygienist or dental therapist.

Submission Documentation

To remain open to the various ways in which the qualities of a nominee may be conveyed, the Dr Gerald Leatherman Committee recommend the nomination should include:

- The name, address, and a contact telephone number of the nominee.
- A citation demonstrating why the nominee should be considered as a worthy recipient of the Dr Gerald Leatherman award, including:
    - how the nominee fulfils the criteria
    - a brief CV of the nominee.
- The name, title and academic or professional affiliation of the **proposer**, their contact details, BSDHT number (if applicable) and length of time the individual is known to them:
- The name, title and academic or professional affiliation of the **seconder**, their contact details, BSDHT number (if applicable) and length of time the individual is known to them.

Eligible Nominators

- All BSDHT members can propose or second a nomination.
- Nominations by a non-BSDHT member must be seconded by a full BSDHT member.
- The nomination form must be signed by the proposer and seconder and accompanied by synopsis and brief CV.

eCPD PAPER

BY JOHN STANFIELD

UNRAVELLING THE COMPLEXITY OF PERIODONTAL DISEASE
A SYSTEMS-BASED APPROACH TO MANAGEMENT THROUGH COMPLEXITY THEORY

1½ Hours eCPD PER PAPER

AIM

To critically examine the relevance and application of complexity theory in the understanding and management of periodontal diseases, with particular emphasis on the roles of dental hygienists and therapists within systems-based, person-centred care.

LEARNING OBJECTIVES

The author will:

1. Describe the core principles of complexity theory and explain how they apply to chronic conditions such as periodontal disease.
2. Recognise periodontal diseases as complex adaptive systems influenced by biological, behavioural, social and systemic factors.
3. Evaluate the clinical role of dental hygienists and dental therapists in navigating complexity through flexible, patient-centred care.
4. Critically appraise the BSP implementation guidance in the context of real-world, complexity-informed practice.
5. Apply systems thinking to interpret clinical scenarios and develop adaptive management plans for patients with complex needs.

LEARNING OUTCOMES

Having read this paper, the reader should be able to:

1. Define and explain key principles of complexity theory and how they relate to the multifactorial nature of periodontal diseases.
2. Explore periodontal disease as a complex adaptive system (CAS), illustrating the non-linear and interdependent factors influencing disease progression and management.
3. Evaluate the clinical implications of applying complexity theory, particularly for dental hygienists and therapists involved in prevention and maintenance.
4. Critically discuss the BSP implementation guidance in the context of complexity, highlighting both its contributions and limitations in real-world practice.
5. Present case examples demonstrating how complexity-informed approaches can enhance patient outcomes through adaptive, systems-based strategies.

Aligned to GDC development outcome: *A, B, C, D*

TO TAKE THE CPD PLEASE FOLLOW THE LINK OR SCAN THE QR CODE: HTTPS://WWW.SURVEYMONKEY.COM/R/DH-SEPT-2025

DEADLINE FOR SUBMISSIONS: 31ST OCTOBER 2025

ABSTRACT

Periodontal disease is a chronic inflammatory condition influenced by complex, interrelated factors — including microbial dysbiosis, host response, behaviour and systemic health. Traditional linear care models often fall short in addressing this complexity in day-to-day practice. This article introduces complexity theory as a framework for understanding periodontitis as a dynamic, adaptive condition. By applying systems thinking, clinicians, particularly dental hygienists and therapists, can respond more effectively to unpredictable clinical trajectories. The BSP 2020 S3 guidelines are used to provide structure and continuity, offering a flexible framework that supports clinical reasoning while allowing for person-centred adaptation. Real-world case examples illustrate how complexity-informed care enhances decision-making, interprofessional collaboration and patient outcomes.

KEY WORDS

Complexity Theory, Periodontal Disease, Systems-Based Care, Person-Centred Dentistry

Introduction

Periodontal disease remains a global public health burden, affecting nearly half the adult population and contributing significantly to tooth loss, systemic inflammation and reduced quality of life.[1] It results from a complex interplay between host immune response and a dysbiotic oral microbiome.[2] Despite advances in aetiological understanding, treatment protocols often retain a linear, disease-centric structure.[3] The BSP 2020 S3 implementation classification system introduced a framework for staging and grading periodontal disease that integrates biological, clinical, and risk factors.[4] While a significant step forward, its implementation in practice can be reductionist when used as a checklist, especially if clinicians are not encouraged to adapt the framework to patient-specific contexts.

Complexity theory, emerging from systems science, challenges the assumption of linear causality in favour of dynamism, feedback, and emergence.[5] In healthcare, this translates into recognising that outcomes result not from isolated factors, but from the dynamic interplay of multiple systems: biological, behavioural, psychosocial and environmental (Figure 1).[6] Dental hygienists and therapists, frequently involved in prevention, maintenance, and non-surgical care, are ideally positioned to operationalise these insights. This article explores periodontal disease as a complex adaptive system (CAS) and proposes strategies for managing it through a complexity-informed lens.

Complexity Theory Explained

These features of complex systems — non-linearity, feedback, emergence — are not abstract: they directly describe how periodontal disease behaves in practice.

Complexity theory, originally developed within mathematics and systems science, provides a framework for understanding phenomena that linear cause-and-effect models cannot adequately explain. Rather than viewing health and disease as the outcome of isolated variables, complexity theory recognises that real-world systems are composed of multiple interdependent agents interacting dynamically over time. In such systems, the whole is more than the sum of its parts, and outcomes emerge unpredictably from the relationships among system components.

Core Characteristics of Complex Systems

Non-linearity: In a linear system, changes in input produce proportionate changes in output. However, complex systems exhibit non-linearity: small changes can yield

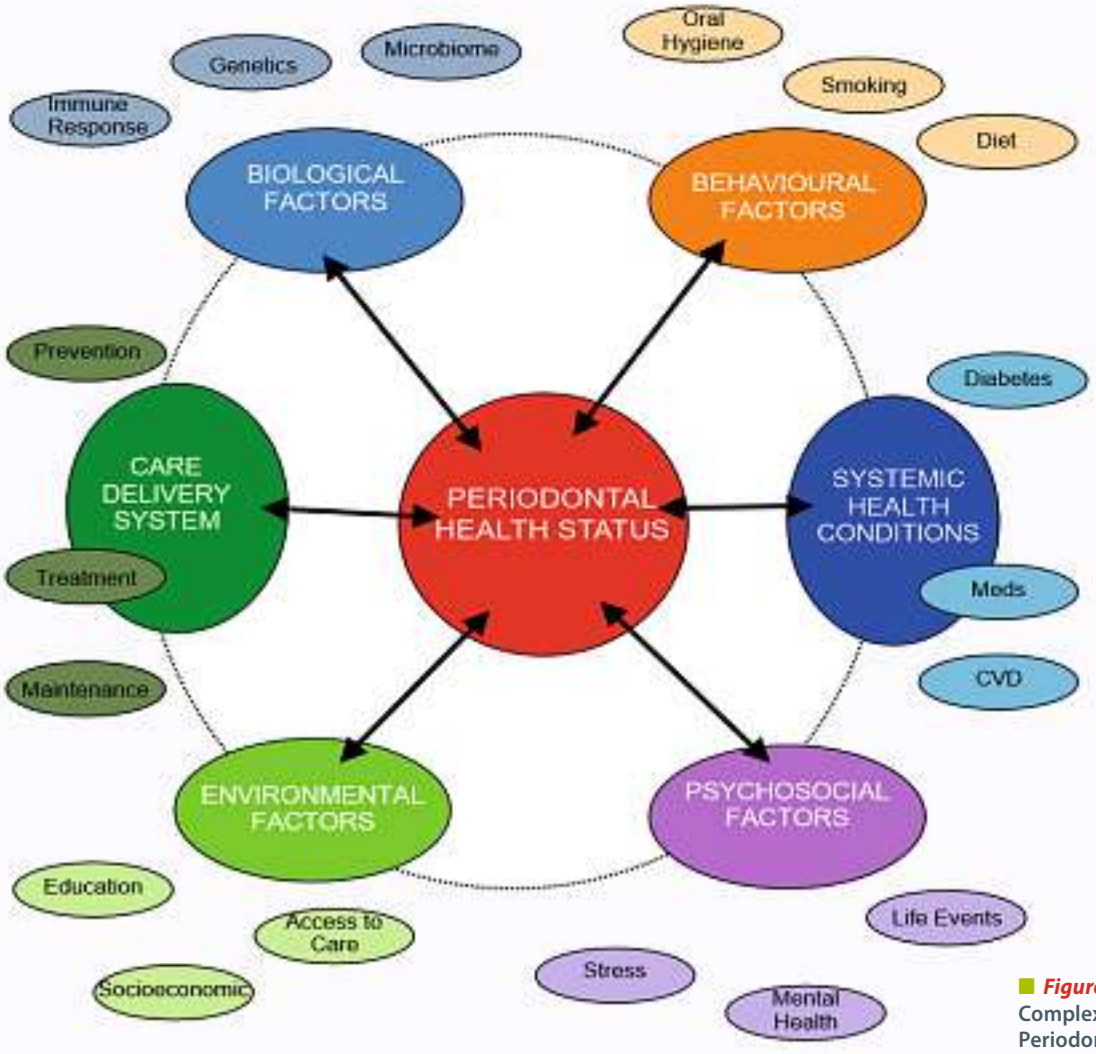


Figure 1: **Complexity of Periodontal Disease**

disproportionately large effects, and seemingly significant interventions may produce minimal change. In periodontal care, for instance, a brief motivational conversation may result in a dramatic shift in a patient's behaviour, while extensive mechanical treatment may produce only marginal gains if behavioural or systemic drivers remain unaddressed.[6]

Feedback Loops: Feedback is a hallmark of complex systems. Outcomes influence future inputs by altering the state of the system. In periodontal disease, inflammation may trigger behavioural changes (e.g., reduced oral hygiene due to discomfort), which in turn exacerbate the condition, creating a self-perpetuating loop.[6] Importantly, feedback in complex systems often involves delays or 'lagged feedback', where interventions may initially seem ineffective or even counterproductive before improvements become evident.[7] This helps clinicians anticipate that short-term deterioration does not necessarily indicate failure, but may precede long-term adaptation.

Emergence: Emergence refers to the spontaneous arising of novel properties, behaviours, or patterns that cannot be predicted solely by examining individual components.[8] For example, the synergistic impact of stress, diet, and immune status on periodontal status cannot be fully understood by analysing each in isolation. The patient's clinical trajectory emerges from the interactions between these variables over time.

Adaptation and Learning: Complex systems are adaptive. They evolve in response to environmental changes and internal dynamics.[9] For dental clinicians, this means recognising that a patient's needs, motivations, and risks are not fixed but evolve, necessitating flexible, iterative care strategies rather than rigid protocols.

Self-Organisation: Order and structure in complex systems often arise spontaneously, without top-down control.[10] In dental practice, team dynamics, patient engagement, and local service delivery models may self-organise into effective patterns of care even in the absence of central directives, especially when clinicians are empowered to innovate and respond in real time. For instance, informal mentoring relationships or patient follow-up routines often emerge spontaneously within practices, without being formally imposed, illustrating self-organisation in dental teams.

