Prevention 0: The best way to prevent peri-implant disease?

Plaque bacteria prove no match for guided biofilm therapy

Metal-free aesthetics in everyday lab work

Tooth whitening and orthodontics: The icing on the cake

Endodontics white paper calls for treatment to consider patient health

14th CAD/CAM & Digital Dentistry Conference & Exhibition Highlights
Dentsply Sirona at IDS 2019

Innovative and efficient: Dentsply Sirona presented itself as a new, dynamic and agile company and impressed at the IDS 2019 with substantial products.

By Dentsply Sirona

Spread out over two booths with a total of more than 2,000 square meters, Dentsply Sirona made a spectacular impression at the IDS 2019. Bringing to life the motto ‘Inspired by your needs,’ the world’s largest manufacturer of dental products and technologies presented innovations that are set to have a sustained impact on dentistry. The products presented, such as Primescan, play a key role in helping dentists and dental technicians provide their patients with optimal treatment. The Dentsply Sirona team, wearing matching blue and orange sneakers, demonstrated a unified spirit in presenting Dentsply Sirona as a customer-centric company.

“At IDS 2019, we demonstrated that inspired by your needs is much more than just a motto for us,” said Don Casey, CEO of Dentsply Sirona. “Our mission is to translate the needs of dentists into products. We have shown over these five days that we can make a difference for dental professionals with our investment in R&D, education and training. Dentsply Sirona has presented itself as a new, dynamic and agile company and focuses on one thing above all: the customer. More than 14,000 live demonstrations at the IDS booth and 100 product courses in one week underline this impressively. It is this interaction with our customers that drives us forward as a company and complements our $550 million annual investment in R&D.”

Innovations that will have a major impact on dentistry

Of the numerous innovations that Dentsply Sirona presented at its two booths, Primescan, the new intraoral scanning solution, stood out by far. In the more than 100 live treatment procedures on two stages directly at the booth, visitors could see for themselves just how quickly, easily, and precisely impressions can be produced with Primescan. A whole-arch scan of previously unseen accuracy can be produced with Primescan in less than one minute, making this product a versatile partner for all areas of dentistry from restorative treatments and orthodontics to implant dentistry. One example of this is the fully digital production of SureSmile Aligners for straightening teeth. For this, the scan is combined with a 3D X-ray and a photo of the patient. Seamless, validated interfaces simplify the process noticeably, giving dentists the flexibility they desire.

Surefill one, an innovative filling concept for the posterior tooth region, also attracted a high level of interest. The self-adhesive restoration material combines the simplicity of a glass ionomer with the stability of a conventional composite and also has good esthetic properties. This allows a cavity to be treated in just one layer without retentive preparation. This makes the entire treatment process four steps shorter, cutting the treatment time by about seven minutes. Visitors to the booth were able to experience the innovations first hand in live demonstrations and even try them out themselves on the model.

More interaction, more training

Dentsply Sirona used the IDS 2019 to engage in in-depth discussions with customers and partners. The survey ‘1 profession. 1000 jobs.’ provided a great starting point for this – numerous visitors to the booth took part at www.professions2019.de, and the results confirmed beyond doubt that, in addition to treating patients, dentists and dental technicians perform a whole range of other tasks. The company received a wealth of feedback from the countless discussions held at the booth. As a token of appreciation, visitors were presented with a Dentsply Sirona rubber duck ‘Reto Rebecca’, ‘Preventive Poster’, ‘Lab Lara’ and their brightly colored colleagues soon became the stars of the tradeshow. The cheerful ducks, featuring a dental design, most often became collector’s items and, at the end of the five-day tradeshow, more than 12,000 ducks had found a new home.

The popular photo opportunity at the Treatment Centers booth was once again a real crowd pleaser. Visitors were able to pose for their personal cover of the new TRA magazine containing details of the four new international design trends for practices in 2019/2020. More than 2,500 tradeshow visitors said “cheese” and received their personalized copy of the magazine.

Over 14,000 demonstrations were held to explore the new products and how they function to visitors to the booths. In addition, more than 3,000 dentists and dental technicians took the opportunity to participate in training events. The focus here was on treatment plans for endosseous as well as issues relating to digital imaging and dental technology.

