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FMC CONNECTING DENTISTRY

May/June 2024 / Volume 18 / No 2



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May/June 2024 / Volume 18 / No 2

THE PERFECT MATCH

An auricular prosthesis case in which precise colour, detail and shading create a life-changing result *p.14*

The magic of tooth morphology *p.12*

The 2024 Dentistry Census findings *p.28*

The ultimate guide to setting a price list *p.36*

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Looking to the future

MATT EVERATT

Editor-in-chief

There is so much happening in dental technology and the laboratory world – where do I start?

In April 2023, the General Dental Council launched consultations for the scope of practice of dental care professionals (DCPs). Amongst the consultations discussed was that on dental technicians. Several online meetings were held by the GDC. So far, we haven't seen any proposals for any changes. We have seen hygienists and therapists given authority to extend their scopes to include direct access and they are now allowed to prescribe certain medications and treatments.

In more recent months, we have seen the Clinical Dental Technicians Association UK submit a proposal to extend the scope of practice. There have been some great discussions on this subject, which you will be able to read more of on page 34 of this issue of *Laboratory*.

LOW MORALE

In April, Dentistry.co.uk's new feature, Dentistry's Big Questions, asked dental professionals: 'Is the future bright for dental technicians?'. I shared the question amongst several social media groups and it had a real mixed bag of responses. The opinions in one of the groups, 'A Race To The Bottom', known for its cynical views on dental technology, were mainly very negative, with the exception of one or two comments.

I refrained from commenting on the subject as I didn't want my response to sway any opinions. For the record, I am incredibly positive about the future for dental technicians; I am sure you will have read many of my articles and posts previously. I was quite surprised to read the stats of the

poll in which 63% of respondents said the future isn't bright, 23% were unsure, and only 14% think the future is bright.

We clearly have some work to do to help raise morale and shape the future for dental laboratories. Find out what was said on page 32.

AWARDS AND EVENTS

The awards season will be upon us before we know it. Last year we saw a plethora of incredible technicians, clinical dental technicians and laboratories presented with awards. I appreciate that awards aren't everyone's cup of tea, but I love them. I think it helps so much with team spirit and morale, and it also raises our awareness within the dental team. I would urge everyone to give it a go at least once.

I must admit, I was a little sceptical when we first entered around 15 years ago. I wasn't able to attend the event, and it turned out that we won an award! I made sure I attended the next ones.

I thoroughly enjoyed meeting many of you at the North of England Dentistry Show in Manchester in March. The Laboratory Theatre hosted some amazing speakers.

Special thanks go to Eboni-Rose Williams, Sean Ward and Craig Broughton. You were all fantastic and I look forward to hearing more from you at forthcoming events.

SHARE YOUR THOUGHTS

I hope you enjoy reading this latest edition.

Please get in touch if you would like to contribute or share your feedback on any of the articles. We would love to hear from you.

GET IN TOUCH

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Laboratory

VOL 18 NO 2, MAY/JUNE 2024

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Laboratory is printed by Buxton Press.

Subscription enquiries and back issues - 01923 851771 or email: subscriptions@fmc.co.uk

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Hertford House, Farm Close, Shenley,
Hertfordshire WD7 9AB

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ISSN NUMBER: 2053-5465



Keep your ear to the ground

Since the last issue, major dental news stories have hit the headlines. Most significantly, details of the long-awaited NHS dentistry recovery plan were released. The government stated that the new measures, which include a £20,000 'golden hello' to dentists willing to relocate to underserved areas, could see up to 2.5 million additional NHS dental appointments for patients over the next 12 months, as well as up to 1.5 million extra treatments being delivered. Shortly after the plan was announced, however, primary care minister Andrea Leadsom admitted these figures had 'quite a high likelihood of not being reliable'...

Also in the headlines was the government's announcement that new powers will be granted to dental hygienists and dental therapists. These powers, which the profession has been campaigning to obtain for more than a decade, will allow them to supply and administer certain types of medicines without sign off from a dentist.

But what about the world of dental technology? News on the General Dental Council's (GDC) consultations on the dental technician scope of practice is awfully quiet, with no updates or changes in the pipeline, it seems. And what are the powers that be doing to attract new people into the profession or invest into educational training while we move headfirst into a recruitment crisis? What's around the corner for dental technology? We're all ears if you know of any plans or updates; get in touch with us!

Meanwhile, the Clinical Dental Association UK took matters into its own hands by reviewing the scope of practice of clinical dental technicians and publishing a proposal to expand them. The response to this has been overwhelmingly positive – find out more on page 34.

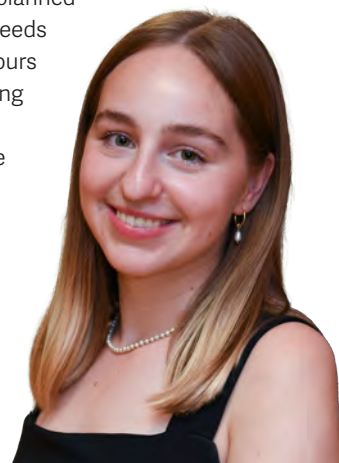
In fact, in general, the profession's viewpoint on the future is becoming more positive. The 2024 Dentistry Census revealed that, compared to 2021, the picture is looking brighter. Only 8% of this year's census respondents anticipate leaving the profession, compared to some 22% two years ago. You can read the full census findings on page 28.

Before we meet again in early August, the deadline for completing your CPD for the year will have passed. This is your reminder to make sure you have planned ahead – don't leave it until the last minute! Are your CPD needs covered for this year? If not, Dentistry CPD has over 600 hours of CPD courses and a dedicated CPD team to help you along the way. Visit cpd.dentistry.co.uk to get started!

As always, if you'd like to contribute to *Laboratory*, I'd love to hear from you.

h. Veal

LUCY VEAL
Editor of *Laboratory*



ENHANCED CPD

Complete this issue's enhanced CPD online at cpd.dentistry.co.uk or scan the QR code. Email cpdsupport@fmc.co.uk if you're in need of guidance.

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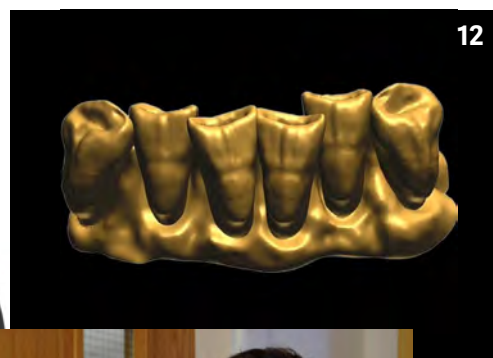
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33



8



12



20



22

CONTENTS

Lab update

- 6 Presenting *Laboratory's* editorial board members
- 8 The latest news from the profession
- 10 Everything you need to know about the 2024 dental awards

Technical

- 12 The magic of tooth morphology
- 14 Achieving realism in auricular prosthesis

People and places

- 16 Remembering Bert Aldridge, OTA founder
- 18 First impressions from a dental technician
- 20 Winning Best Dental Technician
- 22 A letter to my younger self

Life in the lab

- 25 Creating a gold mine of information
- 28 The 2024 Dentistry Census findings
- 32 Is the future bright for dental technicians?
- 33 Don't neglect manual wax-ups
- 34 CDT scope of practice expansion: for or against?

Business

- 36 The ultimate guide to setting a price list
- 39 The power of positivity

Industry innovations

- 48 Are we ready for the future of dental technology?
- 50 The latest product news and updates

Enhanced CPD

- 52 CPD questions

Laboratory's Lab Experts panel

Presenting **Laboratory's** editorial board – the Lab Experts helping to nurture connection, passion and quality within dental technology



**CRAIG MARK
BROUGHTON**

Clinical dental technician and managing director, CMB Dental Laboratory



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Associate director, Byrnes Dental Laboratory, part of the Corus group



**MASSIMO
CICATIELLO**

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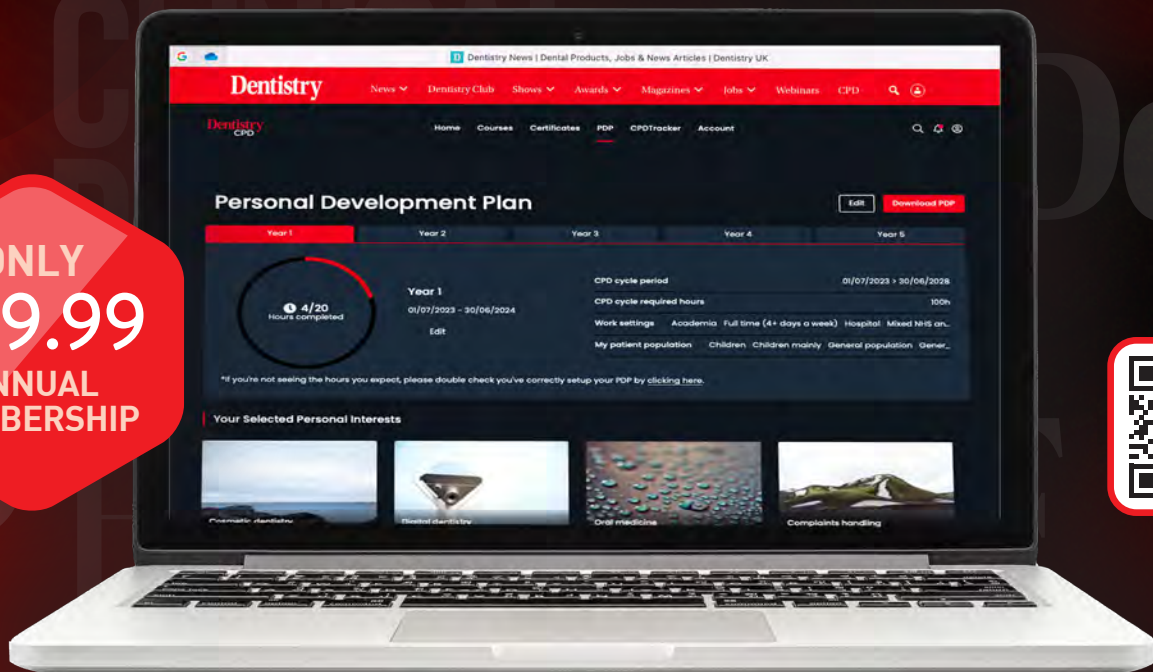
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Jason Wong becomes England's new chief dental officer

Jason Wong has been appointed as chief dental officer (CDO) for England by NHS England and the Department of Health and Social Care (DHSC).

This comes as Sara Hurley stepped down in June 2023 following eight years in the job. Since then, Wong has served as interim CDO while NHS England and the DHSC recruited for the role. Prior to this, Wong had been deputy CDO for England since June 2020.

He has had a variety

of positions, including chairing local dental networks across the Midlands and the east of England. He was also secretary of the Lincolnshire local dental committee for 16 years. Wong was awarded an MBE for his services to dentistry and oral health in the new year honours list 2020.

'VERY PROUD'

As CDO, Wong will act as the national professional lead for oral health strategy and dental care in England. According to NHS England, as CDO, he will 'provide system-wide professional and clinical

leadership by setting the strategic vision for England's oral health and a system-wide approach to further improve NHS dental and oral health services.'

His role will also involve working in partnership with both local and regional teams across the UK to deliver better outcomes for patients.

Alongside his CDO duties, Wong will be keeping a day in clinical practice.

On his CDO appointment, Wong said: 'I'm very proud to be appointed to the role of chief dental officer for England.'

'It's a challenging time for NHS dentistry and I know there is more to do to recover and improve services for patients.'

'I look forward to working with colleagues across the system to support them to recover and improve, and to lead the transformation of NHS dental services.'

GDC must prevent future deaths in dentistry, says coroner

A coroner has called on the General Dental Council (GDC) to take action to prevent future deaths in the profession. This follows the death of a dentist by suicide.

In the 'Prevention of Future Deaths' report, published last year, coroner Katrina Hepburn highlighted concern with the way the GDC publicly displays information before proceedings have concluded.

The coroner's concerns read: 'Whilst it is accepted that the public should have knowledge of concerns raised with regards to a registered dental practitioner, my concern is regarding the level of detail placed on the GDC website in respect of those concerns, particularly when a case is at a stage where the proceedings have not been concluded and the issues not yet determined one way or another. In this case the report ran to seven pages and set out in detail the allegations made under the "background section" and then further detail of the allegations by way of documenting the submissions made by the Counsel acting on behalf of the GDC.'

She added: 'Given that this was an interim order only, my concern is whether the level of detail provided to the public at that stage of proceedings was necessary or required... by putting detailed allegations into the public domain via the GDC website, at a stage before any final determination has taken place, I am concerned that others going through a similar process may also suffer a detrimental effect to their mental health.'

'Consequently, in my view, there exists a risk that future deaths will occur.'

ADDRESSING THE CONCERNS

In response to the coroner's concerns, the GDC said: 'The GDC's starting position for what properly ought to be in public about these types of proceedings is that they are judicial proceedings taken in the public interest. You will be aware, including through your own work, that the interests of open justice are of great importance in ensuring that the public can have confidence in the work of regulators or other public sector bodies.'

'In pursuit of the overarching objective of public protection and of maintaining confidence in the professions it is important that the public can see where the GDC takes substantive action including, in the most serious cases, erasure and suspension.'

'It is also important, particularly given the time it takes to get to a substantive hearing, that the public can see that immediate risks are addressed.'

It added: 'We recognise, however, that there are times when matters ought properly to be heard in private, and our legislation, guidance for our panels and our practice allows for this. Our rules set out that hearings before committees (including the IOC) should take place in public.'

'The IOC considers guidance in relation to when hearings should be held in private. If a hearing is held in private, then the details that are heard in private will not be made public.'

The regulator confirmed that it is 'undertaking a review' of how it hears interim order applications and what information it then publishes.

Billions of health budget underspent by government

Analysis by the Institute of Fiscal Studies (IFS) suggests that the government has spent £5.5 billion less on health than it pledged five years ago.