Application in Healthcare and Dentistry

In healthcare, complexity theory challenges the mechanistic view of the patient as a passive recipient of treatment. Instead, patients are understood as active participants embedded in broader biological, psychological, social, and environmental systems.[11] This perspective aligns closely with contemporary models of person-centred care.

In dentistry, particularly when managing chronic conditions like periodontitis, complexity theory enables a shift from procedural to systemic thinking. Periodontal disease is not merely a result of plaque accumulation but is modulated by factors such as stress, immune function, health literacy, sleep, and comorbidities. This systemic entanglement necessitates a nuanced approach that considers how these factors co-evolve and interact with one another. These insights directly inform how clinicians approach patients with periodontitis, recognising care as a dynamic negotiation rather than a static protocol.

Implications for Dental Hygienists and Therapists

Dental hygienists and therapists operate at the interface of patient behaviour, biology, and care delivery. Their roles inherently involve engaging with uncertainty, interpreting evolving clinical signs, and responding dynamically to feedback from the patient and system. Complexity theory provides them with a conceptual lens through which to:

- Understand why similar patients may respond differently to identical interventions.
- Appreciate that unpredictability is not necessarily failure, but a feature of complex care.
- Use structured tools like the BSP classification as starting points rather than prescriptions.
- View care pathways as emergent, co-created with patients rather than imposed upon them.

The BSP guidelines support a framework for classifying and staging periodontitis, integrating systemic risk factors such as smoking and diabetes.[4] However, these categories must not restrict clinical reasoning. Viewed through a complexity lens, such frameworks serve best as flexible scaffolds — guiding but not dictating care decisions. Used this way, classification frameworks support clinical reasoning rather than replace it.

When embraced, complexity theory empowers these professionals to practice with greater contextual intelligence — balancing evidence, clinical judgement, and relational responsiveness. It also highlights the importance of communication, trust-building, and systemic thinking as essential clinical skills.

Periodontal Disease as a Complex Adaptive System

The following clinical scenarios illustrate how recognising periodontitis as a complex adaptive system can reshape both diagnosis and management.

Periodontal disease typifies a complex adaptive system (CAS), with its progression influenced by microbial profiles, immune responses, behavioural patterns, socioeconomic status, and systemic health conditions.[11] These elements interact in dynamic ways, generating feedback loops that shape outcomes. For example, stress may impair immune regulation, increasing periodontal inflammation, which in turn exacerbates stress-related behaviours like smoking or poor oral hygiene.[12]

Case Example 1

A 51-year-old patient with Type 2 diabetes shows poor response to initial non-surgical therapy despite clinical

intervention. On further assessment, sleep apnoea, caregiver stress, and financial hardship are identified. Coordinated care with the patient's GP and motivational interviewing by the dental clinician reveal modifiable behavioural risks. Over time, the disease stabilises, not through procedural intensification but systemic engagement.

Reflections

This case illustrates the importance of identifying patterns rather than isolated events. The patient's periodontal condition is not just a 'local' disease but a reflection of broader systemic interactions.

Case Example 2

A 35-year-old female patient attends for a routine periodontal review. She presents with generalised gingival bleeding, pocketing in the 4–7 mm range, and inconsistent plaque control despite previous oral hygiene instruction. Her medical history is unremarkable, and there are no significant findings on radiographs.

During a comprehensive review by the dental hygienist, it is revealed that the patient recently relocated due to domestic violence, is experiencing anxiety, and has started working irregular night shifts. Her erratic routine and psychological distress have disrupted eating patterns, oral hygiene, and sleep. She also reports smoking intermittently to cope with stress.

Rather than intensifying mechanical therapy, the dental hygienist introduces short, supportive periodontal therapy (SPT) appointments focused on stabilisation and behaviour change. Motivational interviewing is used to explore ambivalence about smoking and self-care. With consent, the patient is referred to a mental health practitioner and receives advice on accessing local support services. Flexible appointment scheduling accommodates her shift work, and the dental team coordinates ongoing review with her GP.

After six months, the patient's periodontal parameters show significant improvement. Her plaque control is consistent, bleeding on probing has decreased, and she reports reduced smoking and improved emotional well-being.

Reflections

This case highlights how psychosocial disruption, occupational instability, and trauma can cascade through behavioural pathways to influence oral health outcomes. The resolution did not hinge on clinical escalation but on understanding the patient as part of a wider adaptive system, where healing was facilitated through trust, interprofessional collaboration, and responsiveness to change.

Clinical Implications for Dental Hygienists, Therapists and the Team

Dental hygienists and therapists are essential for the non-surgical and preventive management of periodontal disease. Their scope includes assessment, treatment planning, and ongoing maintenance.[13] A complexity-informed approach requires these clinicians to:

- Conduct holistic assessments including systemic and psychosocial dimensions.
- Interpret diagnostic data contextually using radiographs and six-point pocket charts.
- Adjust therapy plans iteratively based on feedback.
- Build trust using motivational interviewing and patient-centred education.

The BSP guidelines support a framework for classifying and staging periodontitis, integrating systemic risk factors such as smoking and diabetes.[4] However, these categories must not restrict clinical reasoning. In patients with high psychosocial complexity, flexibility is essential. Structured classification may help communication and standardisation but cannot replace clinical judgement.

Beyond individual clinical encounters, appreciating complexity also reframes how we design healthcare services and systems to support periodontal care.

Organisational and Systemic Implications

Healthcare systems are themselves complex and often resist linear solutions. Bureaucratic processes, funding constraints, and digital infrastructure all shape periodontal care delivery.[14] Systems that embrace complexity:

- Encourage distributed leadership.
- Support ongoing learning and innovation.
- Facilitate communication across dentistry and general healthcare.

Case Example 3

A community dental service implements a pilot programme where dental hygienists and therapists conduct initial oral health assessments for patients attending local anticoagulation and diabetes clinics. These clinicians are trained to use a brief risk screening tool to identify periodontal concerns, xerostomia, and soft tissue abnormalities. Patients flagged as high risk are directly referred to integrated dental-medical review clinics.

In one instance, a dental therapist identifies severe periodontal inflammation in a patient whose diabetes has recently worsened. The shared clinical record reveals poor HbA1c control and elevated inflammatory markers. The therapist contacts the patient's diabetic nurse, and together they adjust both periodontal and glycaemic management plans. Follow-up shows improvement in both oral and systemic parameters, attributed to timely communication and co-management.

Reflections

This case illustrates complexity-informed care at the system level. It showcases how organisational self-organisation can emerge when boundaries between professional roles are permeable, records are interoperable, and learning is bidirectional. Rather than simply applying guidelines in

isolation, the team adapts care in response to evolving patient and systemic feedback, aligning closely with the principles of complexity theory

Educational Implications

To work effectively within complexity-informed paradigms, dental education must evolve beyond the traditional emphasis on procedural proficiency and technical competence. Complexity theory underscores the reality that clinical environments are unpredictable, patient presentations are multifactorial, and outcomes are emergent rather than deterministic.[5] In this context, preparing students to respond adaptively, think critically, and act ethically in uncertain conditions is essential.

This pedagogical shift demands reconfiguration at multiple levels of the curriculum—from learning outcomes and teaching methods to assessment strategies and clinical placements.

Key Educational Approaches:

- **Problem-Based and Scenario Learning:** Rather than didactic instruction, learners benefit from engaging with ambiguous, real-world scenarios that reflect the multi-layered nature of clinical complexity. These approaches cultivate diagnostic reasoning, ethical deliberation, and the capacity to integrate diverse sources of knowledge in context. Complex cases—such as patients with overlapping psychosocial, behavioural, and systemic issues—encourage learners to identify interdependencies and develop multifaceted care strategies.
- **Systems Mapping and Interprofessional Training:** Understanding the patient within broader care systems requires visual and collaborative tools. Systems mapping—using diagrams to represent interacting influences—can help students conceptualise how oral health is shaped by and feeds into other domains of health and care. Interprofessional learning activities expose students to the dynamics of shared care, equipping them to navigate role boundaries and collaborate effectively across disciplines.
- **Teaching Flexibility and Professional Judgement:** Clinical decision-making in complex cases cannot always rely on rigid rules. Therefore, curricula must prioritise the development of 'adaptive expertise'—the ability to apply knowledge flexibly while maintaining clinical rigour.[8] This involves encouraging learners to question assumptions, tolerate ambiguity, and justify their decisions based on patient-centred reasoning rather than protocol adherence alone.
- **Embedding Reflection as a Clinical Skill:** Reflection becomes a critical bridge between complexity and competence. By engaging in structured reflection, students learn to navigate uncertainty and integrate diverse clinical signals—skills essential for complexity-informed practice. Structured reflective practice allows learners to make sense of uncertainty, identify areas for growth, and recalibrate their approach in light of new insights. Reflection also supports emotional resilience and ethical sensitivity, both of which are essential in managing complex, high-stakes, or emotionally charged situations.

Implications for Curriculum Design

Educational institutions must move beyond the idea of simply 'training to competence'. Instead, they must cultivate **contextual competence** — the ability to adapt knowledge and skills meaningfully in diverse and evolving situations. This means:

- Designing assessments that prioritise reasoning and responsiveness over rote accuracy.
- Creating opportunities for longitudinal patient care to observe change over time.
- Embedding public health, health inequalities, and social determinants of health into clinical teaching.
- Encouraging students to see themselves not just as clinicians, but as contributors to adaptive, evolving care systems.

The overarching goal is to prepare dental hygienists and therapists to function not merely as skilled operators, but as reflective practitioners and systems thinkers, capable of responding creatively and ethically to the challenges of contemporary healthcare. In doing so, educational programmes will better align with the demands of complex clinical realities and ultimately support more responsive, person-centred care.

Challenges and Critiques

While complexity theory offers valuable insights, it is not without limitations. Critics argue it is difficult to operationalise and lacks empirical predictability.[5] Guideline-based systems, performance audits, and legal frameworks demand measurable outcomes.

Nonetheless, complexity theory does not oppose evidence-based care. Rather, it contextualises it. It encourages adaptive expertise, where clinicians balance best evidence with nuanced understanding of systems, relationships, and individual variance.

Conclusion

Periodontal disease cannot be adequately understood or managed using reductionist paradigms alone. Dental hygienists and therapists should engage with complexity theory to offer more holistic, adaptive care. This requires rethinking not just clinical decisions, but the mindset with which clinicians approach uncertainty, change, and patient individuality.

Revisiting the BSP guidelines through the lens of complexity does not diminish their importance; rather, it enables clinicians to apply them with greater contextual sensitivity. These guidelines should serve as navigational aids, not as rigid scripts, within a landscape that is constantly shifting due to systemic, behavioural, and psychosocial influences.

By embracing complexity, the dental team moves from protocol execution to system navigation. This shift allows for more responsive, integrated care and promotes professional autonomy rooted in critical thinking and ethical judgment. It also fosters stronger interprofessional collaboration and improves the alignment between clinical practice and the lived realities of patients.

Ultimately, engaging with complexity theory is not an abstract exercise, it is a practical necessity. It offers a pathway towards care that is more person-centred, equitable, and sustainable. For dental hygienists and therapists, it affirms their roles as key agents within dynamic healthcare systems, capable of shaping outcomes through insight, adaptability, and relational practice.