At the Implants booths, visitors were able to find out more about Azento, the latest workflow solution for single tooth replacement that enables practices to provide consistently excellent customized implant treatment. And in the spirit of customerization, over 2,000 visitors received a personalized Azento milkshake with their selfie printed on top.

The very best support for day-to-day work with patients

The feedback from our customers has confirmed that our dedicated team has worked on the ‘right’ product solutions that make a real difference in everyday practice,’ Casey reflected. ‘It was also impressive to see how much the Dentsply Sirona team has grown together – visually expressed by our IDS sneakers.”

Note - due to different approval and registration times, not all technologies and products are immediately available in all countries.
Usability is my goal. And Primescan is my answer.

Florian Sobirey, UX-Designer

Primescan
Engineered for superior performance.

Innovation requires commitment to ambition. Primescan sets new standards in dental technology, making scanning more accurate, faster and easier than ever. It is engineered to enable all kind of treatments, from single tooth to full arch. An increased field of view and the dynamic depth scanning technology ensure a high data density right from the first scan. The excellent results are immediately displayed on the wide format touchscreen of the new Acquisition Center. With Primescan, intraoral scanning is as easy as never before.

Enjoy the scan.
Learn more at: dentsplysirona.com/primescan
The next generation polyether: Superfast. Super detailed.

Taking outstandingly precise impressions in an efficient procedure – this is feasible for everyone using the new 3M™ Impregum™ Penta™ Super Quick Polyether Impression Material launched by 3M in April 2018. The material offers a working time of 45 seconds and an intraoral setting time of only two minutes.

It is thus as fast as or even faster than many quick-setting VPS-based impression materials and particularly suited for impression taking in the context of producing single-unit restorations or small bridges. In addition to the increased speed, it offers all proven polyether benefits that lead to a reliable clinical performance and highly accurate results. These include a great flow behavior and an intrinsic hydrophilicity, i.e. high affinity to water, which ensure that the material flows deeply into the sulcus and captures every detail. In addition, polyethers maintain their flowability consistently throughout the whole working time, meaning that a user does not need to be afraid of any premature setting reaction that may have a negative effect on the quality of the final impression.

The use of the new material developed for the monophase technique – 3M™ Impregum™ Penta™ Super Quick Medium Body Polyether Impression Material – is demonstrated showing two different patient cases.

The first patient had a fractured composite restoration on her lower first molar that needed to be replaced. The second patient had previously received an implant in the region of the upper first premolar. After the healing phase, the final prosthetic work needed to be produced and placed. A closed tray impression technique was used in this case.

Case 1

1. Initial situation of case 1: Fractured old composite restoration on the lower first molar.
2. Deep distal preparation with bleeding from inflamed gingival tissue.
3. Challenging moisture control and bleeding managed by using a soaked retraction cord.
4. Impression taken with the monophase technique. Syringing of 3M™ Impregum™ Penta™ Super Quick Polyether Impression Material (Medium Body) around the preparation with the 3M™ Penta™ Elastomer Syringe.
5. Final monophase precision impression made of 3M™ Impregum™ Penta™ Super Quick Polyether Impression Material (Medium Body).

Case 2

7. Initial situation of case 2: Implant with healing cap six months after implant placement.
8. Syringing of 3M™ Impregum™ Penta™ Super Quick Medium Body Polyether Impression Material around the impression coping with the 3M™ Penta™ Elastomer Syringe.
9. Impression coping securely fixed in the impression that was taken using the monophase technique and a closed tray.
10. Final veneered all-ceramic crown cemented on an implant abutment.

Dr. med. dent. Gunnar Reich

Gunnar Reich, Germany

Be impressed.

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Capture every detail in 2 minutes? Yes, it can.

Ideal for smaller cases with superfast 2-minute setting.

A brand new chemistry unites world-class polyether precision with the speed of a VPS material.

A significantly improved taste and less time in the mouth make a better patient experience.

3M.com/Impregum
By Rik Jacobs, The Netherlands

Last year I published an article on LinkedIn: "3D Printing: Sustainable Additive Innovations Transforming the Dental Industry." In this article, I shared my vision and journey to redefine digital dentistry with innovations in additive technology. It summarizes 10 years of advancements that have culminated in the NextDent 5000—a plug-and-play system with a trusted connection, hardware, firmware, software and biocompatible, certified dental materials.