In 2019, the Conservative Party indicated that the health budget would increase by 3.3% annually throughout this parliamentary term. However, an IFS report estimated the annual increase to be averagely 2.7%. This forms a deficit of £5.5 billion from planned spending in the last five years.

IFS said: 'Despite a pandemic, record waiting lists and growing rates of ill health, real-terms health spending has risen less quickly than was planned five years ago.'

The institute also highlighted that this was the only parliamentary term to see slower growth than planned.

'This breaks the habit of a lifetime,' IFS said. 'Over the past 40 years, the NHS budget has almost always grown more quickly than originally planned.'

'This parliament is the exception.'

SETTING SPENDING PLANS

Max Warner, a research economist at IFS and author of the report, said: 'Whichever party takes office after the next election won't have long to set out departmental budgets for the next fiscal year, and the choice of how much to give to the Department of Health and Social Care – which now represents more than 40% of total day-to-day departmental spending – will effectively dominate everything else.'

'Spending on the health service will – absent a big reduction in the role of the NHS, or further deterioration in quality – have to rise in real terms to meet the pressures the service faces and deliver the workforce plan which both the main UK parties have signed up to.'

'But the sheer size of the health budget means that delivering funding increases at anything like the historical average would require cuts elsewhere, even before accounting for recent promises on defence spending. Neither the Conservative Party nor

Labour Party have been keen to set out spending plans. But the next government will have to confront this reality – and fast.'

UNDERSPENDS IN DENTISTRY

Government funding for NHS dentistry forms part of the health spending analysed by IFS. In February, analysis revealed that one third of local dental budgets were going unspent in some areas of England. Integrated care boards in Lincolnshire and Hampshire were on track to underspend by 30%, with Norfolk and Waveney heading for 27% underspends.

The British Dental Association said the underspends do not reflect any lack of demand for NHS dentistry but are the result of practices struggling to reach targets.

Research by the *Financial Times* suggested that almost £150 million of funding was returned by NHS dentists who were unable to meet UDA targets. In Somerset, 17% of all funding was returned – three times higher than the national average of 5.5%.

MPs vote in favour of UK smoking ban

The House of Commons has voted in favour of prime minister Rishi Sunak's smoking ban by 383 votes to 67. The vote took place on 16 April, following the second reading of the Tobacco and Vapes Bill, where MPs debated the potential efficacy of the smoking ban.

Those that voted against the bill include 57 of Sunak's Conservative MPs. This comes after several politicians have spoken out against the proposed ban, including former prime minister Boris Johnson who called it 'absolutely nuts'.

Parliament's vote in favour of the bill brings the smoking ban a step closer to becoming law. However, it still needs to face a number of further stages, including passing the House of Lords.

If passed, the smoking ban would make it an offence to sell tobacco products to anyone born on or after 1 January 2009 in the UK.

Sunak first proposed the ban at the 2023 Conservative Party Conference, stating that there is no safe level of smoking and that the measure would 'save more lives than any other decision we take'.

LONGER, HEALTHIER AND MORE PRODUCTIVE LIVES

Prior to the vote, MPs debated the impact of a UK smoking ban, including its affect on the NHS.

Victoria Atkins, secretary of state for health and social care, stated that almost one hospital admission a minute is the human cost of smoking in the UK.

She said: The bill is not about demonising people who smoke or stopping them from buying tobacco if they can do so today. It will not

affect current smokers' rights or entitlements in any way.

'Indeed, we want to help them to quit. We are supporting them by almost doubling funding for local stop-smoking services.'

'Instead, the bill is looking to the future, to give the next generation the freedom to live

longer, healthier and more productive lives.'

She added: 'Smoking remains the largest preventable cause of death, disability and ill health.'

'In England alone, creating a smoke-free generation could prevent almost half a million cases of heart disease, stroke, lung cancer and other deadly diseases by the turn of the century, increasing thousands of people's quality of life and reducing pressure on our NHS. [L](#)



Awards season is coming!

Find out how to get involved in this year's dental awards from **FMC**

The 2024 FMC awards have officially launched! This means all dental professionals can now register their interest to stay informed about the entry process and deadlines.

FMC's awards have a rich history of honouring innovation, excellence and dedication in the dental profession, and this year promises to be no different.

Whether it's a groundbreaking treatment technique, a superb technical result or an exceptional commitment to patient satisfaction, the awards celebrate the best and brightest in dentistry.

This year, there are six categories open for dental labs, dental technicians and clinical dental technicians.

Scan the QR codes on the page to find out more about how to get involved.


ENHANCE YOUR CREDIBILITY


'The awards aren't everyone's "cup of tea", says Matt Everatt, *Laboratory* editor-in-chief. 'Personally, I love dental awards. I enjoy the process of entering – the opportunity to look back on the amazing work you and your colleagues do is almost cathartic.

'Winning an award can serve as a powerful PR tool and significantly boosts team morale. Sharing the victory with your team generates excitement, making everyone feel integral to the achievement and fostering confidence and motivation.

'Promoting your status as an "award-winning technician" or "award-winning lab" enhances your credibility and elevates your reputation, distinguishing you from competitors in the dental field.

'Additionally, attending awards ceremonies offers valuable networking opportunities. It allows you to connect with peers at the pinnacle of their profession and introduces you to potential new clients, all while enjoying the spotlight of being featured on the grand stage.

'Experiencing an awards ceremony is exciting and inspiring. The buzz in the room when the awards are announced is fantastic, and having your team with you makes it a wonderful team-building experience.' 




THE Dentistry AWARDS 2024

Entry deadline
Wednesday 3 July 2024

Ceremony
Friday 13 September 2024

For more information and to register for the Dentistry Awards, scan the QR code.



The Dentistry Awards 2024 celebrates excellence in dental practice, recognising dental professionals for their achievements and advancements. This prestigious event highlights talent, innovation and dedication in dentistry. Nominees are chosen for their exceptional skills, patient care and community contributions. The awards not only honour individual and team accomplishments, but also inspire continued excellence in oral healthcare.

The Dentistry Awards categories:

- Team Members of the Year (dental technician and clinical dental technician)
- Dental Laboratory of the Year
- Website of the Year
- Sustainable Business Award
- Team of the Year.



CLINICAL DENTISTRY AWARDS 2024

Entry deadline
Wednesday 10 July 2024

Ceremony
Friday 11 October 2024

For more information and to register for the Clinical Dentistry Awards, scan the QR code.



The Clinical Dentistry Awards serves to acknowledge clinical excellence in practice.

The highly inclusive Clinical Dentistry Awards offer a wide range of categories, bringing together aesthetic dentistry, orthodontics, periodontics, endodontics, implant dentistry and oral health, to showcase the outstanding work being undertaken in dentistry. The ceremony in London this October promises to be a prestigious and well-respected dental awards occasion for the UK.

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The magic of tooth morphology

Riges Picaku shares the different reasons why a thorough understanding of tooth morphology is critical for sculpting digital teeth



RIGES PICAKU

CAD dental technician,
Q Lab

Tooth morphology knowledge is a necessity for every single dental technician, especially a CAD dental technician. The purpose of this article is to bring light to the importance of tooth shapes for dental technicians as it forms the foundation of their work in creating dental prosthetics and restorations.

In order to achieve this, we will explore the four important aspects in which morphology plays a crucial role – the accuracy, functionality, aesthetics and communication.

Before we get into that, allow me to briefly present myself and my journey as a CAD dental technician.

My name is Riges Picaku. I was born in Albania and raised in Savona, Italy where I graduated as a dental technician in 2009. In 2015, I moved to London to see how the UK dental market works. Long story short, I have been working at the amazing Q Lab since 2020 as a CAD designer, where I have the luck to be mentored and supported by Alaa Abou Hasan. My passion, besides travelling, is to see the impact of my restorations in patients' lives.



**CLAIM
YOUR
CPD**

GDC anticipated outcome: C

CPD hours: One

Topic: Tooth morphology

Educational aims and objectives: To explore why tooth morphology is critical for sculpting digital teeth.

This article qualifies for one hour of enhanced CPD. Turn to page 52 to answer the questions.

It's not a secret that I love recreating natural shapes and All on X cases bring me the biggest joy and satisfaction. Being part of a full rehab journey workflow and seeing patients get a whole new smile, while also helping them feel confident, is something that I will always cherish.

When I began my career in dentistry, there was no such thing as digitalisation (don't let this fool you, I am not that old). So, as you would imagine, this meant all cases were treated manually.

This gave me the greatest benefit of building a strong understanding of tooth anatomy. I was completing wax-ups manually daily, without the convenience of a digital software, and I believe this was a key factor of my growth when I moved to being digital.

When I became a CAD technician, I only had to replace my traditional scalping tools with the mouse and keyboard, and from that point onwards, I never looked back.

1. ACCURACY

Nowadays, dental CAD designers play a crucial role in how the final restoration will look in the patient's mouth. The technician's number one task is to accurately replicate the natural shape and form of teeth in their prosthetic creations. Therefore, the more knowledge they have on the tooth geometry, the better and more accurately they can mimic the natural variations in tooth shape, size and structure.

2. FUNCTIONALITY

It goes without saying that accuracy is as important as functionality when it comes to designing a dental restoration. Teeth are designed to perform specific functions such as chewing and speaking.

Therefore, once again, understanding tooth morphology helps dental technicians ensure that the prosthetics they create not only look natural but also function properly within the oral cavity.

3. AESTHETICS

Additionally, understanding tooth shapes can help you achieve better aesthetics. We all know that the appearance of teeth is a significant factor in a person's overall appearance and confidence. Dental technicians often take the role of a magician and need to replicate the aesthetics of natural teeth, including their shape and arrangement to create prosthetics that look



FIGURE 1: All on X full mouth restoration on implants

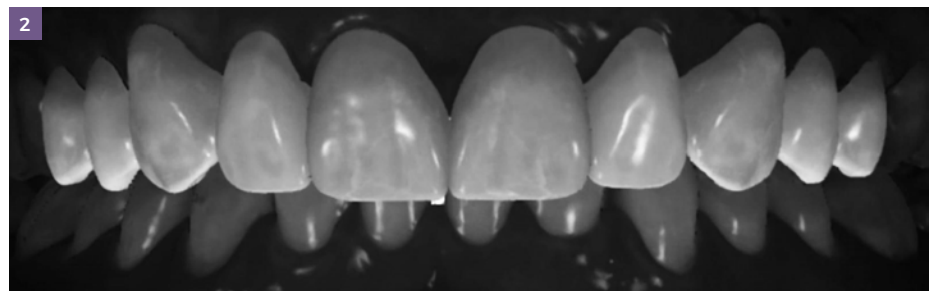


FIGURE 2: Veneer case UR5 to UL5



FIGURE 3: All on X

lifelike and blend seamlessly with the patient's existing dentition. And trust me, understanding morphology plays a key role in us doing our magic.

4. COMMUNICATION

Last but not least, I want to touch on the importance of understanding anatomy when it comes to communicating and building trust

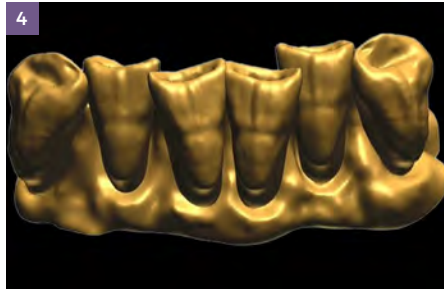
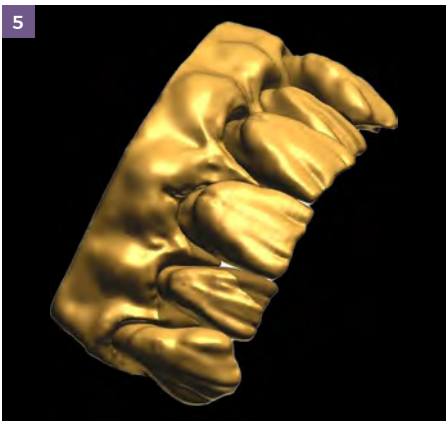


FIGURE 4: LR3 to LL3 digital design

with the dentist. I collaborate closely with our dentists at Q Lab in planning each case and making sure that we always meet the patient's expectations.

Having a broader knowledge of the shapes, functions and dental anatomy has helped me to connect with the dentists at a greater level, which ensures that both dentist and patient are happy.



FIGURES 5 and 6: UR3-UL3 digital design

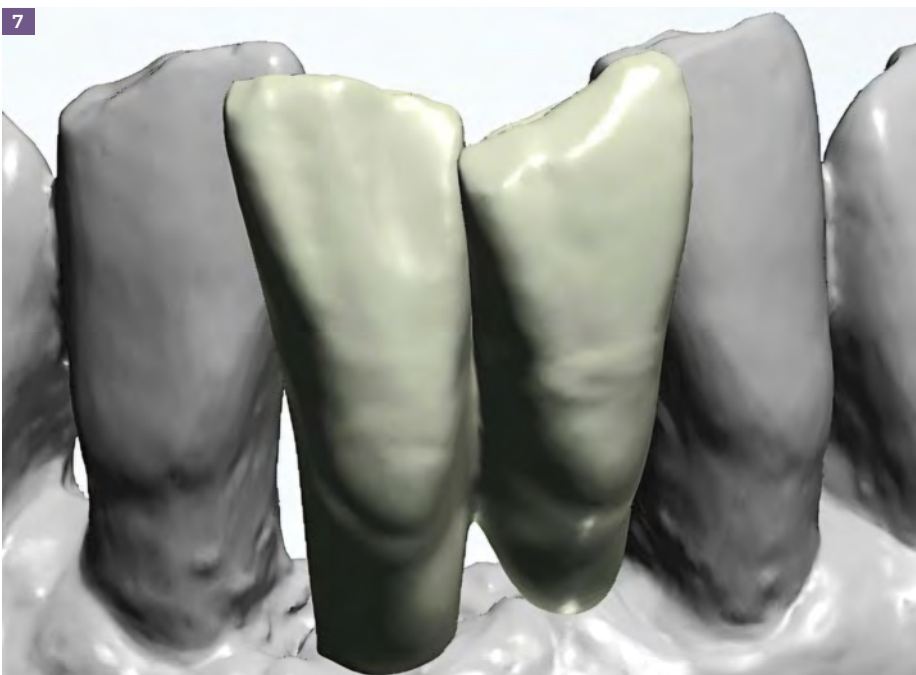
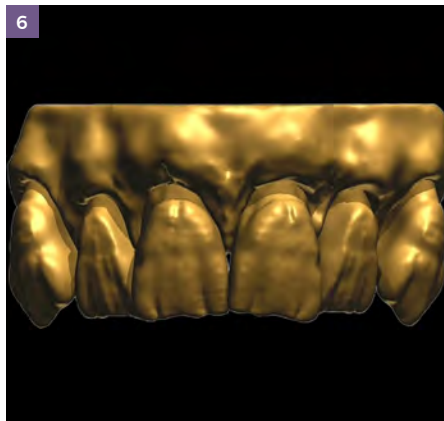


FIGURE 7: Mimicking nature with this screw retained implant bridge

MAGIC TOUCH

Undoubtedly, CAD software are amazing tools in assisting us to create restorations. However, our knowledge and the critical thinking that we hold in the process of creating these restorations is truly unmatched.