Author: John Stanfield PhD, MSc, PGCT&LCP, FHEA, Assoc FCG Dent, RDH has held key leadership roles, including serving as the Dental Care Professional (DCP) Lead for NHS England and as a Council Member of the College of General Dentistry. He was also the inaugural Chair of its Faculty of Dental Hygiene & Therapy. Additionally, John contributed editorially as the editor of Team in Practice at the Faculty of General Dental Practice (FGDP). Currently in clinical practice in Cheshire, John holds a PhD in Technology-Enhanced Learning from Lancaster University, an MSc in E-Learning Technology from the University of Portsmouth, and a Diploma in Computing from the University of Oxford.

Contact: info@johnstanfield.co.uk

References

1. Bernabe E, Marcenes W, Hernandez CR, Bailey J, Abreu LG, Alipour V, et al. Global, regional, and national levels and trends in burden of oral conditions from 1990 to 2017: a systematic analysis for the global burden of disease 2017 study. *J Dent Res.* 2020;**99(4)**:362-373. https://doi.org/10.1177/0022034520908533
2. Hajishengallis G. Periodontitis: from microbial immune subversion to systemic inflammation. *Nat Rev Immunol.* 2015;**15(1)**:30-44. https://doi.org/10.1038/nri3785
3. Chapple ILC, Van der Weijden F, Doerfer C, Herrera D, Shapira L, Polak D, et al. Primary prevention of periodontitis: managing gingivitis. *J Clin Periodontol*. 2015;**42(Suppl 16)**:S71-S76. https://doi.org/10.1111/jcpe.12366
4. West N, Chapple ILC, Claydon N, D'Aiuto F, Donos N, Ide M, et al. BSP implementation of European S3-level evidenced-based treatment guidelines for stage I–III periodontitis in UK clinical practice. *J Dent*. 2021;**106**:103562. https://doi.org/10.1016/j.jdent.2020.103562
5. Plsek PE, Greenhalgh T. The challenge of complexity in health care. *BMJ*. 2001;**323(7313)**:625-628. https://doi.org/10.1136/bmj.323.7313.625
6. Sturmberg JP, Martin CM. Handbook of systems and complexity in health. Springer; 2013. https://doi.org/10.1007/978-1-4614-4998-0
7. Mitchell M. Complexity: A guided tour. Oxford University Press; 2009.
8. Fraser SW, Greenhalgh T. Coping with complexity: educating for capability. *BMJ*. 2001;**323(7316)**:799-803. https://doi.org/10.1136/bmj.323.7316.799
9. Holland JH. Hidden order: how adaptation builds complexity. Addison-Wesley; 1995.
10. Thompson DS, Fazio X, Kustra E, Patrick L, Stanley D. Scoping review of complexity theory in health services research. BMC Health Serv Res. 2016;16:87. https://doi.org/10.1186/s12913-016-1343-4
11. Linden GJ, Herzberg MC. Periodontitis and systemic diseases: a record of discussions of working group 4 of the joint EFP/AAP workshop. *J Clin Periodontol.* 2013;**40(Suppl 14)**:S20-S23. https://doi.org/10.1111/jcpe.12091
12. Watt RG, Daly B, Allison P, Macpherson L, Venturelli R, Listl S. Ending the neglect of global oral health: time for radical action. *The Lancet*. 2019;**394(10194)**:261–272. https://doi.org/10.1016/S0140-6736(19)31133-X
13. Rollnick S, Miller WR. Motivational interviewing in health care: helping patients change behavior. Guilford Press; 2008.
14. Robertson M, Cresswell K, Takian A, Petrakaki D, Crowe S, Cornford T, et al. Implementation and adoption of nationwide electronic health records in secondary care in England: qualitative analysis of interim results from a prospective national evaluation. *BMJ*. 2010;**341**:c4564. https://doi.org/10.1136/bmj.c4564

Cite this article:

Stanfield J. Unravelling the complexity of periodontal disease: a systems-based approach to management through complexity theory. Dental Health 2025; 64(5): 30-35. DOI:https://doi.org10.59489bsdht167

THE ORAL HEALTH SUMMIT

28-29 NOVEMBER 2025

EDINBURGH INTERNATIONAL CONFERENCE CENTRE

2025 JOINT CONFERENCE HOSTED BY

BSDHT
The British Society of Dental Hygiene & Therapy

BSP
British Society of Periodontology and Implant Dentistry

#OHS

#PERIO/SMILESAHEAD

VIEW THE PROGRAMME AND BOOK YOUR PLACE AT **BSDHT.ORG.UK**

BY HAFEEZ AHMED

MIND THE GAP

Figure 1: The Gap

"How long have you had the gap between your front teeth?" is a simple question, however, the answer is rarely straight forward. For this patient, the gap had opened up in the previous year and it was one of the main reasons for the referral, yet its significance was lost on her. She, like so many other patients, recalled a terrible, trauma-based event involving her front teeth and a door, but did not associate the incident with periodontitis or the progressive destruction of the periodontium.

Context

Most patients find it difficult to relate what is happening deep inside their gums to the visual appearance of their teeth. One reason for this is they do not automatically associate the words 'periodontitis' and 'periodontium' with bone or bone loss. In this respect it helps when the words used in discussions include 'bone' and 'boss loss' as they make communication topic-specific and unambiguous.[1] To this end, around 2006, I carefully devised the following statements to explain periodontal disease to patients in a way I thought would be most effective:

- Gum disease is an infection that irreversibly destroys the bone that holds your teeth in place.
- When a significant amount of bone has been destroyed, your teeth will feel loose or wobbly.
- When insufficient bone remains to support your teeth, they will start to drift or fall out.

The above statements might not be to everyone's liking but they are simple, short, topic-specific and to the point. When I used them to explain to this patient why a gap had opened up between her front teeth she said: "It sounds really serious". She understood what I said and this allowed us to swiftly move on to discussing its consequences and the benefits of resolving the gum disease. It also allowed us to simultaneously discuss the benefits of orthodontic therapy to restore her teeth back into their original positions and back into a functional non-traumatic occlusion.[2]

Figures 2 and 3 are images of long cone periapical radiographs of the upper anterior teeth. The radiographs are typical of the advanced bone loss around the anterior teeth.

Figure 2: Long cone periapical radiograph of upper central incisors

Figure 3: Long cone periapical radiograph of upper left lateral incisor

Figure 4 shows that in the resting position the patient's upper left central incisor sits beyond the vermillion border of the lower lip. This, in my experience, allows the tooth to be pushed more in the buccal direction.

Figure 4: Central incisors sitting on the lower lip

Diagnosis

A diagnosis of advanced active chronic generalised adult periodontitis with bone loss up to 80% around some teeth was made (stage iv as per the current EFP S3 level clinical practice guideline). The upper left lateral incisor was diagnosed with reversible pulpitis.

Post-examination discussion and consent

During the discussion the patient said: "This has really affected me – badly!" She felt an element of disability because she avoided using teeth 21 and 22 for incising her food because they had become visibly mobile when she chewed. The gap between her central incisors had made her profoundly anxious.[3] For many years she had lived in fear that her 'smile teeth' could fall out at any moment, but had failed to fully comprehend why they were mobile or drifting. The discussion became even more intense and intimate when she experienced an emotional outpouring and started to cry uncontrollably. She confided in me that between 2006 and 2011 she stopped going to her dentist and her hygienist due to a post-traumatic stress disorder resulting from complications following a hysterectomy. She also told me that she did not like that her employer pressurised her into doing things she knew to be wrong and disagreed with: she was a patient complaints handling manager at a local hospital. She wished she had more courage.

Treatment in Brief

The treatment was planned in accordance with the current recommendations[4,5] and broadly divided into:

1. Cause related periodontal therapy
2. Review and revise
3. Corrective periodontal therapy
4. Review and revise
5. Orthodontic therapy
6. Review and revise (anticipating endodontic therapy tooth 22)
7. Maintenance therapy

Overall, the treatment was extensive, complicated and demanding, however throughout it the patient was most appreciative. The treatment plan

Figure 5: the upper anterior teeth post orthodontic therapy

was agreed in November 2011, the periodontal treatment was completed by January 2013. It quickly became apparent that whilst the radiographs were helpful, they had not revealed the extent of the bone loss[6], especially on buccal and palatal surfaces. Tooth 21 had lost approximately 60% of the bone on its palatal surface, and tooth 22 had lost approximately 70-80%. Tooth 22 became hypersensitive and untouchable in the healing phases of treatment but ultimately endodontic therapy was avoided. The lower third molars were removed during phase 3 of the treatment. The objective of orthodontic therapy changed from merely repositioning the splayed teeth to include correcting the underlying Class 2 Division 2 malocclusion. During the orthodontic therapy, supportive periodontal therapy was provided at monthly intervals.[7] Orthodontic therapy was completed with the fitting of fixed retainers in March 2015. The retainers were positioned as far from the gums as possible.[8]

Figure 5 shows the outcome of the orthodontic treatment - the gap between the central incisors has been closed and they no longer rest on the lower lip.

Outcome

The periodontal condition was fully resolved with some residual non-bleeding pockets between 4-5mm on teeth with the most severe bone loss. The maintenance phase commenced in May 2015 and the patient has continued with the plan, which started in 2012, without interruption.

A few years after the treatment was completed, she resigned from her job and is no longer a stressed-out patient complaints handling manager.

Figure 6: Radiographic appearance of the repositioned upper anterior teeth with the fixed retainer

Insight

I have treated several hundred patients with splayed upper anterior teeth; Figure 8 is another example.

Figure 7: The patient's smile in 2023

Figure 8: Splayed upper anterior teeth

Once the teeth have splayed, the post initial assessment discussion is one of the most complex. Not only is the patient required to commit to periodontal therapy, they are also required to commit to orthodontic therapy. As it becomes apparent to them that they are required to consent to a greater number of more complicated risks, than when their disease was mild and moderate, they tend to blame previous care providers and typically say: "Why has this been allowed to happen?" or "I should have been told this before!" and "If I'd been told this sooner this could have been prevented." Often, if not always, my response is: "Not in my experience".

That said, I am yet to meet a patient who did not readily understand what I was saying when I used the simple, short, topic-specific statements I presented at the beginning of this article.[1]

Author: Hafeez Ahmed, Specialist Periodontist, Binswood House Dental Practice, Royal Leamington Spa, WarwickshireCV32 5SE.