Beyond biocompatibility, the most important requirement for a dental technology or product is quality assurance in terms of accuracy and fit. In order to improve oral care, predictable quality and the performance of a medical device is necessary. As a result, the dental industry has transitioned from cumbersome analog solutions to digital subtractive technologies. In looking at analog versus digital techniques, it was obvious to me that stable quality became more predictable with the use of the scanning and software solutions that have been introduced over the last few years. Yet with all the benefits these digital subtractive solutions have brought to the industry, they have essentially hit their limits. This is why an additive solution made so much sense to me after more than 20 years in the dental industry.

Additive manufacturing brings complete freedom of design enabling complex geometries that are unattainable with subtractive solutions. The speed at which parts are created can be up to 4X faster for different indications and at lower cost than possible with subtractive. Finally, with subtractive solutions environmental waste can be many times larger than the weight of the part itself, and nearly zero with additive solutions. These reasons reinforced my belief that additive manufacturing was the perfect technology for multi-dental applications: models, surgical guides, try-ins, dentures, long-term temporaries, copings, frames, trays and orthodontics. In any dental lab or clinic, the technicians could be addressing several of these in any given day. Additive manufacturing solutions provide the flexibility to address multiple applications and just-in-time production. This was the motivation for producing the NextDent 5000 solution. I saw the need for a robust quality dental production printer with rapid printing speeds, flexibility to change materials, use-of-use, and biocompatible certified materials.

In the months after Lab Day 2018, we were busy optimizing the NextDent 5000 printer and materials with feedback from our global beta testers to ensure that one shipped, the printer would fulfill our promise and perform in accordance with the intended use. Through this collaboration with our beta testers, the advancements we’ve been able to make in the last 12 months are comparable to what the dental industry achieved in the 20 years that preceded them. I couldn’t have been prouder when we shipped our first NextDent 5000s to our end users, and have been delighted with the reports from labs and clinicians on how it’s transforming workflows and capabilities. Much of the feedback was validation of the benefits and outcomes we anticipated in terms of speed, accuracy and cost. Even more exciting, however was all the positive activity in regards to things we hadn’t even thought of. For example, we saw the birth of the “NextDent Users’ Group” on social media without any intervention on behalf of 3D Systems. This user group is comprised of thousands of bright dental industry professionals who share their experiences and knowledge with one another. We’ve seen this group experimenting with new indications in light of the NextDent 5000’s capabilities resulting in impressive applications such as laser-staged printing or new indications like full arch implant bridges and dentures on implants.

A successful worldwide distribution would not have been possible without our highly knowledgeable and responsive resellers, who are also qualified as certified medical device distributors. We made a conscious decision as part of our strategy to only work with qualified, certified dental and medical device distributors. Additionally, we chose resellers who have proven themselves to be experienced dental CAD/CAM service providers. We believe the certification, experience and expertise that we have secured our certification approval so labs and clinicians can have complete confidence in their work. We integrated 3D Systems’ 3D Print software, which we optimized for ease-of-use and with a trusted connection with dental software suppliers. Then, in the second half of 2018, we received the official Class II certification for our NextDent Micro Filled Hybrid Crown and Bridge material in six different colors. In November, we proudly announced that the NextDent5000 became part of the Ceramill workflow as a result of a close cooperation with Amann Girrbach. For all dental applications, we ensured the NextDent printed output was specifically designed for the intended use and took cost into consideration—minimizing the cost per job based on the printer price and waste savings. All this within our first year.

We took our industry-changing technology and we are rolling into 2019 with an incredible degree of positive momentum and market support. We take our responsibility very seriously to deliver long-term performance and safety, and we continuously review clinical events specific to defined patient populations, as well as within more representative populations of users and practices. Post-market surveillance is an integral and ongoing part of delivering a quality system and a regulatory requirement we uphold with the highest priority.

Close cooperation with our resellers and our early adopters/new NextDent key opinion leaders has proven critical and informative. We also recently founded a users’ group for the NextDent community that represents a global pool of experienced users in the clinical laboratory and educational environments.

By Rik Jacobs, The Netherlands

Rik Jacobs - VP GM for NextDent 3D Systems:

"NextDent Users' Group" on social media, for all dental applications, we ensured the NextDent printed output was specifically designed for the intended use and took cost into consideration—minimizing the cost per job based on the printer price and waste savings. All this within our first year. We took our industry-changing technology and we are rolling into 2019 with an incredible degree of positive momentum and market support.