Although software provides endless tooth libraries, I am never simply applying them with my eyes closed. Each case is unique, belonging to an individual and requiring bespoke planning. Due to this, when I am working on a case after having analysed the scans and the patient's current dentition, I go ahead and choose the most suitable tooth library that most closely matches the case. From there, my magic begins to take place, as I add my own touch to each case and start to manipulate the shape and make it customised for the patient.

I wouldn't be able to add this 'magic touch' if I didn't already have a strong knowledge and understanding of morphology.

CAD designers bring together technology, design and clinical knowledge to create high-quality dental prosthetics that can change the patient's life forever.

A piece of advice to all the CAD newcomers: do not underestimate the importance of each manual process in the lab. Start from the basics and build your way (and knowledge) up step by step – even if that means doing a couple more manual wax-ups. [📄](#)

Written by Iris Toska

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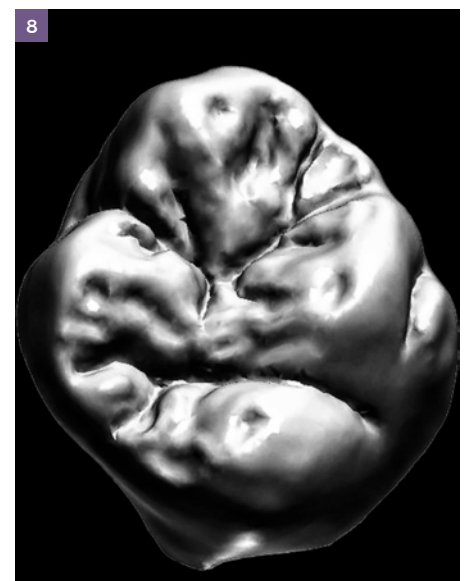


FIGURE 8: Daily rituals: UR6 zirconia restoration

Achieving realism in auricular prosthesis

Dan Shaw shares an auricular prosthesis case in which precise colouring and detail created a lifelike, aesthetic result



DANIEL SHAW

Maxillofacial prosthetist,
Chesterfield Royal

In the first part of this auricular prosthesis case study in the last issue of *Laboratory*, we looked at the impression and wax-up/trial stages. The technique used to match the contra-lateral ear was to take a traditional alginate impression of the natural ear (Figure 1). A stone model was then made, and a 3D scan was taken, creating a digital STL file. We were then able to manipulate the STL file to create an exact mirror image of the 'good' ear.

In this article, we will look at the intrinsic silicone colouring, activating and packing process, as well as the fitting stage, including extrinsic colour matching.

SILICONE COLOURING

Following the try-on and establishing the correct intrinsic silicone colour, the wax ear was invested in a standard brass flask. This is done so in the small half of the flask in Crystacal plaster. To facilitate the correct colour placement and to prevent air becoming trapped behind the helix aspect, a small 'cushion' of plaster is added to the invested wax pattern (Figure 2).

The top half of the flask is invested in Crystacal stone. Once



FIGURE 1: The first part of this auricular prosthesis case study looked at the impression and wax-up/trial stages. To match the contra-lateral ear, a traditional alginate impression of the natural ear was taken



FIGURE 2: A small 'cushion' of plaster is added to the invested wax pattern



FIGURE 3: If the implants were positioned close together, overlapping adjacent flanges on the magnets would compromise the fit



FIGURE 4: Detailing silicone is placed using a small microbrush with a dabbing motion



FIGURES 5 and 6: A small proportion of the base silicone is then placed in the mould before the cushion is placed on top of it



set, the flask is boiled out as you would do with a denture. As with all invested cases, it is essential that all waxy residue is removed. The cushion is removed and boiled off separately to ensure all surfaces are clean.

Technovent's M511 silicone is preferred due to its workability and reasonable vulcanising time. The silicone starts clear and intrinsic

colour paints are added incrementally. There is a base shade colour and detailed areas too. For an Asian skin prosthesis, white would be added to prevent the silicone coming out translucent, but the main colours are brown, yellow and red, with a large amount of brown and plum coloured flocking. Flocking is fine-particle (flock) fibres of colour. These



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Educational aims and objectives: To provide a case demonstrating the manufacture of a prosthetic ear.

This article qualifies for one hour of enhanced CPD. Turn to page 52 to answer the questions.



FIGURES 7 TO 9: The patient was delighted to have such an aesthetically pleasing prosthesis that fitted closely to his soft tissue, without the need for any adhesive



FIGURES 10 TO 12: With the ability to digitally copy and duplicate the natural ear, it gives the technician the ability to make an exact replica in terms of size and shape. The skill comes down to getting the shade, intrinsic and extrinsic colouring correct to match the surrounding tissues



FIGURE 13: The magnetic implants meant the patient didn't need to use any medical adhesive

fibres help to give the appearance of vascular tones. The silicone must now be catalysed, meaning 10% of its weight is added in clear catalyst. Thixotropic agent thickens the silicone, and this is added to the detailing (darker) silicone. The base colour is not thickened, allowing it to flow more freely within the mould and not disturb the pre-placed detailing.

FLASKING

After all surfaces are coated in Unifol Cream Separator, and with a gloved hand (natural skin oil can contaminate the bonding surface), two magnet receivers are placed on to the exposed abutments. Flanges mechanically embed themselves into the silicone to allow accurate positioning, and silicone bonding primer is also painted onto the back of the receiver for added chemical bonding. The orientation of the magnet is irrelevant in this case. However, if the implants were positioned close together, this would need consideration as overlapping adjacent flanges on the magnets would compromise the fit (Figure 3).

Using a small microbrush, the detailing silicone is placed on the areas that require it, with a dabbing motion to create a natural appearance (Figure 4). A small proportion of the base silicone is then placed in the mould before the cushion is placed on top of it (Figure 5 and 6). Without the cushion there, access to areas of the ear would not be possible without introducing either poor colour placement or pockets of air. The rest of the base silicone is added, and the flask carefully closed. A bench clamp is not used while packing silicone, as the silicone would have been weighed to give just more than is needed. This means the pressure of the closing flask clamp alone is adequate.

The prosthesis is placed in the oven at 125°C for two hours. It is allowed to cool fully prior to the opening of the flask. Due to the detailing of the wax pattern, minimal finishing is required to simply remove the flask line that is created behind the helix area. The areas around the magnets are also checked to ensure the placement and removal is easy.

FIT APPOINTMENT

At the fit appointment, it is common practice to finish the prosthesis with extrinsic colouring. Adding extrinsic colour to the surface allows the colour to blend in better with the surrounding natural skin tones. The patient was delighted to be provided with such an aesthetically pleasing prosthesis that fitted closely to his soft tissue, without the need for any adhesive (Figures 7 to 9).


Spectromatch supplies an excellent extrinsic system whereby a small amount of its paints are mixed to the desired surface colour and added with a paint brush. To create a natural appearance (similar to intrinsic colouring) this is then dabbed with gauze to lose the paint strokes and randomise the placing of the paint. Once the colour is complete, the prosthesis is cured at 100°C for 10 minutes.

Patients provided with such prostheses are given an initial three-month review, which extends to six months before it becomes annual. The mould is kept safe so it can be repacked following any colour changes, either of the skin (sun exposure) or the degrading of the silicone.

SUMMARY OF THE CASE

The provision of prosthetics has huge impacts on the patient, often maintaining dignity and improving self-confidence. Auricular prosthesis, although technically challenging, are often very successful.

With the ability to digitally copy and duplicate the natural ear, it gives the technician the ability to make exact replicas in terms of size and shape. The skill comes down to getting the shade, intrinsic and extrinsic colouring correct to match the surrounding tissues (Figures 10 to 12).

On reflection, I was very pleased with the result. The shade was a good match and the magnetic implants meant the patient didn't need to use medical adhesive (Figure 13). The patient's feedback was also encouraging. 

Bert Aldridge: 1926-2024

Bert Aldridge, founder of the Orthodontic Technicians Association (OTA), has died at the age of 97

Written by James Green and Sue Aldridge

Albert Edward Aldridge, known as Bert, was born on 11 November 1926 and trained at the Eastman Dental Hospital where he gained experience in all fields of dental mechanics, as dental technology was then called. He joined the Hospital for Sick Children, now Great Ormond Street Hospital (GOSH), on 5 July 1948, the day the National Health Service (NHS) was launched.

Bert predominantly worked in orthodontics but also constructed appliances such as auricular prostheses and hand splints for patients with epidermolysis bullosa. He also established a study model storage system that remains in use today.

In addition to his hospital post, Bert was a lecturer and examiner for the advanced City & Guilds certificate at South London Technical College (now Lambeth College) that, at this time, was in Tooley Street near Tower Bridge. Bert lectured on fixed appliances while fellow lecturer Len

Bradshaw, his counterpart at King's College Dental School, instructed on removable appliances. They discussed the possibility of forming an association for orthodontic technicians and, in 1971, Bert wrote to orthodontic technicians employed by London teaching hospitals, inviting them to attend a meeting to discuss the idea.

IN 2007, THE
ALDRIDGE MEDAL
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WHICH IS AWARDED
TO THE BEST OTA
CONFERENCE
LECTURER EACH YEAR,
AS VOTED FOR BY THE
DELEGATES

'GREATLY MISSED'

The first meeting of what would become the OTA was held at 6pm on 11 October 1971 at the Hospital for Sick Children. The 13 orthodontic technicians who attended agreed that such an association should be formed. A steering committee was organised, and Bert became the first secretary, later becoming chairman. In 1972, further meetings were held and the constitution was written.


In 1973, the first conference was held at University College Hospital Dental School. Bert retired from his role as senior chief dental technician on 31 July 1989 after 41 years at GOSH, but returned on a part-time basis. The following year, he was awarded the first Fellowship of the OTA by then president David Di Biase.

In 2007, the Aldridge Medal was introduced, which is awarded to the best OTA conference lecturer each year, as voted for by the delegates.

Bert said he was 'very honoured to have an award named after me and I hope it will encourage members to give lectures at future conferences'.

Bert enjoyed many activities during his long retirement, including lawn bowls, watercolour painting – until his hands got too shaky – and gardening. He still had a wonderful display of brightly flowering pots last summer. He also enjoyed bridge, which he last played in January this year.

He was an avid reader, especially historical fiction, and was a lifelong Arsenal supporter.

Bert married Lillas on 28 March 1953 and they celebrated their 70th wedding anniversary last year. He passed away in the early hours of their 71st wedding anniversary, aged 97. He will be greatly missed by his wife, daughter Sue, son Graham, grandson Josh, granddaughter Zoe, daughter-in-law Wendy and his wider family and many friends. 



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First impressions from a dental technician

Naina Dominic discusses the challenging start to her career and why dental technology is not what she had initially expected



NAINA DOMINIC

Orthodontic dental technician,
Royal United Hospitals, Bath

I graduated from Cardiff Metropolitan University in July 2023 with a BSc (hons) degree in dental technology. In November 2023, I was appointed as an orthodontic dental technician for the oral and maxillofacial surgery and orthodontics department at Royal United Hospitals, Bath.

Prior to my appointment, I undertook an internship position at Cardiff and Vale University Health Board Dental Hospital as a trainee dental technician.

I have always found hospitals an intriguing working environment and my time spent as an intern, albeit brief, confirmed my interest to work in a laboratory situated in a hospital.

Both of my parents are dentists, which meant that growing up surrounded by their working environment had always naturally inclined my interests towards the world of dentistry.

I fully expect CAD/CAM, additive manufacturing and automation processes to become fully entwined with our daily practice

A CHALLENGING START

Having recently graduated as an international student, my main concern was primarily to secure a job in a desirable location that aligned with my plan for professional development. In turn, finding a permanent position in an NHS hospital was challenging.

I came to the realisation that if I wished to pursue a career within the NHS, I would

have to be open to the idea of relocation.

Secondly, as a newly qualified technician, I wanted to reflect on the quality of work that I produced, as well as refine my competency further.

Nevertheless, my time at the Royal United Hospital is everything I had imagined it to be. The department has introduced a robust plan for personal and professional development. I have learned volumes about the required standards of appliance fabrication and the sequencing of orthodontic treatment planning. I have also been able to solidify my existing skill set and further expand my knowledge, resulting in improved confidence in the work I produce.

Furthermore, I have had the opportunity to work alongside the department's point-of-care 3D printing and virtual orthognathic planning service, which has sparked my interest exponentially.

NOT AS EXPECTED

The profession was quite different to what I had initially perceived. I once believed that dental technology only existed in a commercial capacity. It was a very pleasant surprise to learn that hospitals have on-site dental laboratories to provide immediate technical support to the clinical team.

Unfortunately, while enrolled in the full-time degree there were minimal



Laboratory



opportunities to gain experience in a working laboratory. Furthermore, I have since found that the workflows taught were somewhat outdated with regards to how the laboratories function in reality.