Contact:
binswoodhousedentalpractice@btinternet.com

References

1. Ahmed H. The behavioural influence on a patient of a clinician's choice of topic specific words. *Dent Health.* 2024;**63(2)**:34-37. https://doi.org/10.59489/bsdht141
2. Papageorgiou SN, Antonoglou GN, Michelogiannakis D, Kakali L, Eliades T, Madianos P. Effect of periodontal–orthodontic treatment of teeth with pathological tooth flaring, drifting, and elongation in patients with severe periodontitis: A systematic review with meta-analysis. *J Clin Periodontol.* 2021;**49**:102-120. https://doi.org/10.1111/jcpe.13529
3. Tonetti MS, Jepsen S, Jin L, Otomo-Corgel J. Impact of the global burden of periodontal diseases on health, nutrition and wellbeing of mankind: A call for global action. *J Clin Periodontol.* 2017;**44(5)**:456–462. https://doi.org/10.1111/jcpe.12732
4. Herrera D, Sanz M, Kebschull M, Jepsen S, Sculean A, Berglundh T, et al. Treatment of stage IV periodontitis: the EFP S3 level clinical practice guideline. *J Clin Periodontol.* 2022;**49**:4-71. https://doi.org/10.1111/jcpe.13639
5. Eliades T, Katsaros C. The ortho-perio patient – clinical evidence and therapeutic guidelines. Quintessence Publishing, 2019. https://cir.nii.ac.jp/crid/1971149384835332022
6. Tugnait A, Clerehugh V, Hirschmann PN. The usefulness of radiographs in diagnosis and management of periodontal diseases: a review. *J Dent.* 2000;**28(4)**:219-226. https://doi.org/10.1016/S0300-5712(99)00062-7
7. Jiang C, Fan C, Yu X, Xu T, Cai J, Fan X, Zhang J. Comparison of the efficacy of different periodic periodontal scaling protocols for oral hygiene in adolescents with fixed orthodontic appliances: A prospective cohort study. *Am J Ortho Dentofacial Orthop.* 2021;**159(4)**:435–442. https://doi.org/10.1016/j.ajodo.2020.01.026
8. Arn ML, Dritsas K, Pandis N, Kloukos D. The effects of fixed orthodontic retainers on periodontal health: A systematic review. Am *J Ortho Dentofacial Orthop.* 2020;**157(2)**:156–164. E17. https://doi.org/10.1016/j.ajodo.2019.10.010

Cite this article:

Ahmed H. Mind the gap! Dental Health 2025;64(5):37-39. DOI: https://doi.org10.59489bsdht168

SYNTHETIC APPROACHES TO TOOTH REGENERATION IN THE MANAGEMENT OF DENTAL CARIES

CHLOE BERSAMINA, JAMES CARSON, KAREN SOLER CANTO, SAMANTHA DAY, JESSICA HENSMAN, TAYLOR MUIR, AARON TUFFLEY, KELSEY MOSS

Introduction

The purpose of this scoping review was to: analyse synthetic materials and methods of tooth regeneration utilised in the regeneration of dentinal tissues; evaluate their efficacy; and compare their mechanisms of action. Additionally, this review highlights the barriers faced when implementing these innovative procedures into clinical practices.

Gap analysis

A search was conducted across multiple databases, including Google Scholar, JBISRIR, Cochrane library, PubMed and PROSPERO which revealed no clear synthesis of evidence around this topic. It was determined that there is currently a lack of scoping and systematic reviews addressing the synthetic approaches to tooth regeneration in the management of dental caries. Given the diverse methodologies being explored, such as various synthetic biomaterials, this review synthesises existing published knowledge to clarify which materials can be used for tooth regeneration.

Methodology

This scoping review followed the Joanna Briggs Institute (JBI) methodology for evidence synthesis and was registered on the Open Science Framework platform.

Literature search questions were developed as a guide for the literature search (Fig.1).

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist and flowchart were used. A literature review was conducted from 1946 to October 2024 through OVID

Research Question	Data Collected	Type of planned analysis	Presented format
1. What are the current synthetic methods of tooth regeneraton and their associated properties?	Synthetic dental materials including: • Mineral Trioxide Aggregate (MTA) • Biodentine • Calcium hydroxide • Glass Ionomer Cement • Bioactive Glass	Qualitative – comprehensive review of the literature describing the materials effectiveness.	Table comparing the materials properties, success rate and effectiveness accompanied by a narrative synthesis to summarise the main findings.
2. What is the mechanism of action of how synthetic regenerative materials generate tertiary dentine?	Synthetic dental materials including: • Mineral Trioxide • Biodentine • Calcium hydroxide • Glass Ionomer Cement • Bioactive Glass	Qualitative – comprehensive review of the literature describing the materials effectiveness.	Conceptual framework clearly identifying the properties of each synthetic material
3. Which synthetic materials produce more tertiary dentine?	Measurable date providing quantitative results on tertiary dentine formation. Data points include dentine thickness (mm) or the percentage of tertiary dentine formed.	Quantitative – statistical comparison using descriptive statistics (mean standard deviation) and statistical tests such as t-test to evaluate significant differences between materials.	Bar chart for visualisation of comparison.
4. Which material reported the greatest percentage increase of dentinal thickness?	Numerical data from clinical and in-vitro/vivo studies reporting measured dentine thickness (mm) Standardised comparisons were based on the clinical trial conditions.	Quantitative – statistical comparison using descriptive analysis (mean, standard deviation) and inferential statistics such as t-tests to assess the significant differences in dentine formation.	Bar chart or box plot.

Figure 1: **Analysis plan including research questions.**

Patient/ Population and/ or Problem	Concept/ Exposure	Context/ Outcome
"tooth Regeneration" OR "Tooth decay" OR caries OR caries OR cariogenic OR carious	"Tertiary dentine" OR Biodentine, MTA OR "mineral trioxide aggregate" OR "Calcium hydorxide" OR "Calcium Silicate" OR "Bioactive glass"	"Dental Care" OR "dental treatment"

Figure 2: Search terms created to explore the synthetic methods of tooth regeneration.

Medline, EBSCO Web of Science, and grey literature databases with the search terms (Fig.2).

Eligibility Criteria

The search focused on teeth in the human dentition affected by natural, and artificially induced dental caries, but also included regenerative mechanisms involving the pulpal tissues through stem cells. No limitations were applied regarding age, location or study design.

Data Extraction

The extracted data included author names, publication years, study details, population demographics, key concepts, methodologies, dentine regeneration techniques, materials used, results and study limitations. This was tabulated using Microsoft Excel 2017.

Results

The PRISMA-flow chart demonstrates the papers found using the search criteria (Fig.3).

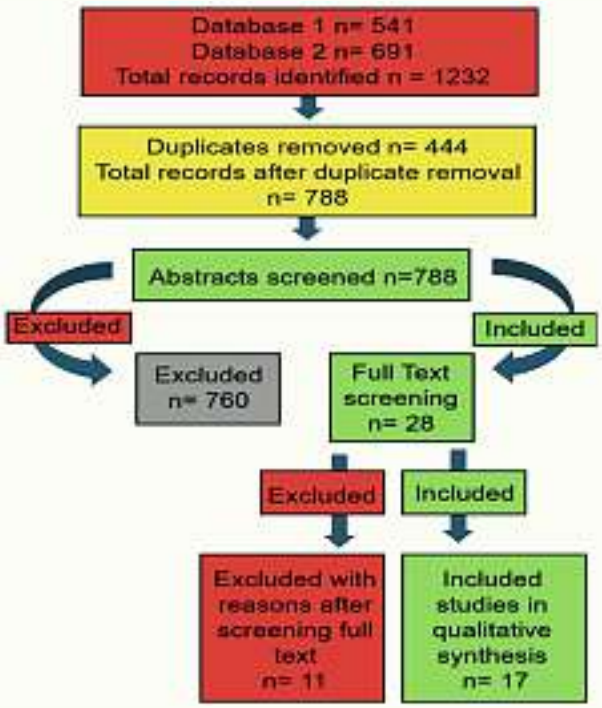
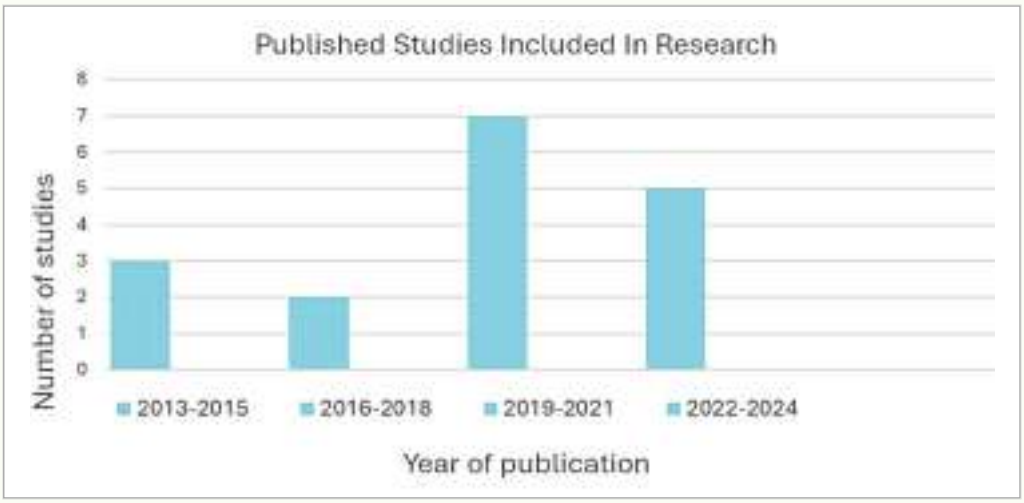


Figure 3: PRISMA flow-chart displaying included and excluded studies following screening