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DENTAL HYGIENIST SEMINAR TRAINING AT THE EXHIBITION POSTER PRESENTATION HANDS-ON COURSES

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New corporate design for W&H

W&H has a fresh new look: the renowned medical technology company has a new, even more modern corporate design to go with its new strategic orientation.

By W&H

Under the motto, ‘Simple. Clear. Modern.’, W&H has created an image that shows it’s ready to take on the future. New logo, new font, more designs and colours – perfect for all digital channels. The aim of the relaunch was to achieve a gentle, but still clearly noticeable change that would outwardly reflect the rapid development of the W&H Group whilst staying close to the W&H core values.

‘W&H has developed from a supplier of products into a provider of solutions, and is offering more and more digital solutions to support everyday practice. W&H’s product range boasts innumerable innovations, with products that are easy to use, reliable and feature a modern design. This is exactly what should be reflected by the corporate design. The new design strengthens W&H’s profile in relation to its competitors. W&H has also defined individual brand identities for the new business areas W&H Med and W&H Vet,’ says Anita Thallinger, Director of Marketing, on the subject of the new corporate design.

W&H logo remains the central element

The corporate design, which was produced in collaboration with Gerhard Andraschko-Sorgo and his design and advertising agency “Linie 3”, immediately catches the eye. The central element of the W&H logo, the hexagon shape, remains the same. However, the design is now cleaner and more focused. Together with the new corporate font ‘Neue Helvetica World’, W&H’s look has been given a new burst of energy thanks to a range of additional colours that complement the traditional apple green, as well as a modern image and design language. In order to create a clear distinction between the two new business areas W&H Med (human medicine) and W&H Vet (veterinary medicine), the former features a dazzling cyan blue, and the latter an eye-catching turquoise green.

Experience W&H online

For W&H, usability for customers is essential. Which is another factor that influenced the new corporate design. As part of the relaunch, the website has also been revised. It is now fully responsive, looks much more modern and has more space for products and digital content. Large images and a new navigation tool make browsing much easier and encourage customers to explore the world of W&H. ‘Our international websites have featured the new corporate design since the middle of March. By the end of the year, the new corporate design will be visible across all channels and countries’, says Anita Thallinger on the relaunch of the wh.com website.

For more information, please visit: wh.com

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The new Chiropro & Chiropro PLUS
Bien-Air Dental unveils its new range of implant and oral surgery motors

By BiennAir

BIENNE, Switzerland: During the 2018 EAO congress, Bien-Air Dental presented its two new implant and oral surgery motors, the new Chiropro and the Chiropro PLUS.

Designed to simplify the fitting of implants as well as oral surgery procedures, the new Chiropro and Chiropro PLUS have been fully developed around a single philosophy: simplicity.

A single control knob allows you to control the entire system simply turn the knob to navigate via the menus and adjust the settings, and press it to confirm the selected value. Moreover, the control knob – the only point of contact between dentists and the unit during procedures – can be easily removed and sterilized to simplify maintenance. Thanks to their clear and concise interface, the new Chiropro and Chiropro PLUS plainly display all the information required for procedures to go smoothly: type of instrument, speed, torque, irrigation flow and direction of rotation. Pre-set operating protocols and the option to modify settings based on patients dental features, also make the new Chiropro and Chiropro PLUS easier to use.

Owing to the fact that each clinical discipline requires a very specific group of instruments, the new Chiropro and Chiropro PLUS units can be connected to the relevant micromotor and rotary instrument required for each procedure.

Implantology

Powered by the Chiropro (Chiropro PLUS resp.), the new MX-i micromotor (MX-i PLUS resp.) and CA 20:1 handpiece combine to offer you the very best rotary technology for all your implantology procedures. Coupled with the MX-i micromotor (MX-i PLUS resp.), the CA 20:1 handpiece provides an exceptionally stable speed, for precise and smooth procedures. As well as offering an unparalleled service life, the CA 20:1 handpiece is fitted with a brand new internal irrigation system. The irrigation line will not inconvenience dentists when they are using the handpiece.