Additionally, it has been amazing to experience how well integrated and inclusive hospital departments are. The



Royal United Hospital has been incredibly supportive in welcoming a newly qualified dental technician and have guided me to work towards my best.

The profession was quite different to what I had initially perceived

DIGITAL FUTURE

The future of dental technology is, without a doubt, driving towards further digitisation. I fully expect CAD/CAM, additive manufacturing and automation processes to become fully entwined within our daily practice. Consequently, I expect to see a shift amongst the list of competencies for future dental technicians as the industry progresses. Personally, I have been interested in further developing skills in orthognathic planning, alongside increasing my knowledge in digital orthodontic workflows. 



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Winning Best Dental Technician

Lola Welch reveals how it felt to win at the 2023 Dentistry Awards and her advice for anyone thinking about entering



LOLA WELCH

Senior prosthetic technician,
Ceramic Designs Lab

PLEASE INTRODUCE YOURSELF

My name is Lola Welch and I'm a senior prosthetic technician from Ceramic Designs Lab in Hove.

HOW AND WHY DID YOU BECOME A DENTAL TECHNICIAN?

I honestly cannot remember! I went to university to study a different subject first, but it was mainly a science-based course and I missed using my hands and being creative.

I don't remember who first told me about dental technology, but I'm so glad they did as I cannot imagine doing anything else.

WHY DID YOU ENTER THE DENTISTRY AWARDS?

I had a very busy, but very good, year career-wise.

I was running courses, lecturing, writing articles and even taking part in the Panthera Master Cup competition. I thought that if there's ever going to be a good moment to enter, this must be it.

HOW DID IT FEEL TO WIN BEST DENTAL TECHNICIAN?

I couldn't believe it! When I sent off my submission, I had no idea who else had too. So when I found out I was shortlisted together with Nina Frketin and Beth Brown, I thought: 'Oh, OK, I have no chance with these ladies, but at least I made it to the top three'.

I was so at peace with this thought that I wasn't even nervous. When my name was announced as the winner, I was so shocked that I didn't know what to do with myself. I did cry a little bit... happy, shocked tears!

WHAT DOES THE AWARD MEAN TO YOU?

The award felt like a validation of what I already considered to be a good year. I'll be honest, at first my imposter syndrome took over and I felt that I shouldn't have won. But then my husband, Mark, reminded me that it's not a competition for the best technician ever, it's the technician of the year – that helped me to truly enjoy the moment.

WHY WOULD YOU RECOMMEND OTHER PEOPLE ENTER THE AWARDS?

It was a wonderful experience. Even before winning, just being shortlisted felt amazing. I asked a lot of clinicians that I work with to write a short testimonial for me, and reading those was one of the nicest moments.

The ceremony was spectacular. It was lovely to catch up with my industry friends. If you're thinking about it, just do it! It's a good excuse to dust off your dancing shoes, too!



WHAT ARE YOUR TIPS FOR BEING A SUCCESSFUL DENTAL TECHNICIAN?

Constant investment in your personal development and education. Perseverance and practice.

I worked very hard for over 20 years to get to where I am now and there's still a long journey ahead. I used to think that things happen overnight and that I could learn a new skill in a day, but we all know that reality is much different. I love learning and I can't wait to see what else is waiting for me to explore!

WHAT IS NEXT FOR YOU?

I have a very busy 2024! I have many lectures and hands-on courses planned for the upcoming months. In May and June I will be lecturing in Birmingham, Bath and even Montreal. I absolutely cannot wait!

IS THERE ANYTHING ELSE YOU WOULD LIKE TO ADD?

Before I decided to submit an entry for the awards, I was feeling a bit awkward about it all, as if I shouldn't nominate myself. But don't forget that everybody else in this event did exactly the same! So, if you had a particularly good year that deserves some recognition, just do it! [👉](#)

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A letter to my younger self

Looking back on his career so far, **Chris Wibberley** shares why saying no and embracing failure are key to success



CHRIS WIBBERLEY

Lead dental technician and owner,
CW Dentures

I have spent nearly 15 years in dental technology. Compared to many others in the profession, that really doesn't seem like a long time. However, I've been very fortunate to have packed many positive experiences within my time in this rapidly evolving industry.

PAY ATTENTION

You've just graduated from university in a completely different field to the one you've found yourself in. Your primary interests, like most of your friends, appear to be only in rugby and partying on the weekend. Your father has given you a job at his successful dental lab as the delivery driver and you're late for your first day of work. As you start to register a slight interest in what the lab staff do, you find yourself being moved to the workbench in the metal department.

Now is the time to look around at the staff who work alongside you. The endless talent and experience of these individuals is something you should pay attention to. They are there to help you, and shying away from their help will only set your progress back. If you embrace their help, you will fast forward your skill set and knowledge of dental technology in no time.

YOU CAN'T ADVANCE WITHOUT FAILURE

Your assumption that being your father's son means that therefore everyone must think you should know more than you actually do will be the constant 'handbrake' to your progress for many years. It will stop you from having the confidence to stand up and speak, teach and even get involved in group discussions (both in person and on social media). As a result, the fear of failure will stop



you from making any meaningful career development. For several years.

It is only now, 15(ish) years later, that you have a thriving business (created from nothing), a marriage to a woman who truly believes in you, two children, several successful training courses and you've become an international lecturer, a Dental Technicians Guild (DTG) member and a qualified clinical dental technician (CDT) that you know there can be no advancement without failure. There must be all different types of failure for you to gain any sort of success, from the small, inconsequential failures to the epic ones. The more

embarrassing or costly, the better the lesson. Embracing failure from the beginning of your career will, oddly, save you a lot of pain, time and money.

KNUCKLE DOWN, IT'S ABOUT TO GET REAL

So, you've managed to not get sacked for a couple of years, and the opportunity to apply for the two-year CDT diploma course at the University of Central Lancashire has presented itself. You do a great job at the interview with the course leaders, yet pretty much every person in dental technology thinks you got onto the course because of

who your father is. This is a viewpoint you will learn to deal with throughout your career, and you will quickly realise that others' opinion of you is none of your business. Your parents and colleagues believe this diploma course has really changed your attitude towards your career and life in general.

Actually, the real reason (unknown to anyone else) you've had a sudden surge of adult seriousness is that your girlfriend is pregnant, and this has scared the immaturity out of you. You now realise that life is going to change before you know it and you feel completely ill-prepared for what is about to happen.

As a result, you knuckle down, knowing that more qualifications can only mean better career prospects, and meaning you have a half decent shot at being a good provider for your soon-to-be-born daughter.

There's something you haven't realised after working full time, studying hard and passing (with merit) the CDT course along with caring for a baby daughter over two years. For the first time, you've experienced hard work and pressure. You now understand that hard work breeds enthusiasm, and this career – the one you once viewed as a job that passed the time – is now your passion.

TRUST YOUR INSTINCTS

As you start to improve both your skills and knowledge further, you begin to realise that other technicians are keen to ask you questions and the taste for teaching grabs you. This is something you never saw yourself doing in a million years, but the success of jumping into your diploma with both feet has given you that spark of enthusiasm – and less concern for failure.

As you gain a reputation for teaching other DCPs and start to navigate the new opportunities presented to you, it's important to realise that specific goals/targets written down and planned help you make the most of your time. What seem like profile raising and money earning opportunities can often be wasteful distractions in disguise. I would urge you to never sign a contract with any outside company, regardless of the perceived incentives – especially for teaching purposes. This, you will find, can shut down other more worthwhile opportunities. Your instincts will provide you with a very accurate initial gauge of said opportunities. If the sales patter seems too good to be true, it very often is!

Never take your eye off what is most important. This may sound so obvious, but your own business should come first, and side



projects, such as teaching/lecturing should always remain just that: a side project. Focus more on your dental technology baby, CW Dentures. The rest will take care of itself.

NO DENTAL TECHNICIAN IS AN ISLAND

As mentioned earlier, you will have the opportunity to learn from so many great technicians. I truly believe I was taught and mentored by some of the best technicians in the UK. You must take the opportunity to learn from and ask all the questions you can of these individuals. Experienced heads like Steve Taylor and mentors like Marc Northover will be invaluable to your career. Take every opportunity they throw your way.

Take zero notice of the negativity that sometimes appears to consume dental technology, which will often come from within your own circle. There are always the techs who are unhappy with the choices they have made who want to draw you into their misery. They are the ones who blame others for their own failures and who often view the evolution of our industry as it's death. They will always view your situation as something that has generously been handed down from successful father to fortunate son. The truth is somewhat different, and 15 years later, as you sit on the train to London preparing your lecture for a postgraduate group of dentists at the Eastman Institute, you'll realise you are the first of your namesake to do so.

LEARN TO SAY NO


It seems cliché, but pursuing what you enjoy and truly putting your heart and soul into it is the only thing that really matters in your career. Money is just a byproduct of hard work and passion.

Don't chase the money, chase the opportunity of being a truly great dental technician!

In time, you'll work out when and how to say 'no'. This is an artform. Your priority is your family, and when an 'opportunity' takes you away from your family for no real benefit to you, your family or your business, you are being roped into someone else's opportunity and benefit. Say 'no' and realise that disappointing others is sometimes a necessity, and not a crime. You will live a much happier existence. Saying 'no' also tells others that you're not a complete pushover and shows where your limits lie.

You must also take time for yourself. It took me this long to realise that time for yourself in pursuing hobbies and interests is not laziness, avoidance of work or even procrastination. It's the recharge that everyone needs. I never work a weekend and take one Friday off a month to spend the day with my wife. I train Brazilian jiu-jitsu three times per week, coach my son's football team and take my daughter to dance class (admittedly, my wife carries the heavier load when it comes to child commitments, but I like to think I do my bit). These things have taken a back seat to business commitments in the past, and while sacrifices are necessary when building a successful business, I have found that continued neglect of yourself makes you an unhappy person even in a job you enjoy.

ENJOY IT!

Finally, you should enjoy the vast and varied experiences this job brings. Both negative and positive experiences will shape you as a person and, who knows, the next letter I write you in another 15 years might be very different (I hope). 

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CHRIS WIBBERLEY



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Gold mine of information

Emily Pittard explains how important communication and information is for lab, patient and dentist, and why this inspired her to create her own gingival characterisation shade guide



EMILY PITTARD

CDT, clinical director and co-owner, Hive Dental Laboratory

I started as a dental nurse with a strong understanding of documenting information, as it was my role to ensure all the dental notes were both accurate and contemporaneous. I wrote up the lab dockets as dictated by the dentist. At times I would feel like I was writing reams of information, but when it came to writing the lab docket, it would sometimes simply say: 'Crown UL6 shade A3' or 'P/- Acrylic denture Shade A2'.

At the time, this was normal to me. Maybe I thought technicians gathered a wealth of knowledge from the impressions so they didn't need any more information. Regardless, I didn't give it much thought, as I was always directed by the dentist.

MORE INFORMATION

I then went on to become a dental technician, where I soon discovered we need a lot more information than just the device and shade.

At times, which I am sure a lot of technicians and labs have experienced, trying to get hold of a dentist for a bit more information (you would be surprised by how often the shade is left off) like an alternative design or a drag on an impression can be a lengthy ordeal. It can throw the whole workflow off.

Every job that comes into the laboratory has a carefully allocated timescale to allow for it to be checked, poured or printed, created, quality controlled, packaged, invoiced and driven/posted back to the client. Replying to your lab a day late can cause quite a delay in production and, at times, can result in requesting a new return date.

This, in turn, results in the admin team of both the clinic and the laboratory having to rejig everything. And this is the best-case scenario; I haven't even touched upon the



patient getting angry about changing their 'fit date' or having a holiday or wedding or second cousin's bat mitzvah that they really wanted their UL6 crown for. At times like these, the poor dental clinic reception may get a frosty reply, which is then transferred to the lab admin team. This is usually in the form of: 'Can you get this made any faster? The patient isn't impressed,' or: 'Patient angry, need back for original return date.'

And to think, all of this could have been avoided with some clear communication.

'DENTAL ARTISANS'

As a clinician in surgery, I do my level best to try and gather as much information for my tech team as possible.

Sometimes I feel the name 'dental technician' conjures the image of a bloke with a bag of tools, some nuts and bolts and the odd bit of wax sat in the eyebrows. I prefer the term 'dental artisans' because that's what they are, creating bespoke medical devices where no two creations are the same. And as for the image of a bloke, well, the Nightshift movement to empower female dental technicians has chucked that in the bin.

If, as the clinician, I am the commissioner for such artwork, shouldn't I try to be as specific as possible? Otherwise, my vision of the outcome could be completely different to the dental artisans.

SHADE GUIDES

As a clinical dental technician (CDT), I create a lot of dentures and implant-supported overdentures. My favourite thing to do at the bench is gingival and tooth characterisation. I realised this is something really difficult to

convey to the dental artisans, especially the gingival pigmentation and interproximal staining. Of course, photographs are an absolute must! But what else can I do? Then, bingo – I created a gingival characterisation shade guide!

I deliberately chose a simple black and white design so as not to result in the clinician being banned from using the printer as all the ink keeps going.

I like using Ivoclar Nexco composite. It has its own gingiva shade guide, which I bought and use for shade matching, just as you would with tooth shade matching. I then use the diagram to draw the areas on the flange and/or note the attached and detached tissue shade.


Taking a photo with the gingival shade tabs against the gingiva helps the lab colour match. I also download the chrome design sheet from Finlay Sutton's treasure trove of free content on his website. The Hive team is also in the process of making our own for our clients.

I have found a lot of clinicians are happy to do what is needed to get the best results for their patients. Sometimes, they may need a gentle reminder for photos or a subtle printout of this sheet in their box along with their try-in.