Figure 4: Papers selected for analysis

Papers selected for analysis	
Paper 1	Dai LL, Mei ML, Chu CH, Lo ECM. Mechanisms of bioactive glass on caries management: a review. Materials. 2019;12(24):4183. www.ncbi.nlm.nih.gov/pmc/articles/PMC6947261/, https://doi.org/10.3390/ma12244183. (Accessed 26 Feb. 2025).
Paper 2	Nowicka A, Wilk G, Lipski M, Kotecki J, Buczkowska-Radlinska J. Tomographic evaluation of reparative dentin formation after direct pulp capping with Ca(OH)2, MTA, Biodentine, and Dentin Bonding System in human teeth. J Endodont. 2015;41(8):1234–1240. PubMed, pubmed.ncbi.nlm.nih.gov/26031301/, https://doi.org/10.1016/j.joen.2015.03.017. (Accessed 26 Feb. 2025).
Paper 3	Schwendicke F, Al-Abdi A, Moscardo AP, Cascales AF, Sauro S. Remineralization effects of conventional and experimental ion-releasing materials in chemically or bacterially-induced dentin caries lesions. Dent Mat. 2019;35(5):772–779. PubMed, pubmed.ncbi.nlm.nih.gov/30853209/, https://doi.org/10.1016/j.dental.2019.02.021. (Accessed 26 Feb. 2025).
Paper 4	Chandak M, Chandak MSS, Rathi CH, Chandak P, Relan K. The mineral trioxide aggregate in vital pulp therapy of permanent teeth - a systematic review. J Evolution Med Dent Sci. 2021;10(1):34-38. https://doi.org/10.14260/jemds/2021/7. (Accessed 26 Feb. 2025).
Paper 5	Eftimoska M, Apostolska S, Rendzhova V, Gjorgievska E, Stevanovic M, Ivanovski K et al. Clinical and histological analyzes of the response of the pulp after its direct capping with Calxyl, MTA and biodentine. Res J Pharmaceut Biolog Chem Sci. 2015;6(4):1097-1111. (Accessed 26 Feb. 2025).
Paper 6	Pires PM, Santos TP, Fonseca-Goncalves A, Pithon MM, Lopes RT, Neves AA. Mineral density in carious dentine after treatment with calcium silicates and polyacrylic acid-based cements. Int Endodont J. 2018;51(11):1292-1300. https://doi.org/10.1111/iej.12941. (Accessed 26 Feb. 2025).
Paper 7	Roma M, Gupta R, Hegde S. A prospective clinical study with one year follow up of deep caries management using a novel biomaterial. BMC Res Notes. 2022;15(1):150. https://doi.org/10.1186/s13104-022-06041-z (Accessed 26 Feb. 2025).
Paper 8	Dammaschke T, Nowicka A, Lipski M, Ricucci D. Histological evaluation of hard tissue formation after direct pulp capping with a fast-setting mineral trioxide aggregate (RetroMTA) in humans. Clin Oral Investigat. 2019;23:4289–4299. https://doi.org/10.1007/s00784-019-02876-2. (Accessed 26 Feb. 2025).
Paper 9	Pires PM, Ionescu AC, Perez-Garcia MT, Vezzoli E, Soares IPM, Brambilla E, et al. Assessment of the remineralisation induced by contemporary ion-releasing materials in mineral-depleted dentine. Clin Oral Investigat. 2022;26:6195-6207. https://doi.org/10.1007/s00784-022-04569-9. (Accessed 26 Feb. 2025).
Paper 10	Swanson WB, Gong T, Zhang Z, Eberle M, Niemann D, Dong R, et al. Controlled release of odontogenic exosomes from a biodegradable vehicle mediates dentinogenesis as a novel biomimetic pulp capping therapy. J Control Release. 2020;324:679–694. https://doi.org/10.1016/j.jconrel.2020.06.006. (Accessed 26 Feb. 2025).
Paper 11	Grewal N, Salhan R, Kaur N, Patel HB. Comparative evaluation of calcium silicate-based dentin substitute (Biodentine®) and calcium hydroxide (Pulpdent) in the formation of reactive dentin bridge in regenerative pulpotomy of vital primary teeth: triple blind, randomized clinical trial. Contem Clin Dent. 2016;7(4):457-463. https://doi.org/10.4103/0976-237x.194116 (Accessed 26 Feb. 2025).
Paper 12	Paper 12: Manzoor K, Manzoor S, Qazi Z, Ghaus S, Saleem M, Kasif M. Remineralization effect of bioactive glass with and without fluoride and casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) on artificial dentine caries: an in vitro study. Cureus. 2024;16(10):e70801. https://doi.org/10.7759/cureus.70801. (Accessed 26 Feb. 2025).
Paper 13	Kuru E, Eronat N, Turkun M, Cogulu D. Comparison of remineralization ability of tricalcium silicate and of glass ionomer cement on residual dentin: an in vitro study. BMC Oral Health. 2024;24:732. https://doi.org/10.1186/s12903-024-04475-4. (Accessed 26 Feb. 2025).
Paper 14	Bhatt RA, Patel MC, Bhatt R, Patel C, Kaushal J, Disha M. A comparative evaluation of light cure calcium silicate and resin-modified glass ionomer as indirect pulp capping agent in primary molars: a randomized clinical trial. Dent Res J. 2023;20(1):18. https://doi.org/10.4103/1735-3327.369620. (Accessed 26 Feb. 2025).
Paper 15	Elchaghaby MA, Moheb DM, El Shahawy OI, Abd Alsamad AM, Rashed MAM. Clinical and radiographic evaluation of indirect pulp treatment of young permanent molars using photo-activated oral disinfection versus calcium hydroxide: a randomized controlled pilot trial. BDJ Open. 2020;6:4. https://doi.org/10.1038/s41405-020-0030-z. (Accessed 26 Feb. 2025).
Paper 16	Stafuzza TC, Vitor LLR, Rios D, Cruvinel T, Neto NL, Sakai VT et al. A randomized clinical trial of cavity liners after selective caries removal: one-year follow-up. J Applied Oral Sci. 2019; 27. https://doi.org/10.1590/1678-7757-2018-0700. (Accessed 26 Feb. 2025).
Paper 17	Petrou M A, Alhamoui FA, Welk A, Altarabulsi MB, Alkilzy M, Splieth CH. A randomized clinical trial on the use of medical Portland cement, MTA and calcium hydroxide in indirect pulp treatment. Clin Oral Investigat. 2013;18:1383-1389. https://doi.org/10.1007/s00784-013-1107-z. (Accessed 26 Feb. 2025).

Figure 5: Bar-graph representing publication dates of studies.



Data Analysis

Data extraction was conducted by the investigators in pairs and the studies were categorised as qualitative or quantitative. The results were visually represented using flow charts, pie charts, and graphs. Recurring themes across the studies were identified and systematically categorised.

Research question 1

What are the current synthetic methods of tooth regeneration and their associated properties?

Research question 2

What is the mechanism of action of how synthetic regenerative materials generate tertiary dentine?

This conceptual framework was created with data extracted from the selected papers. The flowchart demonstrates the different mechanisms each material initiates in the sequence of dentine regeneration. More research into the specific sequence of tooth regeneration would allow for the creation of a detailed framework. MTA and Biodentine demonstrated the ability to induce anti-inflammatory cytokines

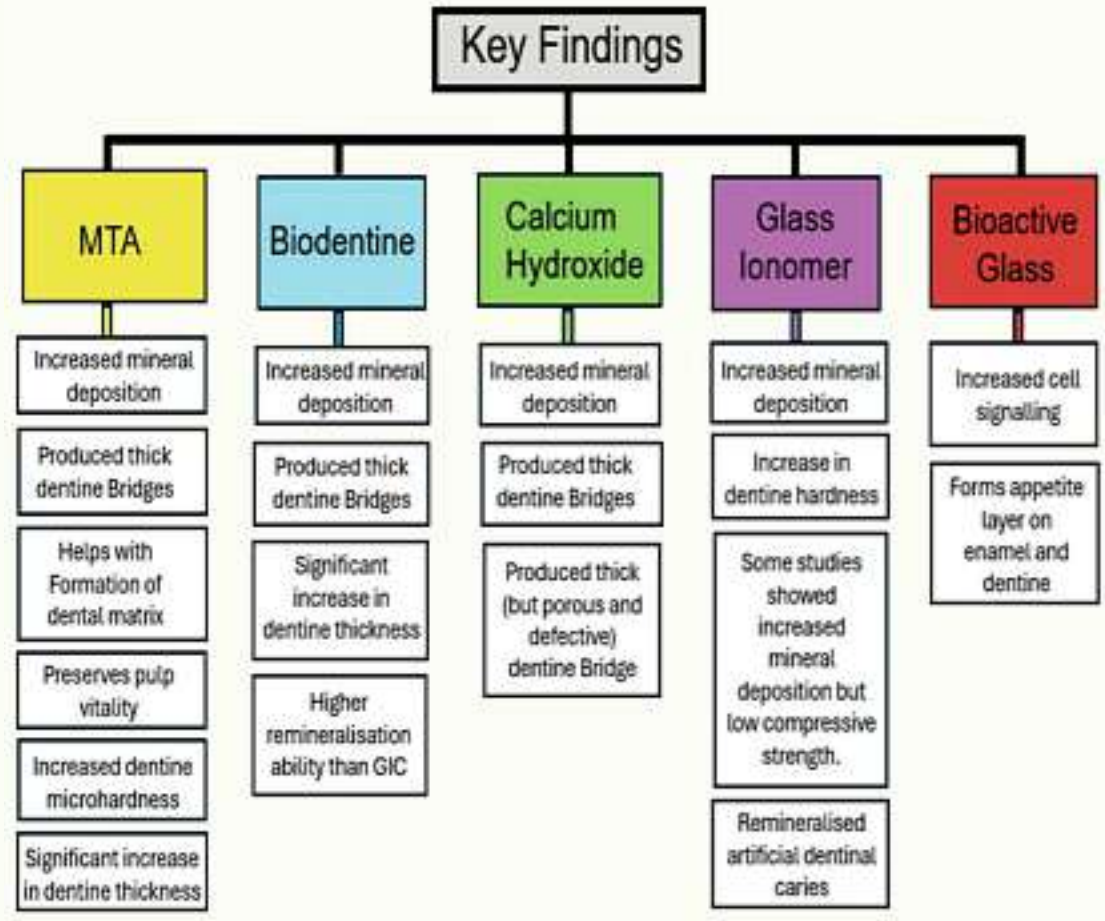
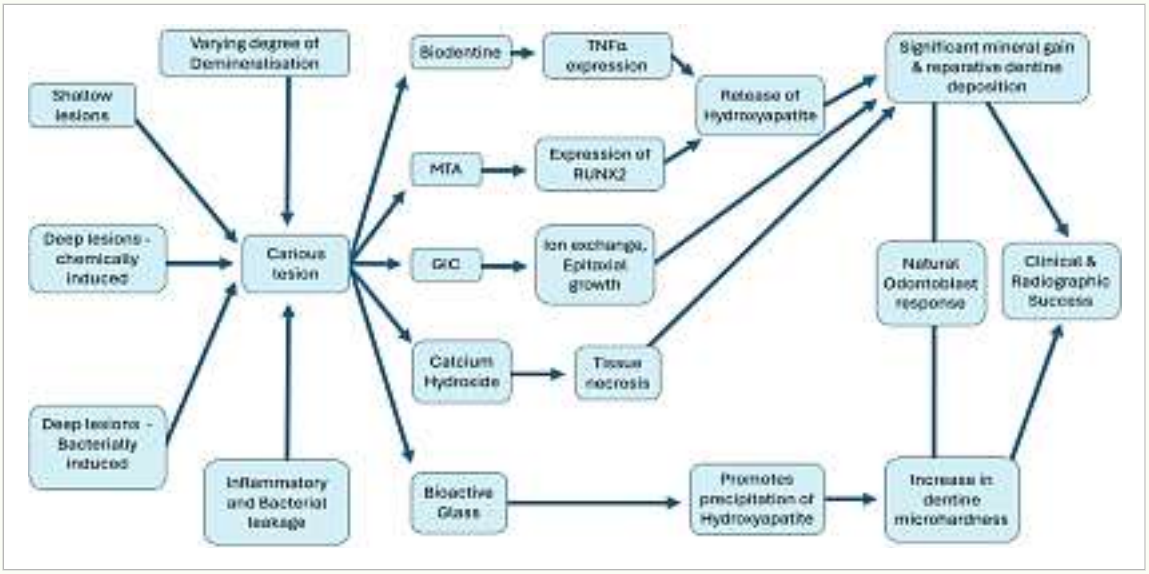


Figure 6: Flow chart exploring the synthetic methods of tooth regeneration to determine which materials have shown promising results regarding the formation of reactionary and or reparative dentine.

Figure 7: Conceptual framework.



(TNF-alpha and RUNX2), to enhance reparative dentine formation, stimulate natural odontoblast responses, and ultimately contribute to both clinical and radiographic success in dentine deposition, and enamel remineralisation.

Research question 3

Which synthetic materials produce more tertiary dentine?