Oral surgery (including wisdom tooth extraction)

Combination with the PM 1:2 straight handpiece and the MX-i PLUS micromotor, the Chiropro PLUS is the ideal solution for oral surgery procedures, and wisdom tooth extraction in particular. Thanks to the high power of the PM 1:2, the cutting time is reduced by 70% (just 12 seconds to fully section a tooth) and the force required is significantly reduced. The risk of overheating is considerably lowered thanks to the self-cooling system built into the MX-i PLUS.

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3Shape wins two Red Dot design awards

By DTI

COPENHAGEN, Denmark: 3Shape, a global leader in 3-D scanners and CAD/CAM software solutions, has received two prestigious Red Dot awards for high-quality product design. The two design awards were presented to the just-released 3Shape TERRIS 4 intra-oral scanner and the TERRIS MOVIE+.

The 3Shape solutions were selected by the Red Dot global jury from more than 5,000 entries. The distinction marks the fifth and sixth 3Shape solution given a Red Dot product design award over the past three years.

Nikolaj Deichmann, 3Shape co-founder and co-CEO, said: “We are very proud to receive the Red Dot awards and appreciate the jury’s recognition. The awards not only highlight the value of our solutions, they also celebrate our company’s design philosophy. 3Shape creates solutions to enable dental professionals to better care for their patients. But an important part of that is making sure that the form and function of our solutions is equally outstanding. The Red Dot awards acknowledge this.”

3Shape TERRIS 4 is the world’s first intra-oral scanner that allows for timely detection of both surface and interproximal caries with a single scan. Now with the release of the brand-new TERRIS 4, intra-oral scanners will no longer be used only for restorative and orthodontic applications. These are diagnostic applications that do not emit radiation. The wireless TERRIS 4 delivers its caries innovation without compromising ergonomics or an increase in the size and weight of the scanner.

3Shape TERRIS MOVIE+ is one of three hardware set up options for the TERRIS intra-oral scanner. TERRIS MOVIE+ now features a larger 15.6 in touch screen attached to an arm and an elegant, easy-to-move stand with a mounted PC. Dentists can easily move and position the TERRIS MOVIE+, as well as use its touch screen as a canvas to design and discuss treatments with patients. TERRIS MOVIE+ helps to drive patient involvement and case acceptance in conjunction with 3Shape patient education apps like TERRIS Treatment Simulator and TERRIS Smile Design.

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INDUSTRY

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By Bien-Air

BIENNE, Switzerland: During the 2018 EAO congress, Bien-Air Dental presented its two new implant and oral surgery motors, the new Chiropro and the Chiropro PLUS.

Described to simplify the fitting of implants as well as oral surgery procedures, the new Chiropro and Chiropro PLUS have been fully developed around a single philosophy: Simplicity.

The new Chiropro is mainly dedicated to implantology procedures, the Chiropro PLUS enables you to perform both implantology procedures and oral surgery procedures.

Owing to the fact that each clinical discipline requires a very specific group of instruments, the new Chiropro and Chiropro PLUS units can be connected to the relevant micromotor and rotary instrument required for each procedure.

Implantology

Powered by the Chiropro (Chiropro PLUS resp.), the new MX-i micromotor (MX-i PLUS resp.) and CA 20:1 handpiece combine to offer you the very best rotary technology for all your implantology procedures. Coupled with the MX-i micromotor (MX-i PLUS resp.), the CA 20:1 handpiece provides an exceptionally stable speed, for precise and smooth procedures. As well as offering an unparalleled service life, the CA 20:1 handpiece is fitted with a brand new internal irrigation system. The irrigation line will not inconvenience dentists when they are using the handpiece.

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Dynamic Duos Reign Supreme for Beverly Hills Formula

By Beverly Hills Formula

They say that one is lonely and two is company – indeed this is definitely the mantra that oral care brand Beverly Hills Formula have chosen to live by. Once again, the Irish-based brand has cited their Perfect White Range as being one of the top performing at-home teeth whitening ranges on the market today – and it is their Perfect Pairings within this range that have been the driving force behind its success.

Launched in 2012, the Perfect White Range has been growing continuously strong ever since, and the brand has seen huge success across the Middle East. The range is now available in UAE, Jordan, Lebanon, Oman, Qatar, Kuwait, Bahrain, Iran and Saudi Arabia. A combination of clever branding, high impact colours, and a vow true to their intrinsic values (safe, affordable and effective) has ensured that the Perfect White Range continuously remains at the forefront of consumer’s minds.