We all need to find the best way to communicate. As a self-professed visual learner, this is just one of the ways I optimise communication with my dental team. [L](#)

Gingival characterisation

Patient name:



Shades

Attached tissue:

Detached tissue:

Stains:

And to think, all of this could have been avoided with some clear communication

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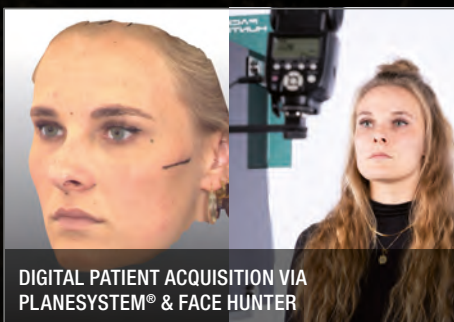
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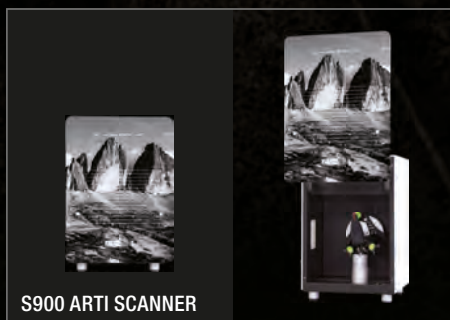
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Dentistry Census: key findings

How do your earnings compare to the average? What do your peers really think about the health service? Find out in the **Dentistry Census** results



GUY HISCOTT
FMC's content director

We believe that the 2024 Dentistry Census is the biggest survey ever conducted on the UK dental profession.

Putting it together has been a huge undertaking, but such a fulfilling one: this work has been a labour of love for all of us who want to understand the sector in which we work better.

The results provide a fascinating and, I hope, valuable, glimpse into the dental profession at one of the most volatile times in its history. Because there are some stark warnings in here too, so if you take just one headline away from our research, let it be this: NHS dentistry must change – and quickly – if it is to survive.

There is no other option left. The situation is critical: years of neglect and underfunding are coming home to roost.

Nine in every 10 dental professionals believe the nation's health is under threat because NHS dentistry can't change. Can this be much of a surprise?

Reform has been promised incessantly for almost 20 years but effective change has never felt further away. Professor Jimmy Steele's seminal review of the 'new' contract was published 14 years ago and the changes he suggested are yet to appear in general practice.

The NHS Dental Recovery Plan was released in February of this year – but the consensus is that it's a quick fix, rather than genuine, sustainable reform of the deeply flawed NHS dental contract.

STATE OF TRANSITION

Dentistry is in a state of transition, and we are far from done with those changes. This is no bad thing: while we have made a start in tackling some of the problems, there's so much work to be done.

The profession's struggle with mental health continues to cast a bleak shadow – we are making strides in talking about it, but that work will never be complete until every person in this profession feels able to reach out for help in their times of need.

Whether it's making the profession a more equitable and diverse space, becoming greener, or empowering all members of the practice team to be able to work to the fullest scope of their practice, there is still much progress to be made. So, the second headline to take away from this research is that there will be a future for the profession to do this in.

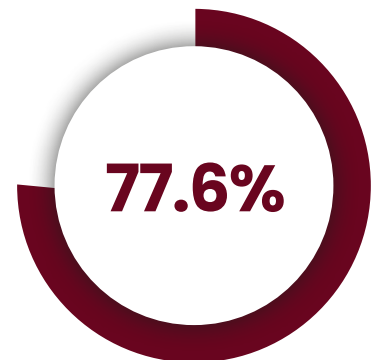
What shape that future will take remains to be seen. When our next Census rolls around, I suspect some of that shape will be visible in these findings – though we won't know where to look for it without the perfect lens of hindsight.

In the meantime then, it's business as usual. I hope that these findings help you all face that with a little more confidence – and a lot more insight.

LIFE IN THE LAB

The increasing corporatisation of the laboratory world – a workforce that makes up a comparatively small part of the dental population – delivered a wide spread of responses to our research.

Not all labs are the same and the profound spread in the range of the size of



of technicians anticipate doing more private work in the next 12 months



Laboratory vital statistics

£350k

average turnover

£60k

average profit

17.1%

average profit
margin

6.5

average number
of people in the lab

70/30

private/NHS
percentage split

**Dentistry
Census**

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these businesses tells its own tale, with a marked difference between large centres employing tens of technicians to smaller businesses with much smaller teams.

The two extremes stand out in business spend: half of labs (50%) report spending up to £50k on capital equipment in the last three years, these tend to be smaller affairs. But at the same time, nearly a third (30%) of labs have spent more than double that.

While the growth of the private market has undoubtedly driven much of this investment, the ranges of results in this survey back up what anecdotally we are already hearing about the world of dental laboratories: that it is a sector in the midst of profound change, with a final shape that is yet to be established.

Top treatments



Laboratory spend on capital equipment in the last three years

Over £100,000	30%
Between £50,000 – £99,999	15%
Up to £50,000	50%
Nothing	5%

Earnings

Technicians and clinical dental technicians

Over £200,000	1.1%
Between £150,000 and £199,999	4.4%
Between £125,000 and £149,999	1.1%
Between £100,000 and £124,999	11.1%
Between £75,000 and £99,999	15.6%
Between £50,000 and £74,999	20%
Between £25,000 and £49,999	30%
Under £25,000	16.7%

MENTAL HEALTH

The issue of mental health has seen a jump in awareness in recent years, with the profession growing more mindful of the effects of working in a highly stressful clinical environment or running a demanding dental business.

But awareness is not the same as action. While some of our findings indicate that more people are aware of the mental health support available to them, others only serve to highlight the critical need for vigilance: around a fifth of respondents – 21% of all roles, and 17% of dentists specifically – have experienced suicidal thoughts.

Key stats:

- 66% of all respondents say they have a good work-life balance
- 52% have sought help for their mental health
- 68% feel they have access to support for mental health if they need it
- 30% say their work regularly makes them feel happy
- 40% of all respondents say their work regularly makes them feel content.

WORKING LIFE

We saw a higher number of business owners compared to other demographics, with 40% of technicians and clinical dental technicians reporting owning the business they worked in, and

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a further 8.2% telling us they had operational control. With an average age of 42.4 years, this is perhaps to be expected.

While respondents' experiences in their working lives were diverse, where the technical community unites is in its attitude to regulation: just 7% of technicians believe the General Dental Council (GDC) is doing a good job of protecting patients.

The response to the Care Quality Commission (CQC) was less extreme, with 51.7% of technicians feeling it did a passable job of ensuring standards.

With that said, this number dropped to 40% for clinical dental technicians – a cohort more likely to have dealings with the CQC.

And while the technical community has much to be happy about on the face of things – with 69.2% feeling that patients value what they do – only half (53.8%) report having a good work-life balance and about the same number found it hard to unwind after work.

The pressures on dental technicians, as for all members of the dental team, are many – yet the community stood out by being 12% less likely to have sought help for their mental health.


THE REGULATORY RELATIONSHIP

Dentistry's fraught relationship with its regulator has been well documented in recent years – and, following a series of high-profile legal cases, shows few signs of improving.

Indeed, 41% of respondents believe the GDC is doing a poor job of protecting patients – a figure that leaps to 83% of anyone who has been investigated by the regulator. This is despite the fact that more than three quarters (84.5%) of those investigated saw their case closed at case examiner stage or before.

WHAT DOES THE FUTURE HOLD?

In a period that has been characterised by rapid, often uncomfortable change, the profession's viewpoint on the future is perhaps the most telling barometer of how people really feel – and in many ways, the picture is brighter than in 2021.

Where 22% anticipated leaving the profession entirely two years ago, that number has dropped to less than 8%. 

Do you have a good work-life balance?

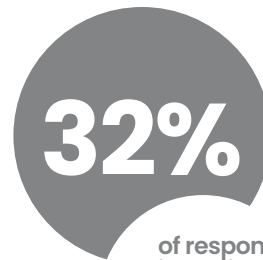
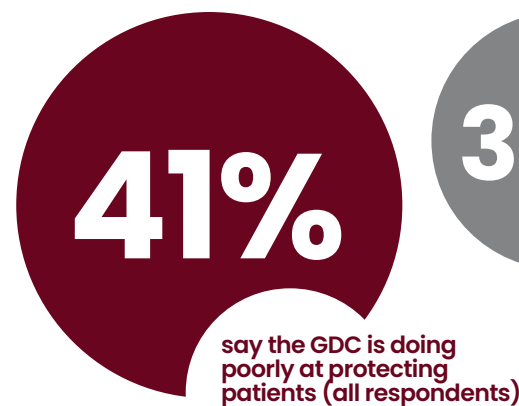


Top memberships

- 1 Dental Laboratories Association**
- 2 Dental Technologists Association**
- 3 Association of Dental Implantology**



of technicians find it hard to unwind after work



of respondents never investigated by the GDC say it is doing a good job of protecting patients

Investigations: stage reached

Struck off	2.6%
Suspended	0.5%
Stage four: practice committees	12.4%
Stage three: case examiners	28.4%
Stage two: casework	28.4%
Stage one: initial assessment team	27.8%

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FOR MORE INFORMATION

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Is the future bright for dental technicians?

We asked the dental profession whether they believe the future is bright for dental technicians – here's what was said...

Dentistry's Big Questions is a new feature that explores some of the hottest topics in the profession. Up for discussion recently was whether the future is bright for dental technicians, and the outcome makes for interesting reading.

Of those who responded to the online poll, 63% said no, 23% were unsure and only 14% think the future is bright.

So, is the future bright for dental technicians? Hear what some people said...

MARK AMBRIDGE, CLINICAL DENTAL TECHNICIAN AND FOUNDER OF AMBRIDGE CERAMICS

Well, I for one believe it's a yes! Why? People are living longer and keeping their teeth longer. Teeth are not 'designed' to last as long as people are now living. Therefore, there will be a need for skilled people to make teeth! (OK, it's a broad sweeping statement.)

Crowns, bridges, veneers, implant retained work and, of course, dentures – all these will be required tenfold in my opinion.

So yes, the future is bright. As dental technicians and clinical dental technicians, we will – and now do – have new technologies at our fingertips to help with this exploding market.

DONNA COLE, TECHNICAL MANAGER AND CLINICAL DENTAL TECHNICIAN

The future is so, so bright for dental technicians. My belief is train and invest in the people.

Thinking back to how I trained, fortunately I was given the time and investment from each lab I have worked in, right from the 18-year-old on the YTS scheme. It is hard to work and train the lovely new people I have had the privilege of meeting and working with in my various rolls.

I also believe if you are passionate about what you do, it brings the best out in the team. There is always something in an



employee – you can see their niche and guide them to achieve. All that said, it does take hard work from all parties and encouragement from those who we are teaching and guiding.

I have always loved this profession. Teeth are great!

What I do believe lets our profession down is the colleges and universities that give unrealistic expectations for the students. I'm all for apprenticeships!

RICK ESGATE, DIGITAL AND LAB SPECIALIST

The numbers look pretty healthy, really, when you look at General Dental Council (GDC) registration. There are just over eight dentists for every technician registered, but don't forget this only counts 'registered' technicians. There are loads more 'lab assistants' or 'process workers' so this could easily come down to six or even four dentists to every person carrying out lab work.

MARK MALEY, DIRECTOR OF A-LINE DENTAL SERVICES

There are a number of considerations. Firstly, the ageing issue. A recent article proposed a significant proportion of technicians were approaching retirement age within the medium term. I agree. That in itself asks the question who or what does the work.

Secondly, the training and development of new technicians. It is an expensive course to run, but if we want dental technology to thrive, we need more. We need to replace those of us shuffling off this dental coil.

Third, humans have not evolved significantly during my 40 years of dental technology. They still have teeth or want some new ones. That is still a lot of work for us to do.

Finally, I have seen the quality of the prostheses created. There are a lot of very talented technicians. Without the inputs, dental technology is in a precarious position. To those younger technicians with the skill sets I have seen, fill your boots – you will thrive. It is going to get interesting.

ALAN DAVENPORT, OWNER OF ALAN'S DENTAL LAB

It's bright as long as you keep adapting. I'm hardly doing anything that I did when I started 35 years ago, and I'm totally loving my job because I adapted to the market.

PETER HIGGINS, DIRECTOR OF P&C DENTAL LABORATORY

It's a no from me.


RICHARD YATES, DENTAL TECHNICIAN

And it's a no from me.

TURNER DENTAL LAB

Big no from me. There are better careers out there with better pay and future. This profession is dying, [it] can easily be taken over by machines and corporate companies using process workers to do this job in future. So, it's a waste of time studying and dreaming to make a career out of it.

HANNAH POTTER, LAB TEAM LEAD

I really think it's bright for those willing to change with the times. It's not easy to change and it can be a huge learning curve, but working in a lab is a far nicer environment than it was 20 years ago. We have to move forward and embrace where the industry is going rather than fear it. 

Don't neglect manual wax-ups

Regularly practising manual wax-ups is crucial for all dental professionals, says **Alla Leal**



ALLA LEAL

Senior dental technician,
Royal Dental Lab

When I first started my dental journey, all parts of technical work were manual. For many years, I used to practise manual wax-ups

on a daily basis. This gave me a huge advantage over technicians who had started working in digital protocol straight away. Every case, every tooth, was a precious lesson and a precious opportunity to go through the morphology and function of every clasp, every fissure and every concavity. Nowadays, we have a lot of programs for digital design, which saves a lot of time for sure. But why is regular practising of manual wax-up so crucial?


Manual reproduction of forms not only refines your manual skills, but also gives you detailed understanding of morphology and develops observation and focus. Wax modelling is an essential tool that allows the dental technician to improve their professional level and deepen their knowledge of the functional anatomy of the teeth and the entire dental system. By giving yourself some time and using inspirational models and pictures, you'll find it becomes amazing training and a meditative practice. It's one of the first things I teach students, and still regularly practise myself.

IT'S NOT JUST FOR TECHNICIANS

Practising manual wax-ups is not only important for ceramists, but for CAD/CAM technicians and cosmetic dentists too. It helps to refine their skills and understand the intricacies of tooth morphology and anatomy. This practice is essential for achieving natural-looking and functional dental restorations.

I am happy that a lot of dentists now recognise the benefits they get from practising manual wax-ups – it improves the look of their restorations, they understand how to visually shorten, lengthen, narrow or widen teeth, how to create natural texture, and it improves their precision and detail. I'm frequently asked by cosmetic dentists for

guidance and information about the equipment, materials and resources needed to start practising wax-ups.