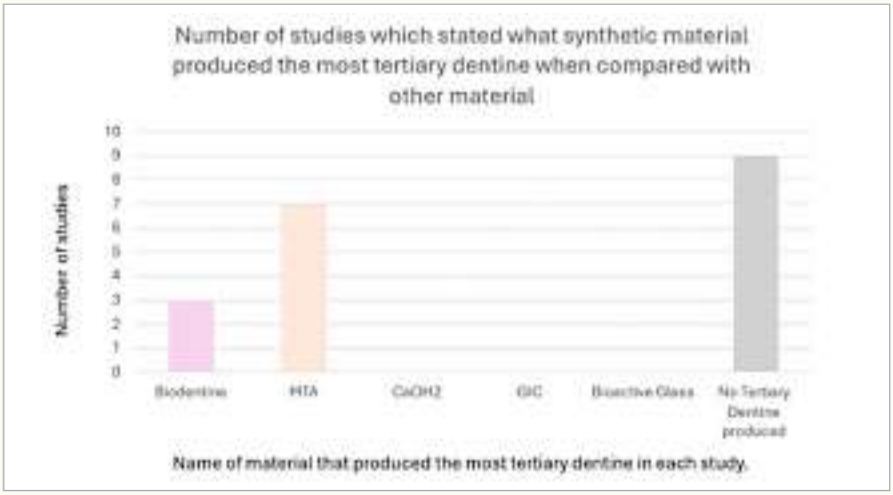


Figure 8: Bar-chart displaying which synthetic material produced more tertiary dentine compared to any other material.

Research question 4

Which materials reported the greatest percentage increase of dentinal thickness?

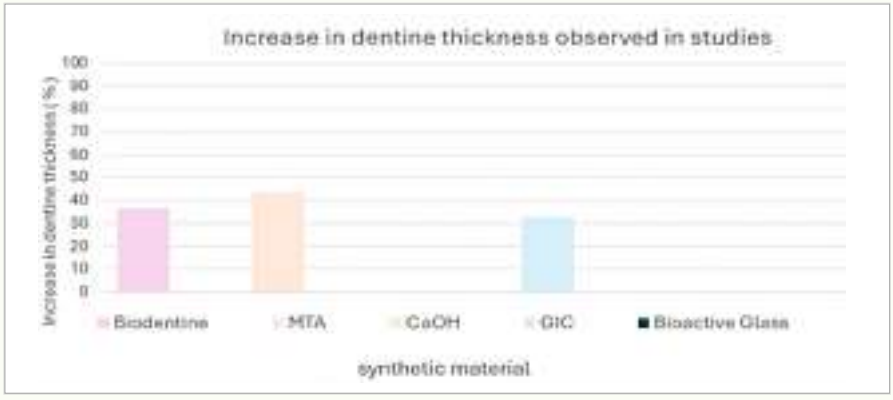


Figure 9: Bar-chart displaying which synthetic material reported the greatest percentage increase in dentine thickness.

Findings

Mineral Trioxide Aggregate

Papers 2, 3, 4, 5, 6, 7, 9, 14, 16,17 focused on the use of MTA in the formation of reparative dentine in several clinical scenarios including: pulp capping; pulpotomies; and the management of deep carious lesions. Papers 4, 7 and 17 highlight MTA's significant reduction of Streptococcus mutans and Lactobacilli species, underscoring its antimicrobial properties. Paper 4 described MTA as eliciting a non-toxic inflammatory response while providing pro-healing effects. Paper 16 observed that MTA facilitated reparative dentine formation with an increase of 0.12mm in dentinal thickness three months post-application. Papers 3 and 9 further demonstrated MTA's role in enhancing microhardness.[7,8] Overall, MTA has been shown to be a highly favourable material for its regenerative effects with papers 5 and 7 reporting a: '100% human tissue acceptance rate'.

Biodentine

Papers 2, 3, 5, 6, 11, 13 examined biodentine in the treatment of dentine caries, consistently demonstrating its remineralisation capabilities. Papers 2 and 5 highlighted its effectiveness in forming dentine bridges, with paper 2 showing biodentine has significantly higher stimulatory activity on pulpal cells than MTA, resulting in thicker dentine bridges. Papers 6 and 13 further confirmed its remineralisation properties with paper 6 reporting

the mineral density in enamel and dentine to increase by 36 - 40%. Additionally, paper 13 found that Biodentine's high alkalinity led to the denaturation of intratubular dentinal collagen fibrils, creating a porous structure to enhance bonding, ion exchange and overall remineralisation of dentinal tubules.

Calcium hydroxide

Papers 2, 7, 10, 11, 15, 16, 17 investigated the use of calcium hydroxide for pulp capping and pulpotomies, focusing on its role in tertiary dentine formation. Papers 11, 15 and 16 confirmed its effectiveness with paper 11 reporting a significant increase in dentine thickness and 15 and 16 presenting reparative dentine formation. Papers 11 and 15 described calcium hydroxide as "gold standard" for pulpotomies in primary teeth and pulp capping. Calcium hydroxide's antimicrobial properties were highlighted in paper 15, emphasising its role in protecting the pulp from noxious stimuli. However, paper 2 noted key drawbacks with calcium hydroxide including mineral dissolution over time, dentinal bridge tunnel defects and an uneven dentine thickness.[9] Additionally, calcium hydroxide was found to produce a porous dentine bridge with structural weakness, increasing susceptibility to harmful ion penetration, which has been demonstrated to compromise long-term tooth durability.[10]

Glass Ionomer Cement

Papers 3, 6, 9, 10, 13 examined Glass Ionomer Cement (GIC) and its abilities to induce hard tissue remineralisation in artificially induced dentine lesions. GIC showed limited dentine bridge formation with one study documenting a 32.54% increase in dentine mineral deposition, along with improvements in microhardness, and remineralisation of the dentinal layer.

Bioactive glass

Papers 1 and 12 focused on utilising bioactive glass for the remineralisation of carious lesions in enamel and dentine. It was found to exchange ions between bioactive glass and the alveolar bony surfaces, forming hydroxyapatite crystals. Overall, it was found to significantly increase root dentine microhardness whilst being anticariogenic and prohibiting mineral demineralisation and promoting enamel and dentine remineralisation. No figures were provided in this study.

Dentine bonding systems

Paper 2 focused on utilising dentine bonding systems in pulp capping which was found to a form a significantly weak reparative dentine bridge. Single universal bond was significantly less active for dentine bridge formation. No decision was concluded regarding its efficacy.

Propolis

Paper 5 focused on Propolis. The literature states that Propolis presented with a high clinical success rate of around 91.7%. Not only does the material form a dentine bridge (in 58.3% of the participants included in this study), but it was also found to have antibacterial and anti-inflammatory properties. However, this material was found to induce calcification in direct pulp capping.

RetroMTA

Papers 8 and 9 focused on RetroMTA and its effects as a pulp capping material. This material demonstrated beneficial results, forming a complete mineralised barrier in 3 out of 7 cases after a 7-month period post-application (paper 8). The remaining cases exhibited either channels or direct contact between the material and pulp, indicating unpredictable barrier formation. The newly formed calcified tissues were irregular, atubular and varied in thickness. Paper 9 concludes that RetroMTA was an effective material in hydroxyapatite deposition.

Portland Cement

Papers 16 and 17 focused on Portland Cement. It was found that Portland Cement (with added zirconium oxide) provides effective treatment of primary teeth after selective caries removal, with reparative dentine evidently being laid down after reassessment. Additionally, the material was found to have antimicrobial properties with a significant reduction in Streptococcus mutans and Lactobacilli species.

Zinc Polycarboxylate

Paper 6 focused on zinc polycarboxylate and its ability to remineralize artificial dentine. The literature described how zinc polycarboxylate had significantly increased the mineral density of artificially demineralised dentine, thus promoting its remineralisation abilities.

Bioengineering pulpal stem cells

Paper 10 highlighted primary human dental pulp stem cells isolated from adult human teeth cultured under odontogenic conditions for two weeks. This displayed exosomes rapidly being taken up into the cytoplasm of pulpal cells to rapidly increase mineralisation after 14 days, stimulating a rapid proliferation of tertiary dentine. There have been several systematic reviews published within the grey literature concerning in vitro stem cell dentinal regeneration.4-6 This underpins the need for knowledge and a deeper understanding of the cellular and molecular interactions, between bioactive restorative dental materials, and the dentine-pulp complex.

Discussion

Tooth regeneration has been described as a revolutionary and developing field that aims to biologically restore damaged teeth from infectious dental diseases such as dental caries through bioactive molecule activation (cytokines), synthetic bioactive materials and growth factors. There is still an unmet clinical need for tooth regenerative materials which is particularly important for patients with various degrees of enamel and dentine breakdown. The goal of tooth regeneration for diseased teeth is to restore the natural structure and function of the tooth.[1]

Several systematic reviews[1-3] have explored synthetic tooth regeneration mechanisms. These studies identified various methods to initiate tooth regeneration, including the use

of synthetic biomaterials, pulpal stem cell stimulation and enamel and dentine remineralisation. Additionally tooth regenerative mechanisms have shown to induce the successful regenerative capabilities of the dental pulp and dentinal layers which requires optimal conditions for its long-term success'.[4-6] This scoping review incorporated additional studies based on specific eligibility criteria. By analysing a broader dataset, it aimed to provide more up-to-date insights into the capabilities and limitations of current tooth regeneration techniques.

Comprehensive literature evaluation of the 17 studies identified a comprehensive overview into the associated properties of: Mineral Trioxide Aggregate (MTA); Biodentine; Calcium hydroxide; Glass Ionomer Cement; Bioactive glass; Dentine bonding systems; Propolis; RetroMTA; Resin Modified GIC; Portland Cement; and Zinc Polycarboylate.

Comparison of Methods and Findings in Literature

The findings of this scoping review identified MTA as the most effective synthetic material for dentine bridge formation closely followed by Biodentine, correlating with grey literature.[11] Others, however, have found no significant difference between MTA and Biodentine in this regard.[12] Calcium hydroxide was observed to induce dentine formation which was however found to be highly porous, raising concerns about its long-term structural integrity and ability to maintain protection against bacterial ingress.[9] In contrast, GIC and bioactive glass primarily enhanced enamel and dentine remineralisation (by 28.8% with bioactive glass), rather than directly promoting odontoblastic stimulation and dentine bridge formation.[10]

Further research is needed to test the formulated conceptual framework and create a comparison between MTA, Biodentine, Calcium Hydroxide, and Bioactive Glass to efficiently guide their optimal selection and application in clinical practice. Further developing studies around these synthetic materials regarding and their properties will allow for clinicians to make more informed decisions when selecting the most appropriate synthetic material in clinical practice.

Barriers

In vitro studies utilising artificial caries face significant challenges, particularly due to the absence of a host immune response, microbiome interactions, and the structural complexity of the oral microbiome and its influence on dentine repair. In vitro studies also struggle to replicate the structural complexity of dental tissues, long-term stability and the chemical variability of the oral cavity. While these studies provide valuable preliminary insights, in vivo and clinical validation remain essential for translating findings into real-world applications. Economic factors also influence dental material availability with high-income countries having the accessibility to more financially significant materials including bioactive glass and MTA. However, low-middle income countries rely on a more limited selection, often dictated by cost and resource availability[13] which can be noted from the publications in this scoping review.

Implications for Practice

The historical use of dental materials plays a significant role in the clinician's material selection process which may come down to time constraints, cost and availability, suggesting that decisions may be influenced by factors unrelated to the tooth's best suited material and patient variabilities.[14] Calcium hydroxide remains the most common choice in clinical practice as a synthetic tertiary dentine stimulating material due to faster preparation.[15] Dycal (a brand of calcium Hydroxide) remains popular due to its rapid mixing time of 10 seconds and setting within 2.5-3.5 minutes. In contrast MTA is more difficult to handling and requires 3 - 4 hours of setting time.[16] Biodentine, combining benefits of both, triturates in under 30 seconds but requires 12 minutes of setting time.[17]

While efficiency is key in clinical practices, material selection should be evidence-based. Understanding the properties of newer materials can enhance treatment longevity and support a more conservative approach to dentistry whilst maximising patient outcomes and care.