The Perfect White Family consists of the infamous Perfect White Black, Perfect White Gold, Perfect White, Perfect White Sensitive, Perfect White Black Sensitive and Perfect White Black Mouthwash. Joining them were their most recent products - Perfect White Optic Blue, Perfect White Gold Whitening Kit and the Perfect White Whitening Kit.

Within this range, it is their dynamic duos that have given them the edge against their competitors, and have ensured that Beverly Hills Formula remain the stand-out option for consumers today. The duos work symbiotically and effortlessly complement each other – as all good partnerships should! Two very different colours, two very different and cutting edge ingredients – the brand’s perfect pairings are vital products for anyone looking to get a ‘Hollywood Smile’ in the comfort of their own home.

Perfect White Black and Perfect White Black Mouthwash

Perfect White Black and Perfect White Black Mouthwash go hand in hand to give an all-round, highly effective clean, the effects of which can be felt throughout the day. The brand were first to market with the secret weapon of Activated Charcoal which has been clinically proven to be one of the most effective teeth whitening ingredients available today. Activated Charcoal is known for its love of tannins and is the ideal ingredient to add to a whitening product. Perfect White Black works to whiten teeth, remove surface and deep stains and helps to eliminate the bacteria that causes nasty bad breath.

Complementing this hero product is Perfect White Black Mouthwash which has been scientifically formulated for combat bad breath. The ‘shaka to activate’ formula and Pyrophosphates help to further remove surface and deep stains for a brighter and whiter smile. Scientifically formulated to combat bad breath, this innovative mouthwash is made from cruelty-free ingredients and does not contain parabens – the ideal pairing for those seeking some luxury.

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The new Chiropro & Chiropro PLUS – Bien-Air Dental unveils its new range of implant and oral surgery motors

By BienAir

BIENNS, Switzerland: During the 2018 EAO congress, Bien-Air Dental presented its new two implant and oral surgery motors, the new Chiropro and the Chiropro PLUS.

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Thanks to their clear and concise interface, the new Chiropro and Chiropro PLUS plainly display all the information required for procedures to go smoothly: type of instrument, speed, torque, irrigation flow and direction of rotation. Pre-set operating protocols and the option to modify settings based on patients’ dental features, also make the new Chiropro and Chiropro PLUS easier to use.

Although these two systems are both easy to use, the new Chiropro and Chiropro PLUS have different fields of application. Whereas the new Chiropro is mainly dedicated to implantology procedures, the Chiropro PLUS enables you to perform both implantology procedures and oral surgery procedures.

Owing to the fact that each clinical discipline requires a very specific group of instruments, the new Chiropro and Chiropro PLUS units can be connected to the relevant micro-motor and rotary instrument required for each procedure.

Implantology

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Composite artistry in everyday clinical practice... with BioSmart restoratives

By Dr Melvin Sia, Malaysia

We are often faced with aesthetically challenging cases in our everyday practice. Selection of the right composite material combined with a comprehensive finishing and polishing protocol is often the key to success in achieving predictable aesthetic restorations.

How often would you attend a hands-on workshop and get to practice what you learnt the very next day in your dental clinic? I recently attended a workshop by Dr. Ronnie Yap on Predictable Class IV Restorations with the ‘Naturomimetic “ONE” Layers Protocol’ based on the MiCD concept introduced by Dr. Sushil Koirala during a major dental conference in Malaysia. The next day a dentist friend of mine visited the clinic with a fractured anterior tooth where I replicated the layering technique learnt at the workshop.

The patient case shared below is a common clinical situation routinely seen in dental practice where the Shofu range of biosmart composites with its patented S-F RG filler technology was used to showcase composite artistry (Fig.1).

Patient Case
A 33 year old female patient visited my clinic with a fractured restoration on the upper left central incisor tooth after accidentally biting too hard on a metal fork. The patient requested for emergency dental treatment as she was in the organizing committee of the dental conference and had to work the next day.

Intra oral examination revealed, complete fracture of the old composite restoration and the tooth responded positively to vitality test. Patient was advised that the most suitable treatment plan would be to restore the tooth with BioSmart tooth coloured composite using the layering technique to achieve the desired aesthetics (Fig. 2).