Overall, manual wax-ups require minimal equipment and can be a cost-effective way for dental students and dental professionals to develop their manual skills and knowledge of morphology. 



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CDT scope expansion: for or against?

We find out whether the profession would welcome a **scope of practice expansion** for clinical dental technicians

The Clinical Dental Technicians Association UK (CDTA UK) is calling for an expansion to the scope of practice (SOP) of clinical dental technicians (CDTs).

The proposal, written by Rob Handley and Rob Kenyon, was put together with consideration of the General Dental Council's (GDC) commitments to equality, diversity and inclusion (EDI).

Find out what people think about this proposal... [L](#)

I, the undersigned, wholeheartedly endorse and support CDTA UK's SOP expansion proposal. I'm a CDT and I currently own and operate a two-chair private dental practice based in Newcastle upon Tyne. It is a daily occurrence that the current SOP for CDTs creates barriers to swift and accessible treatment for many of our denture patients, resulting in treatment delays or unfair financial burdens on patients who often cannot afford private treatment fees.

For example, one of our many complete denture patients may need a straightforward relining or rebase to a complete denture that opposes natural dentition or has underlying retained roots. In line with the current SOP, the patient must be referred back to their registered GDP for referral (if they have one) or see one of our GDPs for this (we currently do not have any emergency appointments for eight weeks) at a cost of £75 for a private exam fee, often diagnosing treatment they have no intention of addressing at our private practice. I urge the GDC to review the current SOP guidelines and move towards a more accessible framework in the best interests of patients.

Ross Chapman

I feel, in most cases, we are well respected, and by working with good dentists who understand the benefits of working with a CDT, our current SOP enables us to provide an outstanding denture service with our USP. Although it is not perfect, I feel that our current SOP works very well while also doing a good job of protecting patients.

If CDTs want to see patients directly, then education is the only way forward and, therefore, CDTs will need to be trained to the same level of expertise and knowledge as dentists. This would require extra time and cost of that education as well as the increased cost of a CDT's indemnity insurance, which would rise significantly. Additionally, you would have the extra cost of updating the CDT clinic to include X-ray equipment etc. The list and costs will escalate.

Andrew Barrs

I'm fully in favour and totally agree – the time is right for all the right reasons. When something makes complete sense, as this does, it would be a shame if it were to be dismissed by the GDC. Exciting times.

Mark Ambridge

I had the awkward situation where the dentist made the denture, the patient couldn't wear it and then the patient contacted me to help. Now I have to ask for a referral and explain that the denture the dentist had made was not suitable. Very awkward!

Anonymous

Unless you get rid of prescriptions from a dentist for partials then there is not a lot wrong with the current SOP. There is no way, in my opinion, that CDTs should be able to access partial patients. The only way is a massive education package for two to five years, a huge injection investment of money, clinical governance, health and safety etc, and that's just a start. Oh, and definitely the Care Quality Commission (CQC).

Martin Stephen Ellis



FIND OUT MORE

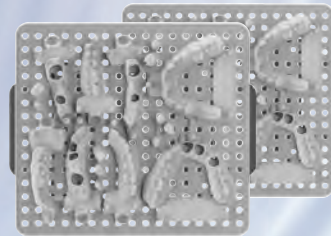
about CDTA UK's proposal by scanning the QR code.

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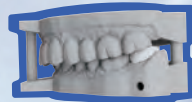
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Setting the right price

Peter Natt shares an ultimate guide to setting your price list



PETER NATT

Retired dental technician
and lab owner

When it comes to reviewing one's price list, many of us will just decide on a percentage increase based on our present prices and we may even look at our competitor's price list and amend our prices accordingly. However, a percentage price increase will not reflect the specific cost increases of the materials or labour costs involved in the manufacturing of specific products. Our competitors will have different overheads to ourselves and, more worryingly, might be manufacturing some products at a loss!

A better way to review one's prices may be to go back to basics and calculate how much it actually costs to make each product and charge accordingly.

At the end of the day, we are running a business and not a charity. For a business to be sustainable, it needs to build up sufficient funds to invest in its future and to prepare for a rainy day.

WORKING FROM HOME COSTS

Many dental laboratories operate from home, and we forget that there is an expense element to this. Like any other business, working from home will still result in operating costs, such as electricity, gas, telephone bills etc – these need to be taken into account when pricing one's products. Otherwise, one is simply subsidising one's clients out of one's own pockets.

For those working from home, there is another potential large future expense to consider, which is that if you are a homeowner and you sell your home having run a business from it, you may find that, on the sale of your property, the local valuation officer may deem that you have to pay capital gains tax on the difference between the purchase price of your home and the sales price of your home. Again, this needs to be taken into account as it could potentially be a large expense.

ESTABLISHING THE PRICES

The best way to establish the prices for your new price list is to work out how much it costs to make a product. There are two elements to calculate this: the fixed overhead costs and the manufacturing costs of each product.

The first thing to do is to work out your fixed overhead costs – these are the costs that will continue whether you are manufacturing products or not. Your running costs effectively continue in the

evenings, at weekends, on bank holidays and even while you or your staff are on holidays. The fixed overhead cost expenses can be obtained and calculated by looking at your previous years' invoices.

The example below is based on the estimated overhead costs of a single-person dental laboratory based at home. The estimated individual overhead costs quoted are only for illustrative purposes and are likely to vary from dental laboratory to dental laboratory.

FIXED OVERHEAD COSTS PER YEAR

Rent (this may just be a notional rent if operating from home, but it needs to be taken into account, otherwise your clients are not contributing towards the costs – especially if you end up paying capital gains tax on the sale of your property)	£6,000
Water	£100
Electricity	£1,400
Gas	£670
Business premises and contents insurance	£750
Third-party and product liability insurance	£830
Compliance to third party accreditation for medical devices regulations	£840
MHRA subscription and updates of new products	£240
Dental Laboratories Association (DLA) subscription	£372
General Dental Council (GDC) subscription	£114
Magazine and CPD subscriptions	£120
Accountants and payrolls	£2,200
Software licence for computers such as Microsoft Word 365 and antivirus	£100
Software licence for accounts system	£1,200
Software licence for laboratory management system	£1,400
Software licence for CAD/CAM and 3D printing	£1,800
Computer maintenance contract	£1,000
Laboratory equipment maintenance	£750
Fuel for delivery vehicles	£2,500
Vehicle road tax, emissions tax and central London congestion charges	£360
Commercial vehicle insurance	£480
Business rates, waste removal, water rates, sewage rates, oil, security maintenance, advertising costs, solicitors, office and delivery staff salaries, car parking costs and car maintenance costs	£0
Total	£23,226

Therefore, the running costs for this dental laboratory operating eight hours per day, five days per week, 48 weeks per year (four of the 52 weeks for bank holidays and annual holidays) would be:

- £2,111.45 per month
- £483.88 per week
- £96.78 per day
- £12.10 per hour (eight hour day)
- 20p per minute.

MANUFACTURING COSTS

We then have our 'manufacturing costs', which is the cost of manufacturing each appliance and is based on the total salaries that one pays oneself to manufacture them.

Let's take a zirconia crown, which would involve the cost of manufacturing the model, the cost of construction, the zirconia crown (in this case it's outsourced), the technician costs and the packaging and delivery.

Based on a salary of £35,000 per year, working eight hours per day with four weeks' holidays and including national insurance contributions and any other benefits, this would work out as:

- £3,181.82 per month
- £729.17 per week
- £145.83 per day
- £18.23 per hour
- 30p per minute.

Say that a zirconia crown takes one hour of your time to construct (including software design), this works out as:

Material for two models at £2.50 per model	£5.00
Cost of outsourcing one zirconia crown at £25 per crown	£25.00
One hour of your time	£18.23
Packing, delivery costs and certificate of conformity	£5.00
Total	£53.23

At the end of the day, we are running a business and not a charity

HOW TO MANAGE EACH COST INCREASE

I would suggest that you always provide your clients with a copy of your new price list at least eight weeks before the price increase as a matter of courtesy to them so that they have sufficient notice for when they are quoting patients for a treatment plan.

Also, attach a dated letter stating when the new prices take effect and your current terms of business, so that there can be no unfortunate misunderstandings.

COMPETITIVE MARKETPLACE

Normally, the first price your clients will look at, for instance in crown and bridge work, is a single zirconia crown. So, if you wish to appear competitive, then this is the one to price competitively.

If you produce work to a consistently high standard of workmanship, offer a reliable delivery and collection service, ensure that the work always arrives well ahead of time, and have excellent communications with your clients and their staff – be it answering telephone calls within three rings or quickly responding to emails and online

I would suggest that you always provide your clients with a copy of your new price list at least eight weeks before the price increase as a matter of courtesy

messages – then it becomes very much more difficult for your competitors to compete with you.

It costs a lot of money to run a dental practice, so most clients with an established patient list do not like to change dental laboratories. This causes them more aggravation than anything else. If they are happy with the service you provide, they are unlikely to switch dental laboratories just because you have increased your prices.

ONE LAST TIP!

Each and every year, increase your prices without exception at the same time – and at a time when your clients are busy. However, avoid just before Christmas, Easter or the summer holidays. [L](#)



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The power of *positivity*

It has never been more important to maintain high team morale in dentistry, says **Eleanor Pittard**



ELEANOR PITTARD

Co-director and owner of
Hive Dental Laboratory

In the fast-paced and demanding world of dentistry, maintaining high team morale is not just a luxury – it's a necessity.

The success of any dental business hinges not only on the technical expertise of its staff, but also on their collective enthusiasm, motivation and camaraderie.

In the current market, where challenges such as staff retention and career burnout loom large, prioritising team morale is more crucial than ever.

TEAM MORALE IN DENTISTRY

UK dentistry faces significant challenges, with a notable number of people leaving the field each year. According to recent statistics, the attrition rate among dental professionals has been steadily increasing, with burnout, stress and dissatisfaction cited as primary reasons for departure.

When you stop and think about it, this is a demanding profession – the pressure to meet client or patient expectations and increasing regulatory requirements could take a toll on anyone's morale.

High team morale, however, can serve as a powerful antidote to these challenges. A positive work environment not only enhances job satisfaction but also improves productivity, patient and client satisfaction, and ultimately the success of the business.

When team members feel valued, supported and connected, they are more likely to be engaged in their work, collaborate effectively, and go the extra mile to deliver exceptional care.

This is not new information – we all know this. But it's very easy to make morale seem like 'just something we look at every six months' rather than an integral part of everyday business.

COST-EFFECTIVE MORALE BOOSTERS

Boosting team morale doesn't have to break the bank. In fact, some of the most effective strategies are simple, cost-effective and easy to implement.

Here are a few ideas:

- **Recognition and appreciation:** take the time to acknowledge and celebrate the achievements and contributions of team members. A simple thank you note, public recognition during team meetings, or small tokens of appreciation can go a long way. NB: this must be delivered in a genuine way from someone that person respects, otherwise it can have the opposite effect!
- **Open communication:** foster a culture of open communication where team members feel comfortable sharing their ideas, concerns and feedback. Regular team meetings, one-on-one check-ins and suggestion boxes can facilitate dialogue and strengthen connections
- **Professional development:** invest in the professional development of your team members by providing opportunities for training, skill-building workshops and continuing education. Not only does this show that you value their growth and development, but it will also significantly enhance their confidence and competence in their roles, which will only benefit the business anyway
- **Work-life balance:** recognise the importance of work-life balance and encourage a healthy equilibrium between work responsibilities and personal wellbeing. Flexible scheduling, helpful time-off policies and employee assistance programmes can help alleviate stress and promote overall wellness. It doesn't have to be an extra two weeks holiday a year; for small businesses, this is almost impossible to offer. But even something as simple as the option to take personal appointments during the week can be helpful.

INCORPORATING MORALE INTO YOUR ETHOS

To ensure that boosting team morale is not just an afterthought but rather a fundamental aspect of your ethos, it's essential to integrate it into your organisational culture and values. Here are some strategies for incorporating morale into your ethos:

- **Lead by example:** as leaders, demonstrate a commitment to fostering a positive work environment through your actions, words and attitude. Your enthusiasm, empathy and support will set the tone for your entire team
- **Set clear expectations:** clearly communicate your expectations regarding teamwork, communication and morale to all team members from the outset. Establishing shared goals and values helps align everyone toward a common purpose
- **Seek feedback:** regularly solicit feedback from team members about their morale, job satisfaction and suggestions for improvement. Actively listen to their input and take proactive steps to address any concerns or issues that arise
- **Celebrate successes:** make it a habit to celebrate not only professional achievements but also personal milestones and team successes. Whether it's a work anniversary, a successful patient outcome or a team milestone, take the time to acknowledge and celebrate these moments together.

By implementing simple, cost-effective strategies to boost morale, foster open communication and embed a culture of appreciation and support into your lab's ethos, you can cultivate a motivated, engaged and resilient team that is poised for success in the face of any challenge. [L](#)

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'SQINNED' restorations

Jędrek Komoda presents a case in which perfect design leads to an optimal aesthetic result



JĘDREK KOMODA

Dental technician and founder of
Kasta&Komoda Laboratory

I have always dealt with the framework preparation for all ceramic works. Each design begins with the modelling of the full anatomy of the restored teeth, similar to the wax-up for full acrylic dentures: alignment in the dental arch, occlusal contacts, contact points, emergence profile, proportions...

Why is this so important? Firstly, it serves as a guideline and shows the path to follow when applying ceramics. The second – and most important – reason is to maintain the correct parameters regarding the thickness and shape of the framework, ensuring adequate strength of the ceramic restoration, to serve the patient for many years. Due to the material development in the field of all ceramics, the proportions of veneering ceramics decrease. The increasingly improving aesthetics of modern materials in addition to excellent mechanical properties have opened numerous possibilities and applications, such as fully monolithic restorations. Experience with manual modelling of wax structures as well as modelling in a 3D environment lets us obtain very satisfactory final results with monolithics, while knowledge of the correct anatomy and occlusal relations remains imperative. In addition, it is important to know the possibilities and limitations of design programs and machines in order to accurately reproduce the design (Figures 1a to 2c).