Conclusion

This review highlights the need for further research on the synthetic materials, their associated properties and in-vitro stem-cell biomechanical engineering. While research on organic biomolecules for tooth regeneration is ongoing, this study focused primarily on synthetic biomaterials. Findings indicate that MTA and Biodentine are the most effective pulp capping agents due to their bioactivity. Although calcium hydroxide promotes dentine bridge formation, its long-term stability is compromised by porosity and degradation. Bioactive glass is biocompatible but lacks substantial evidence supporting dentine formation. GIC demonstrated limited dentine regeneration potential but contributed to enamel and dentine remineralisation.

Overall, MTA and Biodentine remain the most promising synthetic materials for tertiary dentine regeneration, warranting further clinical research to refine their clinical applications.

Authors: The authors have recently graduated as DTH students from the university of Plymouth. This scoping review was undertaken in their final year.

Contact: james.carson03@icloud.com

References

1. Yen AH, Yelick PC. Dental tissue regeneration – a mini-review. *Gerontol*. 2010;**57(1)**:85-94. https://doi.org/10.1159/000314530. (Accessed 26 Feb. 2025).
2. Angelova Volponi A, Zaugg LK, Neves V, Liu Y, Sharpe PT. Tooth repair and regeneration. *Curr Oral Health Rep.* 2018 Dec;**5(4)**:295-303. https://doi.org/10.1007/s40496-018-0196-9 (Accessed 26 Feb. 2025).
3. Amir M, Jeevithan L, Barkat M, Fatima SH, Khan M, Israr S, et al. Advances in regenerative dentistry: a systematic review of harnessing Wnt/β-catenin in dentin-pulp regeneration. *Cells*. 2024;**13(13)**:1153. https://doi.org/10.3390/cells13131153 (Accessed 23 Feb. 2025).
4. Miura M, Gronthos S, Zhao M, Lu B, Fisher LW, Robey PG, Shi S. SHED: stem cells from human exfoliated deciduous teeth. Proceedings of the *National Academy of Sciences.* 2003;**100(10)**:5807-5812. https://

doi.org/10.1073/pnas.0937635100 (Accessed 23 Feb. 2025).

5. Shi S, Bartold PM, Miura M, Seo BM, Robey PG, Gronthos S. The efficacy of mesenchymal stem cells to regenerate and repair dental structures. *Orthodont Craniofacial Res*. 2005;**8(3)**191-199. https://doi.org/10.1111/j.1601-6343.2005.00331.x (Accessed 23 Feb. 2025).
6. Sakai VT, Zhang Z, Dong Z, Neiva KG, Machado MD, Shi S et al. SHED differentiate into functional odontoblasts and endothelium. *J Dent Res.* 2010;**89(8)**:791-796. https://doi.org/10.1177/0022034510368647 (Accessed 23 Feb. 2025).
7. Torabinejad M, Chivian N. Clinical applications of mineral trioxide aggregate. *J Endodont.* 1999;**25(3)**:197-205. https://doi.org/10.1016/S0099-2399(99)80142-3 (Accessed 23 Feb. 2025).
8. Prakash, P., Singla, M., & Singla, R. (2018). Bioactivity of Mineral Trioxide Aggregate in the healing of pulp and dentin regeneration. *Journal of Conservative Dentistry,* **21(6)**, 555-560 (accessed 23/02/2025)
9. Nowicka A, Lipski M, Parafiniuk M, Sporniak-Tutak K, Lichota D, Kosierkiewicz A, et al. Response of human dental pulp capped with biodentine and mineral trioxide aggregate. *J Endodont.* 2013;**39(6)**:743-747. https://doi.org/10.1016/j.joen.2013.01.005 (Accessed 23 Feb. 2025).
10. Hu JY, Li YQ, Smales RJ, Yip KK. Restoration of teeth with more-viscous glass ionomer cements following radiation-induced caries. *Int Dental J.* 2002;**52(6)**:445-448. https://doi.org/10.1111/j.1875-595X.2002.tb00640.x (Accessed 23 Feb. 2025).
11. Schwendicke F, Al-Abdi A, Moscardó AP, Cascales AF, Sauro S. Remineralization effects of conventional and experimental ion-releasing materials in chemically or bacterially-induced dentin caries lesions. *Dent Materials.* 2019;**35(5)**:772-779. https://doi.org/10.1016/j.dental.2019.02.021 (Accessed on: 23 Feb. 2025).
12. Nowicka A, Wilk G, Lipski M, Kołecki J, Buczkowska-Radlińska J. Tomographic evaluation of reparative dentin formation after direct pulp capping with Ca (OH) 2, MTA, Biodentine, and dentin bonding system in human teeth. *J Endodont*. 2015;**41(8)**:1234-1240. https://doi.org/10.1016/j.joen.2015.03.017 (Accessed on: 23 Feb. 2025).
13. Dobrzańska J, Dobrzański LB, Gotombek K, Dobrzański LA, Dobrzańska-Danikiewicz AD. Virtual approach to the comparative analysis of biomaterials used in endodontic treatment. *Processes*. 2021;**9(6)**:926. https://doi.org/10.3390/pr9060926 (Accessed 26 Feb. 2025).
14. Makhija SK, Lawson NC, Gilbert GH, Litaker MS, McClelland JA, Louis DR, et al. Dentist material selection for single-unit crowns: findings from the National Dental Practice-Based Research Network. *J Dent.* 2016;**55**:40-47. https://doi.org/10.1016/j.jdent.2016.09.010 (Accessed 26 Feb. 2025).
15. Agnes A, Long A, Best S, Lobner D. Pulp capping materials alter the toxicity and oxidative stress induced by composite resins in dental pulp culture. *Eur Endod J.* 2017;**2(1)**:11. https://doi.org/10.5152/eej.2017.17001 (Accessed 26 Feb. 2025).
16. Altan H, Tosun G. The setting mechanism of mineral trioxide aggregate. *J Istanb Univ Fac Dent.* 2016;**50(1)**:65-72. doi: 10.17096/jiufd.50128 (Accessed 26/02/2025).
17. McMahon S. How to use Biodentine for direct and indirect pulp caps. *Dental Products Report.* 16 Oct. 2017. www.dentalproductsreport.com/view/using-biodentine-direct-and-indirect-pulp-caps. (Accessed 26 Feb. 2025).

Cite this paper:

Bersamina C, Carson J, Soler Canto K, Day S, Hensman J, Muir T, Tuffley A, Moss K. Synthetic approaches to tooth regeneration in the management of dental caries. *Dental Health* 2025;**64(5)**: DOI: https://doi.org10.59489bsdht169

CLINICAL QUIZ

Metronidazole is frequently prescribed in the management of necrotising gingivitis and periodontitis.

Q1. What is the standard adult daily dose of metronidazole?

Q2. Why should metronidazole not be prescribed to a patient on warfarin?

Q3. What advice with regard to social habits should be given to a patient taking metronidazole?

SEND YOUR ANSWERS TO THE EDITOR BY 30TH SEPTEMBER. PLEASE INCLUDE YOUR ADDRESS.

Email: editor@bsdht.org.uk **Postal:** The Editor, Dental Health, BSDHT, Bragborough Hall Business Centre, Welton Road, Braunston NN11 7JG.

ANSWERS TO CLINICAL QUIZ JULY 2025

The winner is: **Iryna Mardle**

Painful ulcers like these appear every two months and last about 10 days. The patient has had the problem for a number of years.

Q1. What is the diagnosis?

A1. *Minor recurrent aphthous stomatitis, minor recurrent oral ulceration*

Q2. What question would you ask the patient about diet?

A2. Vegan or vegetarian? Restricted diet?

Q3. What haematinic deficiency is most frequently associated with this condition?

A3. *Iron deficiency*

ZOOM! WHITENING B1 SHADE GUARANTEE, NEW SUSTAINABLE PACKAGING AND COMPREHENSIVE WHITENING PLAYBOOK LAUNCHED

Teeth whitening continues to be the most popular aesthetic dental treatment and is a gateway to more extensive restorative aspirations. According to the Oral Health Foundation nearly half of adults surveyed plan to whiten their teeth within the next year; 32% expressed a desire for whiter teeth, and 66% have actively considered treatment[1].

Philips' Zoom! Whitening has earned its reputation as a top-tier professional teeth whitening system by combining cutting-edge technology, scientific precision, and patient-focused benefits. The company recently announced that it has upped the ante still further and relaunched Zoom! Whitening with a new look and feel, dramatic whitening results, and a new B1 shade guarantee.

B1 Guarantee and Stronger Sustainability Offering

Philips has announced a confident B1 Shade Guarantee: If a patient follows the Philips Zoom! protocol and does not achieve a B1 shade (using its standard 6 syringe kit), free syringes of whitening gel will be provided until the B1 shade is reached. This guarantee is a testament to the Philips Zoom!'s consistency, effectiveness, and clinical backing.

Philips has also redesigned the Zoom! whitening packaging - which is now paper based and fully recyclable. Philips' commitment to a sustainability and environmental strategy contains ambitious targets, processes and plans of action in the sustainable use of energy, emissions reduction and maintaining carbon neutrality .

Philips also launched a new Zoom! Playbook to offer dental professionals a comprehensive guide to teeth whitening. The Playbook draws on the know-how of leading practitioners to implement whitening to its full potential and is designed to guide clinicians through every aspect of teeth whitening from understanding the science, and navigate the legal and ethical considerations of treatment. It's a practical, evidence-based resource which ensures that all team members have the essential knowledge to implement whitening effectively and confidently within their scope of practice.

Scan the QR code to download your copy of the playbook

Professional expertise

Philips has collaborated with respected whitening experts to create the guide. Dr Alif Moosajee says: "The Zoom educational package is incredibly valuable for many people within the dental practice, especially those new to whitening.

Hygienist and teeth whitening course provider Megan Fairhall adds: "This guides purpose is to support dental professionals in maximising the potential of Philips Zoom! helping them understand how it benefits their patients, enhances staff knowledge, and drives practice growth".