Full contour work in the posterior tooth area has mostly replaced traditionally layered restorations, while the high aesthetics and natural appearance of lithium disilicate even enabled the use of such solutions with success in the anterior segment.

Along with the development of framework materials, a number of solutions have appeared to finish full contour works. Optical properties such as natural opalescence, fluorescence or the mimicry of translucency in the light-absorbing layer can be given using materials such as Initial Lustre Pastes ONE (Figure 2c), whether or not combined with Initial Spectrum Stains. Due to these materials

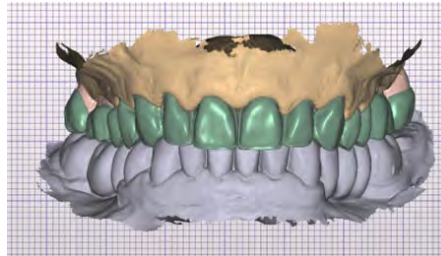


FIGURE 1A: Ready Exocad design. Starting from the full anatomy, the design received a 0.2mm cutback

and solutions, many dental technicians, such as myself, can create prosthetic restorations in an easier and more predictable way.

However, in many cases, the anterior segment requires more refinement and full anatomic solutions that may not be sufficient. The lack of a light-absorbing ceramic layer means that the full contour restorations with imitation of effects may not give a sufficiently natural appearance in daylight and dynamic movements. In these cases, the ideal solution is to use the micro-layering technique. A delicate layer of feldspar ceramics, no more than 0.2 to 0.3mm thick, gives full-anatomic restorations a natural appearance.

In my microlayer work protocol, I traditionally start by modelling the full anatomical shapes, which I then reduce only on the buccal side (Figures 1a and 1b). I carry out the reduction in a legible way in the Exocad software (part of Aadvia Lab Scanner 2) using the 'exclude selected area' tool. It is important to maintain the contact points as well as the length and width of the tooth without reducing the palatal or lingual surfaces. Reducing the above-mentioned buccal sides by a thin layer of 0.2-0.3mm while maintaining the deflection, convexity and side strips allows the most important features of the tooth morphology to be kept unchanged.

The framework prepared in this way is almost a finished product in terms of shape and proportions of the prosthetic reconstruction (Figures 2a to 2c). In order not to lose shape in the production phase, you should get to know the possibilities and limitations of CNC milling machines and 3D printers. In the case of milling zirconium oxide in a five-axis machine, we have a number of

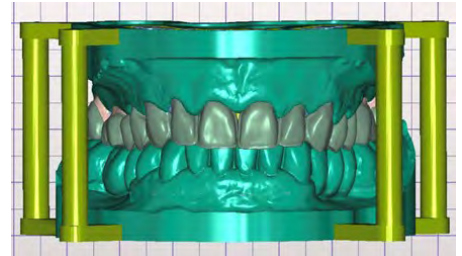


FIGURE 1B: Framework and model, ready to produce with computer-aided manufacturing

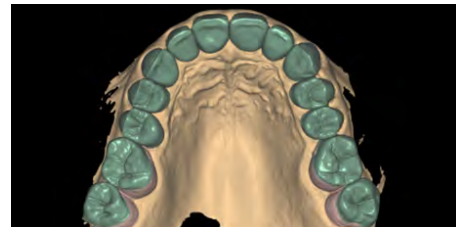


FIGURE 2A: Digital design of the cutback framework (occlusal view)



FIGURE 2B: Occlusal view on the framework made from Initial LiSi Press, shade LT-B1



FIGURE 2C: Occlusal view after the first firing with Initial Lustre Pastes ONE. Internal characterisation as well as connection firing are now finished

parameters at our disposal that will allow us to faithfully reproduce the project.

In addition to the milling strategy and selection of appropriate milling tools, how we position the modelled structure within the block in the CAM software is also important. Many machines have the possibility of simultaneous cutting, even at an angle of 25



FIGURE 3A: Initial LiSi Press framework (LT-B1) with minimal (0.2mm) buccal cutback, ready to receive Initial Lustre Pastes ONE



FIGURE 3C: Immediately after SQIN application and firing, before contact point adaptation

degrees, which will significantly reduce the number of areas that are inaccessible to the milling bur.

I also use half-open holders (c-clamps) with a properly prepared cutting strategy at an angle of 90 degrees, which means that multi-point structures can be recreated with almost perfect precision, even in undercuts and interdental spaces.

The situation is quite different in the case of lithium disilicate structures. In this case, we use two alternatives: the GC Initial LiSi Block – fully crystallised lithium disilicate CAD/CAM blocks – and the GC Initial LiSi Press ingots for pressed structures. Both methods have several advantages. In my everyday work with



FIGURE 3B: After firing with Lustre Pastes ONE. Incisally, L-3 (Lustre Enamel Effect 3 Light Grey), SPS-19 (Illusion 2) and L-OP (Lustre Opal) were used to give opalescence and mimic translucency. The neck part is L-A (Lustre Body A) with SPS-2 (Melon Yellow)



FIGURE 3D: Final result after just two firings: Lustre Pastes ONE and SQIN self-glazing ceramics

lithium disilicate, I choose to print the structures from castable resins, and then press them with GC Initial LiSi Press ingots. This method is a more economical solution, and gives the possibility of reproducing the design in an entirely accurate way. This is because 3D printing as an additive method has no limitations such as the presence of inaccessible areas during milling.

The choice of method is up to you. In my opinion, the production methods described here and the great emphasis on it are inextricably linked with the method of micro-layering. A perfectly prepared framework with minimal reduction is a determining part of my philosophy,

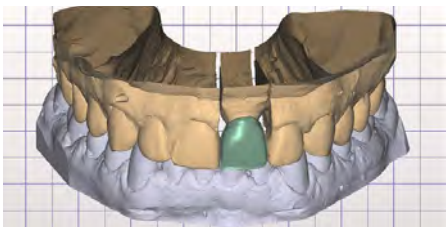


FIGURE 5A: Framework design of a single anterior crown in Exocad, ready to be milled



FIGURE 5C: Final result after the second firing with SQIN. Due to its self-glazing effect, the working time is shortened drastically



FIGURE 5B: Highly translucent zirconia framework, ready for Lustre Pastes ONE application



FIGURE 5D: After cementation in the mouth



FIGURE 4: Final result after cementation in the mouth. The smile looks natural and harmonious

complemented by the GC Initial IQ ONE SQIN ceramic concept (Figures 3a to 5d).

Finishing the case is artistic recreational work. Working with ceramic paste such as GC Lustre Pastes ONE is predictable (Figures 2c and 3b). The concept of working with a material that gives the same visual effect before firing as after firing is a significant facilitation. This enables both ceramists with many years of experience and technicians who do not work with ceramic materials on a daily basis to achieve satisfactory results in a simple way. Lustre Pastes have great potential, suitable for standard works, and highly aesthetic cases. An absolute game-changer was the appearance of GC Initial IQ SQIN, self-glazing ceramics with an unprecedented consistency provided by the Form and Texture liquid. Applying a ceramic layer in an even thin layer has never been so easy and quick (Figures 3c, 3d and 5c). Another advantage is the fact that no additional glaze firing is required, which shortens the working time. The effect after firing does not differ from traditionally layered ceramics. Moreover, the advantage of the ceramic microlayer is the possibility of characterising the structure of the tooth surface, which is difficult to achieve in the case of full contour works. The minimum ceramic layer on the zirconium oxide or lithium disilicate surface gives the restoration a natural look that is clearly visible in daylight, thanks to the optical properties that only glass ceramics have (Figure 5d).

CONCLUSION

With GC Initial IQ ONE SQIN I am able to perform even the most demanding prosthetic works from start to finish with a very satisfying end result. This material fits perfectly into the current trends, where what counts is the aesthetic effect with a predictable protocol within the right time of work. The technique of micro-layering and working with paintable ceramics is a complement to digital dentistry, and the combination of modern technologies with the human element is now the combination that provides the best results.

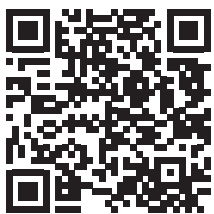
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Creating a solid base for denture patients

Alistair Mayoh explains why the function, comfort and aesthetics of dentures is key



ALISTAIR MAYOH

Marketing director,
Kemdent

For patients who wear dentures, the fit, function and aesthetics of their prosthesis can have a profound impact on their quality of life. Everything from what and how they eat, to their speech and general self-confidence in social situations may be affected.

Creating the perfect denture requires collaboration between the team, the effective transfer of adequate information and the availability of cutting-edge products and equipment.

The dental technician plays an important role in the manufacture of the desired device, applying their skill, talent and innovative materials to ensure stunning, precision-fit dentures.



Made by Surendra Naidoo from Silver Oakes Dental Lab

The goal is consistency, reproducibility and efficiency, preparing for and actively avoiding any potential issues that might otherwise compromise the quality of the denture and the patient's experience. For example, warping of the denture base can create areas painful to pressure within the mouth or just generalised discomfort in the denture-supporting area.

Consideration must also be given to the risk of oral tissue irritation – patients need to be able to wear their prostheses without concern for discomfort or reaction to the material their device is made from. This also promotes oral health, as patients will not be tempted to avoid cleaning under their prostheses due to inflamed or painful gingiva.

Interestingly, the regular wearing of full and partial dentures has also been associated with increased brain activity in older patients, with a study postulating that occlusal contact and force might influence brain function.

By extension, patients who are happy with their dentures mean happy clinicians. For the dental lab, this provides nothing but good news – a satisfied clientele will boost and maintain business reputation, encourage loyalty and support the long-term future of the laboratory. The denture process begins with an accurate denture

base that clinicians can try in the patient's mouth to ensure function and comfort.

To build a stable foundation from which to develop the prosthesis, it is essential that the right material is utilised even at this early stage in the treatment journey.

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Anutex Modelling Wax from Kemdent affords a wide range of advantages for any dental team striving for denture excellence.

The Anutex Modelling Wax is a Type 2, Class 1 Soft modelling wax. The manufacturing process imparts excellent handling characteristics to the wax – it is ideal for high quality work and for simulating the features of natural gingiva when tried in the mouth.

Its characteristics also make it easy to handle, manipulate, trim and clean for exceptional outcomes and a simple workflow that all dental technicians will appreciate. Both clinician and patient satisfaction is further encouraged by the smooth and glossy surface finish after gentle flaming, as well as its non-irritating formula.

BACK YOUR TEAM

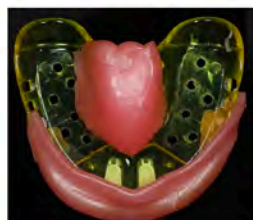
Having access to the reliable and high-quality materials needed to fabricate the best possible dentures for your clients and their patients is a must.

Back your team and their skills by supporting them with materials that elevate accuracy and efficiency at every stage of their daily processes.

For references, contact lucy.veal@fmc.co.uk

FOR MORE INFORMATION

about Kemdent Anutex Modelling Wax, or any other market-leading solutions available, visit www.kemdent.co.uk or call 01793 770 256



Unlocking efficiency and profitability in dental labs

Anthony Gillitt discusses the power of multi-material technology



ANTHONY GILLITT

Sales Manager UK,
Stratasys Dental

In the ever-evolving landscape of dental technology, staying ahead of the curve is not just helpful – it's essential. That's where PolyJet technology comes in. Stratasys, a leader in 3D printing technology, pioneered this multi-material jetting innovation, offering dental labs a pathway to increased efficiency, accuracy and profitability.

At the heart of PolyJet's appeal lies its ability to 3D print different resins simultaneously, a capability that streamlines the production process, offering both flexibility and efficiency. Imagine fabricating surgical guides, dental models and gingiva masks all on the same tray, at the same time, in a single print job. With PolyJet, this isn't just a wish – it's a reality. PolyJet technology provides precision printing in a simple workflow, optimising resources and empowering labs to handle higher order volumes with ease.

But PolyJet's impact extends beyond mere efficiency – it's about precision, too. PolyJet's fully supported printing technology encapsulates each printed application with a dedicated gel-like support material, ensuring accuracy in every dimension. There is no support scarring or decline in accuracy due to downward facing surfaces, as is prevalent with other types of 3D printing technology. This level of precision is particularly invaluable when fitting implant models with analogs or

surgical guides with metal inserts, where even the slightest deviation can have profound consequences and result in scrap.

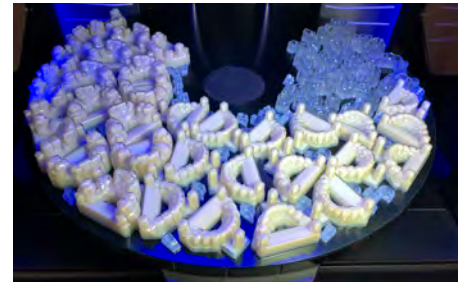
Once the printing is complete, the parts are removed from the build tray, fully cured and the support structure is simply washed off using a waterjet. There are no additional post processing steps required. In addition, Stratasys GrabCAD Print software platform facilitates the production processes with automatic nesting and support generation as well as queue and fleet management.

Consequently, the entire production process is streamlined, minimising the need for manual intervention and maximising consistency.

In a recent case study, Ilan Sapir, digital treatment planning manager at Glidewell Dental Lab (US), shared his experience with this technology. Glidewell was facing surgical guide production challenges ranging from inconsistent surface results to assembly issues and they sought a solution that could improve their accuracy and capacity.

According to Sapir, the impact of implementing Stratasys' J3 DentaJet 3D printer, powered by PolyJet technology, was significant. 'Not only is the productivity of the platform unmatched,' Sapir explained, 'but the parts are much more accurate, especially when it comes to assembly... The speed of processing is much faster than other technologies that we've tried.'

With the J3 DentaJet, Glidewell's capacity went from peaking at 40 surgical guides in 10



hours with two machines, to peaking at 100 surgical guides in eight hours, with only one machine.