References

[1] Oral Health Foundation statistics, 2020

PHILIPS

Sign-up to the Phillips Dental Professional Newsletter to receive the latest information: https://www.philips.co.uk/c-m-pe/dental-professionals

DIARY DATES

AUTUMN 2025 BSDHT REGIONAL GROUP STUDY DAYS

Contact: enquiries@bsdht.org.uk

Regional Group	Date	Details	Contact (Group Secretary)	Contact Details
Eastern	Sat, 11th Oct 2025	Holiday Inn Colchester Abbotts Lane, Eight Ash Green, **Colchester** CO6 3QL	Amanda Kestell	easternsecretary@bsdht.org.uk
London	Thurs, 25th Sept 2025 @ 7pm	AGM ONLINE (no trade)	Udita Patel	londonsecretary@bsdht.org.uk
Midlands	Thurs, 9th October 2025 @ 7pm	AGM ONLINE (no trade)	Joanna Ericson	midlandssecretary@bsdht.org.uk
North East	Wed, 17th Sept 2025 @ 7pm	AGM ONLINE (no trade)	Sarah Hunter	northeastsecretary@bsdht.org.uk
North West	Sat, 18th October 2025 (to be confirmed)	AGM ONLINE (no trade) + Speaker Diane Rochford?	Jessica McGenn	northwestsecretary@bsdht.org.uk
Northern Ireland	Monday 22 Sept 2025	Marlborough Clinic Belfast, 1 Marlborough Park, **Belfast** BT9 6XS	Gill Lemon	northernirelandsecretary@bsdht.org.uk
Scottish	NO EVENT (OHS in Edinburgh)	AGM ONLINE (no trade)	Kirsty Sim	scottishsecretary@bsdht.org.uk
South East	Thurs, 11th September 2025	AGM (no trade) + Speaker Ian Dunn	Sam Doyle	southeastsecretary@bsdht.org.uk
Southern	Sat, 11th Oct 2025	Solent Hotel & Spa, Rookery Avenue Whiteley, **Fareham** Hampshire, PO15 7AJ	Karen Poulter	southernsecretary@bsdht.org.uk
South West & South Wales	Fri, 26th September 2025 (Evening event)	Arnos Manor Hotel, 470 Bath Road, **Bristol**, BS4 3HQ AGM 14th October 2025	Lynn Chalinder	swswsecretary@bsdht.org.uk
South West Peninsula	Thurs, 2nd October 2025 @ 7pm	AGM ONLINE (no trade)	VACANT	southwestsecretary@bsdht.org.uk
Thames Valley	TBC	AGM ONLINE (no trade)	Keileigh Ireston	thamesvalleysecretary@bsdht.org.uk

COPY DATES FOR

DENTAL HEALTH

1ST OCTOBER FOR

NOVEMBER ISSUE

The Editor would appreciate items sent ahead of these dates when possible

Email: editor@bsdht.org.uk

FOLLOW THE BSDHT ON Facebook & Instagram

FB: /BSDHT **IG: @BSDHTUK**

Peace of Mind for 60 Years

Working together for your protection

Bactericidal, with yeasticidal activity against enveloped viruses (enveloped viruses incl. HBV, HCV, HIV, and coronaviruses), non-enveloped adenoviruses and noroviruses.

Orotol Plus disinfects, deodorises and cleans all suction and amalgam separating systems and spittoon bowls. Use alongside MD555 to descale and physically clean all components of the suction unit and drain lines.

Orotol Plus is non-foaming, designed to protect and care for your suction unit. It's high-standard material compatibility ensures performance and longevity.

For more information visit **www.duerrdental.com/en/products/hygiene**

@durr_dental_uk Duerr Dental UK

DÜRR DENTAL

BSDHT ADMIN

Bragborough Hall Business Centre, Welton Road, Braunston NN11 7JG. **Tel: 01788 575050** **Email: enquiries@bsdht.org.uk**

ADMINISTRATION

President: **Rhiannon Jones -** president@bsdht.org.uk

President Elect:
Simone Ruzario - presidentelect@bsdht.org.uk

Honorary Treasurer:
Claire Bennett - treasurer@bsdht.org.uk

Honorary Secretary:
Juliette Reeves - honsec@bsdht.org.uk

Honorary Vice Presidents:
Iain Chapple, Nishma Sharma, Mike Lewis

Tutor Rep: **Emma Bingham -** tutorrep@bsdht.org.uk

Publications Editor representative:
Patricia Macpherson - pubs@bsdht.org.uk

Elected Council Members:
Kirsty Chappell, Alastair Lomax, Sakina Syed
ecm1@bsdht.org.uk

Elected Council Members to Executive Team:
Tracy Doole - ecm2@bsdht.org.uk
Sakina Syed - ecm3@bsdht.org.uk

UK representatives to the IFDH:
Rhiannon Jones, Simone Ruzario

BSDHT Representatives:
Institute of Health Promotion and Education:
Elaine Tilling

BSDHT representative Health Education England Advisory Group (HEEAG): **Diane Hunter**

Student representative to council:
Carmen Thandi - studentrep1@bsdht.org.uk
Justyna Piotrowska - studentrep2@bsdht.org.uk

Student Representative Coordinator:
(maternity leave) **Amie Kavanagh -** studentrep@bsdht.org.uk

Coaching and Mentoring Representative:
Emma Slade-Jones - MC1@bsdht.org.uk

Diversity, Inclusion and Belonging representative:
Anna Charters - DIB5@bsdht.org.uk

REGIONAL GROUP REPRESENTATIVES ON COUNCIL

Eastern: **Andrea Hammond** easternregionalrep@bsdht.org.uk

London: **Sakina Syed (Acting)** londonregionalrep@bsdht.org.uk

Midlands: **Tiffani Hutchinson** midlandsregionalrep@bsdht.org.uk

North East: **Cara Hills-Smith** northeastregionalrep@bsdht.org.uk

North West: **Victoria Griffiths** northwestregionalrep@bsdht.org.uk

Northern Ireland: **Tracy Doole** northernirelandregionalrep@bsdht.org.uk

Scotland: **Lynn Harris** scottishregionalrep@bsdht.org.uk

South East: **Casey Duncan** southeastregionalrep@bsdht.org.uk

Southern: **Anna Wahlberg** southernregionalrep@bsdht.org.uk

South West and South Wales: **Adam Taylor** swswregionalrep@bsdht.org.uk

South West Peninsula: **Sabina Camber** southwestregionalrep@bsdht.org.uk

Thames Valley: **Fiona Stovold** thamesvalleyregionalrep@bsdht.org.uk

ADMINISTRATION

EASTERN

Chair: **Jade Tan** easternchair@bsdht.org.uk

Secretary: **Amanda Kestell** easternsecretary@bsdht.org.uk

Treasurer: **Amanda Harbrow-Harris** easterntreasurer@bsdht.org.uk

Trade Liaison: **Anna Charters** Email: easterntlo@bsdht.org.uk

LONDON

Chair: **Sakina Syed** londonchair@bsdht.org.uk

Secretary: **Udita Patel** londonsecretary@bsdht.org.uk

Treasurer: **VACANT** londontreasurer@bsdht.org.uk

Trade Liaison: **(Mary) Annastasia Kellett-Wright** londontlo@bsdht.org.uk

MIDLANDS

Chair: **Eleanor Cowlam (Acting)** midlandschair@bsdht.org.uk

Secretary: **Joanna Ericson** midlandssecretary@bsdht.org.uk

Treasurer: **Hannah Moore (Acting)** midlandstreasurer@bsdht.org.uk

Trade Liaison: **Jenny Whittaker** midlandstlo@bsdht.org.uk

NORTH EAST

Chair: **Julie Rosse** northeastchair@bsdht.org.uk

Secretary: **Sarah Hunter** northeastsecretary@bsdht.org.uk

Treasurer: **Sarah Warwick** northeasttreasurer@bsdht.org.uk

Trade Liaison: **Liz Powell** northeasttlo@bsdht.org.uk

NORTH WEST

Chair: **Victoria Griffiths** northwestchair@bsdht.org.uk

Secretary: **Jessica McGenn** northwestsecretary@bsdht.org.uk

Treasurer: **Alison Edisbury (Acting)** northwesttreasurer@bsdht.org.uk

Trade Liaison: **Kathryn Mayo** northwesttlo@bsdht.org.uk

NORTHERN IRELAND

Chair: **Rachael Lilley** northernirelandchair@bsdht.org.uk

Secretary: **Gill Lemon** northernirelandsecretary@bsdht.org.uk

Treasurer: **Jordan McCrea** northernirelandtreasurer@bsdht.org.uk

Trade Liaison: **Niamh Adair** northernirelandtlo@bsdht.org.uk

SCOTTISH

Chair: **Lynn Harris** scottishchair@bsdht.org.uk

Secretary: **Kirsty Sim** scottishsecretary@bsdht.org.uk

Treasurer: **Sandra Morgan** scottishtreasurer@bsdht.org.uk

Trade Liaison: **Emma Hutchison** scottishtlo@bsdht.org.uk

SOUTH EAST

Chair: **Jo Downs** southeastchair@bsdht.org.uk

Secretary: **Sam Doyle** southeastsecretary@bsdht.org.uk

Treasurer: **Adelle Cager** southeasttreasurer@bsdht.org.uk

Trade Liaison: **Sarah Breslin** southeasttlo@bsdht.org.uk

SOUTH WEST AND SOUTH WALES

Chair: **Harriet Elsworthy** swswchair@bsdht.org.uk

Secretary: **Lynn Chalinder** swswsecretary@bsdht.org.uk

Treasurer: **Alison Brown** swswtreasurer@bsdht.org.uk

Trade Liaison: **Jennifer Jenkins** swswtlo@bsdht.org.uk

SOUTH WEST PENINSULA

Chair: **Morag Powell** southwestchair@bsdht.org.uk

Secretary: **VACANT** southwestsecretary@bsdht.org.uk

Treasurer: (maternity leave) **Bianca Webber** southwesttreasurer@bsdht.org.uk

Trade Liaison: (maternity leave) **Bianca Webber** southwesttlo@bsdht.org.uk

SOUTHERN

Chair: **Samantha Martin** southernchair@bsdht.org.uk

Secretary: **Karen Poulter** southernsecretary@bsdht.org.uk

Treasurer: **Karenn Helmrichne-Davila** southerntreasurer@bsdht.org.uk

Trade Liaison: **Jessica Davies** southerntlo@bsdht.org.uk

THAMES VALLEY

Chair: **Keileigh Ireston** thamesvalleychair@bsdht.org.uk

Secretary: **Keileigh Ireston** thamesvalleysecretary@bsdht.org.uk

Treasurer: **Sarah Turnbull** thamesvalleytreasurer@bsdht.org.uk

Trade Liaison: **Sarah Turnbull** thamesvalleytlo@bsdht.org.uk

NSK
Create it

32
reasons
to buy the new
Varios Combi Pro2

Register now

Come and see the NEW **Varios Combi Pro2** on stand **12-15**

On stand, hands-on Workshops for dentists, hygienists and therapists

Fri 28th Nov. Minimally Invasive Non-Surgical workshop - Work smarter, not harder!
Dr Varkha Rattu, supported by Siobhan Kelleher, Lauren Long & Kathryn Mayo

Sat 29th Nov. Implant Maintenance workshop.
Kathryn Mayo & Jenny Walker supported by Lauren Long,

Varios Combi Pro2

Say hello to an evolution in ultrasonic and powder therapy.

Gentle yet powerful, reliable and exceptionally durable, Varios Combi Pro2 has a host of advanced features designed to improve efficiency, control and enhance patient comfort.

Engineered with meticulous attention to detail, Varios Combi Pro2 is an investment in clinical excellence and in the health of your patients.

More info
Varios Combi Pro2

Contact
Demo available

WATER HEATER • TITANIUM ULTRASONIC HANDPIECE • JET NOZZLE FOR PERIO HANDPIECE • AUTO CLEANING • REMOVABLE POWDER CHAMBERS

NSK's oral hygiene range is not just limited to Varios Combi Pro2.
Take a look at our restorative & prophy handpieces, ultrasonic or air scalers and portable powder therapy devices.

www.mynsk.co.uk