In a competitive landscape where every advantage counts, PolyJet technology emerges as a game-changer for dental labs looking to optimise their operations and enhance profitability. By leveraging PolyJet's multi-material printing capabilities and fully encapsulating easily removable support material, labs can unlock new levels of efficiency and precision, delivering superior dental solutions with unmatched speed and reliability.

So, make additive work for you. Embrace PolyJet technology and discover a world where efficiency meets profitability, where precision meets performance, and where innovation knows no bounds. With PolyJet by your side, the future of dental manufacturing has never looked brighter.

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A glimpse of Zirkonzahn's new Premolaris production site

Zirkonzahn discusses the assembly, testing and customisation of the new M6 Teleskoper Blank Changer milling unit

The in-house principle has always guided Zirkonzahn since its first steps in the dental market. This principle is applied to almost the whole range of the company's products, which includes dental materials (such as zirconia, metals and resins), CAD/CAM systems, furnaces, implant prosthetic components, digital diagnostic technologies and all that is needed to finalise individual dental restorations. Products are studied, developed and produced in-house in close collaboration with the company's research and development team, which constantly works to improve and fine-tune solutions to create a reliable planning and working environment, where hardware, software, tools and materials form an

optimum match in the complete workflow. The full control over the entire production process allows Zirkonzahn to have a complete understanding of their products and to react very quickly to customers' needs.

The newest milling unit, the M6 Teleskoper Blank Changer, is the company's answer to the increasing need of more automation as well as greater speed and performances. The machine is provided with full-automatic blank changer function for 16 or 80 blanks (upgradable), the Teleskoper Orbit M6 with Ø 125mm and the newly developed Performance Spindle M6 with Permanent Magnet Synchronous Motor (PMSM), permitting a maximum torque of 200 Ncm at speeds of 6.000 to 50.000 rpm with a peak power of 2.5 kW.

Most of the machine parts are produced in-house in the Molaris I and II production centres and then assembled in the Premolaris production site. Built in 2021, Premolaris is just one of the five production sites owned by the company, all located within the vicinity of the firm's headquarters in South Tyrol (Italy).

Premolaris is the place dedicated to the assembly, testing and customisation of all the company's milling units, furnaces and scanners as well as to the surface treatment of their own-produced implant prosthetics components. In Premolaris, the company's chemistry labs are also located. This is where colours and resins are developed and burs are diamond-coated. In this location, the different parts of the M6 milling unit, e.g. spindle and orbit, are assembled into the machine with all hardware and software components. All parts,



Premolaris, Zirkonzahn's fifth production site in South Tyrol, in the vicinity of the company's headquarters

including ball screws, linear rails, motors and milling spindles, are tested for precision before they are installed and the obtained data is recorded and registered. Then, the machine is calibrated and fine-tuned at individual stations according to standardised production processes.

Machine assembly is a very complex procedure and employees have to comply with strict checklists, which serve to coordinate the different working steps and ensure safety. The new milling unit must pass through numerous quality stations before it reaches the final inspection and each employee is responsible for a specific assembly step, becoming an expert in what he or she does. The first milling process is also performed in this location, but only after the execution of the final checks and tests is the equipment ready to leave the production site, moving on to the on-site logistic department. A selection of glass cases, which the clients can choose from to personalise their equipment, is also available in Premolaris.



M6 Teleskoper Blank Changer, Zirkonzahn's latest milling unit, provided with automatic blank changer function for up to 80 blanks (upgradable), Performance Spindle M6 and the extra-large Teleskoper Orbit M6 with Ø 125mm

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Dental technology is changing fast – are we ready?

Ashley Byrne discusses some of the upcoming changes and challenges in dental technology and how the industry can adapt to this new era

**ASHLEY BYRNE**

Associate director,
Byrnes Dental Laboratory

I recently attended the LMT event in Chicago. My takeaway was that the industry is evolving faster than I anticipated. I have always maintained that our industry is changing rapidly, but after attending this event, it soon became clear to me that unless we adapt quickly, we may face challenges.

The modernisation of our industry has been ongoing for years. Now, almost all aspects of our manufacturing processes can be digitised. Crown and bridge, dentures and orthodontic devices can all be produced using digital methods. However, it's widely acknowledged that some materials and software still require refinement. Nevertheless, it won't be long before these issues are resolved.

A prime example of this is the emergence of printed dentures using Polyjet technology. These dentures are printed in

one piece, offering an incredible range of colours without the need for supports. This is because they are nested in a clear material that is washed off. As it utilises the standard CMYK colour scheme, similar to many standard printers, the quality of colours used is truly impressive.

When artificial intelligence (AI) is employed to design these dentures, one might question the role of the dental technician in this process.

AN AGEING POPULATION

We face a significant challenge with a rapidly ageing population driving demand, contrasted with a similarly aging dental technician workforce.

Evidence from the US indicates that over 60% of all technicians are over 55, a statistic from 2021. The UK and EU exhibit similar trends, suggesting that approximately half of the entire industry is poised to retire within the next five years. In the US, less than 16% of technicians are under 44, a crisis level statistic for any industry. Urgent

change is required. Otherwise, we risk having a solution forced upon us, a fate that has befallen many manufacturing industries in just a few years.

In 2018, my good friend Paolo Kalaw wrote a controversial article titled 'How to survive the dental lab apocalypse', which created a significant backlash.

Paolo discussed this at the Chicago event this year, mentioning that he

URGENT CHANGE
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OTHERWISE, WE RISK
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FEW YEARS

THE TRUTH IS, THE
VAST MAJORITY OF THE
POPULATION ISN'T EVEN
AWARE OF OUR EXISTENCE
SO OUR ABSENCE WOULDN'T
BE MOURNED FOR LONG

received a lot of hate mail in response.

Having read the article, I found myself in complete agreement with Paolo's observations and predictions. Six years later, what Paolo suggested is precisely what is unfolding – a decline in numbers and labs.

REALITY CHECK

I still hear sentiments like: 'Machines can't replicate what technicians do!' and 'If they automate our jobs, we'll resist it!' And, of course, my personal favourite: 'The industry won't survive without us!'

Well, for those who remain sceptical, here's a reality check: the dental industry will find a way forward, with or without us.

The truth is, the vast majority of the population isn't even aware of our existence so our absence wouldn't be mourned for long. Paolo aptly advises us to 'park our egos' and he's right. If we believe that the industry cannot thrive without us, it's time for some self-reflection.

However, amidst this seemingly bleak outlook, there is hope. I genuinely believe

that there's another path forward, but we stand at a crossroads.

Opting for the familiar, comfortable route might lead to extinction, but embracing change presents incredible opportunities.

EMBRACING CHANGE

Witnessing the advancements AI is making in dental technology left me speechless. AI isn't just about designing teeth. It's poised to revolutionise all aspects of our work, from treatment planning to quality control.

The lectures at the event divided the audience – some viewed AI as a threat and the end of our industry itself, while others, myself included, saw it as a gateway to endless possibilities.

The angry dissenters are heading left, while the optimistic opportunists are heading right at this metaphorical fork in the road that is dental technology.

Merely producing high-quality false teeth through traditional methods may no longer suffice. Digitisation is a step in the right direction, but our industry requires radical change and a fresh perspective.

THE DENTAL INDUSTRY WILL FIND A WAY FORWARD, WITH OR WITHOUT US

Embracing AI across all levels, coupled with a focus on scalability, is crucial to addressing the challenges posed by dwindling technician numbers.

Efficiency, education, service and reliability are paramount to survival. As is the need for legislation, traceability and software integration.

Patient expectations are on the rise, while dentists' time is increasingly limited. How do we navigate these challenges?

I don't think AI will eliminate jobs, but it will certainly alter them. The knowledge and expertise of a dental technician are invaluable, presenting a tremendous opportunity – if we're willing to adapt.

I'm optimistic about the future of dental technology, but we mustn't become complacent. [L](#)

M6 Teleskoper milling unit

Zirkonzahn

With the new M6 Teleskoper Blank Changer milling unit, Zirkonzahn automates processes, accelerates procedures and increases the productivity of the dental workflow.

The five plus one axis simultaneous milling unit is equipped with a magazine for 16 or 80 blanks (upgradeable up to 150-200) as well as a blank changer that allows material blanks to be transferred autonomously from the magazine to the orbit.

Once the new structure is completed, the blanks are reinserted into the magazine. This means that restorations made of different dental materials, colours and heights can now be designed fully automatically without any manual intermediate steps.

The wet and dry processing function permits the milling of all common soft and

hard dental materials. The built-in Teleskoper Orbit M6 allows the processing of material blanks with a diameter of 95mm, 98mm, 106mm and 125mm. Thanks to special holders, glass-ceramic blanks, Raw-Abutment blanks and zirconia blanks (size one) can also be milled.

In addition, the innovative Teleskoper functions (adjustment of the friction, double milling, stop and go) can be used with the M6 milling unit. Zirkonzahn equips the M6 milling unit with the new Performance Spindle M6 by default. Thanks to a specially developed permanent-magnet synchronous motor (PMSM), which is optimally adapted to the milling unit, this spindle can reach a maximum torque of 200ncm at speeds of 6.000 to 50.000rpm with a peak power of 2.5kW. In addition, the milling unit is equipped with a contamination-protected tool chamber

that is separate from the milling chamber and features an automatic 60-compartment tool changer function. Up to two magazines with 30 slots each, for up to 60 milling tools, can be stored in a safe and orderly manner. The tools are automatically checked for type or damage before and after each milling process.

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Exocad

Dental technicians, dentists and industry partners from around the world gathered in Mallorca from 9-10 May to take part in Exocad's Insights 2024, with the motto: 'Network. Innovate. Lead.'

Informative sessions were run by top industry speakers and Exocad software experts. Visitors were particularly interested in future products and services that Exocad presented at the event. The company previewed its next release of its implant planning software Exoplan 3.2 Elefsina and announced the inclusion of a new streamlined workflow for stackable guides.

'This event offered attendees the chance to see which technology and treatment approaches are available to achieve more predictable results, faster workflows, and ultimately higher patient satisfaction,' said Novica Savic, CCO at Exocad.

Following a rigorous educational agenda, attendees had the opportunity to unwind at the end of day one at a celebration with a 'pearly white' theme. A charity drive saw limited-edition Insights t-shirts sold, with funds going to dental non-profit organisations. exocad.com

Exploring implant dentistry

ADI

Education is at the heart of the Association of Dental Implantology's (ADI) aims. The association is committed to supporting its members' learning, expanding their knowledge of the field at every opportunity.

As such, members have access to a national programme of ADI Study Clubs, which covers a wide range of subjects across implant dentistry. Plus, members



enjoy free access to Dentistry CPD and journals including COIR and EDI Journal. This is in addition to £150 credit for use on the Osteocom dental education platform.

With so many opportunities for education available to ADI members, this is an exciting time to be exploring the evolving field of implant dentistry.

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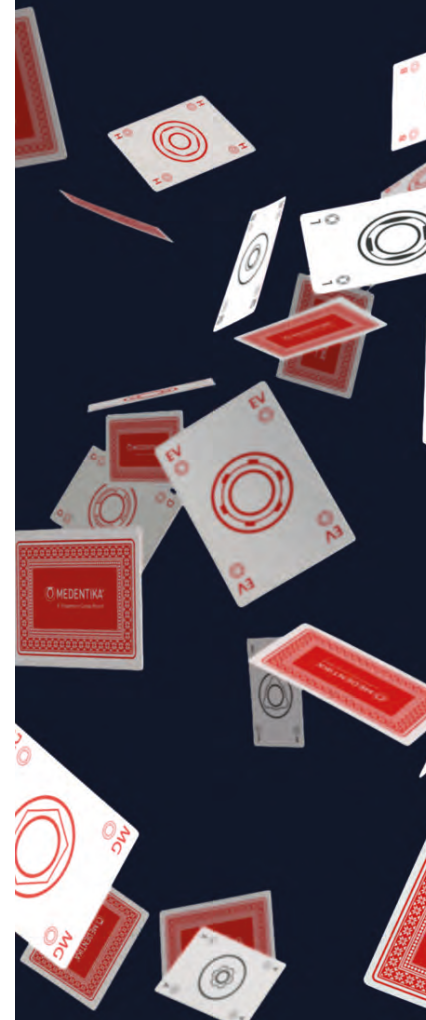
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Enhanced CPD

LAB/MAY/JUNE/PICAKU/PAGE 12

1. According to the author, what forms the foundation of dental technicians' work in creating dental prosthetics and restorations?

- ☐ a. Tooth shape
- ☐ b. Tooth shade
- ☐ c. Tooth function
- ☐ d. Tooth type

2. When did the author start working at Q Lab as a CAD designer?

- ☐ a. 2015
- ☐ b. 2019
- ☐ c. 2020
- ☐ d. 2022

3. For the author, having a broader knowledge of what has helped him to connect with dentists at a greater level?

- ☐ a. Shapes
- ☐ b. Functions
- ☐ c. Dental anatomy
- ☐ d. All of the above

4. To create high-quality dental prosthetics, what do CAD designers bring together?

- ☐ a. Technology
- ☐ b. Design
- ☐ c. Clinical knowledge
- ☐ d. All of the above

LAB/MAY/JUNE/SHAW/PAGE 14

1. What is flocking?

- ☐ a. An impression taking technique
- ☐ b. A social media trend
- ☐ c. Fine-particle fibres of colour
- ☐ d. Thickening of the silicone

2. During the flasking stage, the prosthesis is placed in the oven for two hours at what temperature?

- ☐ a. 100°C
- ☐ b. 110°C
- ☐ c. 120°C
- ☐ d. 125°C

3. To create a natural appearance, the detailing silicone is placed on areas that require it, using a small microbrush with what motion?

- ☐ a. Stabbing
- ☐ b. Light stroking
- ☐ c. Dabbing
- ☐ d. Swirling

4. Patients provided with such prostheses are given an initial review at what point?

- ☐ a. Three months
- ☐ b. Six months
- ☐ c. Nine months
- ☐ d. Annual



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