Materials used
After careful examination and shade selection the following materials were identified to complete the restoration:
- Composite materials:
  - Palatal Shell - Beautifil II Enamel shade T
  - First Dentin layer - Beautifil II LS opaque shade A3O
  - Second Dentin layer - Beautifil II LS shade A3
  - Enamel Layer - Beautifil Injectable shade BW
  - Beautifil II LS shade A3
- Adhesive - FL Bond II
- Finishing & Polishing - One Gloss, Super Snap Xtreme Technique kit

Restorative Approach
To achieve better tooth form of the final restoration it is important to take the time to create in the palatal shell. The first step was to build up the fractured tooth with composite using a finger followed by preparation of the putty index using impression material (Figs. 3, 4).

Labial enamel margins were prepared with a long & star burr using Diamond points. FL Bond II, a 6th generation 2-step adhesive was applied in combination with the selective etched technique (Figs. 5, 6). Then the palatal shell was created using the putty index with Beautifil II Enamel shade T (Fig. 7).

Composite Build-up
Build-up of the dentin layer was done using Beautifil II Opaque shade A3O followed by Beautifil II LS shade A3. As the tooth was opaque with fluorosis, Beautifil Injectable BW was used to mimic some of the white fluorosis patterns in combination with Beautifil II LS shade A3 as the enamel layer. Before the final cure, glycine was applied on the restored tooth surface to minimize the formation of the oxygen inhibition layer (Fig. 7).

Finishing and Polishing Protocol
After final light cure with glycine, the following finishing and polishing protocol was used to achieve the final high gloss restoration surface. Finishing and anatomical contouring was done using Super Fine Diamond points and line angles created with Super Snap violet disk (Fig. 9). Surface texture to mimic the adjacent tooth was achieved with OneGlass polisher.

Conclusion
The above clinical case illustrates the life-like aesthetics that can be achieved using the naturomimetic “ONE Layers protocol” adopting the Minimally Invasive Cosmetic Dentistry (MiCD) concept with BioSmart composite material. Beautifil II range of composites have a simple shade system with a range of translucency shades that helps to achieve predictable aesthetics in addition to fluoride release and prevention of plaque accumulation. These added benefits of the BioSmart composites helps to prevent caries in addition to creating life-like restorations making it an ideal choice for every dentist.
Smart Solutions for Composite Artistry

Photographs courtesy of Dr. Anand Narvekar
Full article on Dental Tribune Middle East & Africa Edition Issue Jan-Feb 2019 | No.1, Vol.9 (www.dental-tribune.me)

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Cooperation between Dentsply Sirona and exocad promotes the digital workflow in the practice and laboratory

By Dentsply Sirona

Dentsply Sirona, the world’s largest manufacturer of dental products and technologies, and exocad, one of the leading dental CAD/CAM software manufacturers for the dental lab, have announced their extensive cooperation in the field of digital dental workflows. International customers of both companies will now benefit from the direct transmission of digital impressions from Dentsply Sirona’s intraoral scanners to exocad labs. Furthermore, both companies will align elementary interfaces between the inLab hardware and exocad software and, among other aspects, implement Dentsply Sirona tooth lines and material-specific parameters in the DentalCAD software from exocad.

Flexible open systems play an important role in digital dentistry. At the same time, ensuring the maximum compatibility of the systems used in practices and labs is becoming increasingly important to design reliable and efficient digital workflows. Considering these objectives, the cooperation between Dentsply Sirona and exocad offers completely new options in the digital production chain.

Validated workflow for digital impressions

Thanks to this cooperation, dental practices with Dentsply Sirona intraoral scanners such as Primescan will now, for the first time, be able to work with exocad laboratories in a validated workflow and transmit digital impressions conveniently and directly for a broad range of indications. Using the new software application, Connect Case Center Inbox from Dentsply Sirona, exocad labs have direct access to the complete intraoral scan and order data in the Connect Case Center Portal.

"With the connection of exocad labs to Dentsply Sirona’s intraoral scanners, the digital production options based on intraoral impression data for practices and dental labs around the world are expanded," explained Dr. Alexander Völcker, Group Vice President CAD/CAM & Orthodontics, Dentsply Sirona. "Furthermore, the high level of scanning accuracy offered by our new intraoral scanner Primescan is set to inspire digital dentistry among numerous dental practices and labs."

An application-oriented approach to developing digital dental technology

This cooperation also comprises the alignment of data interfaces between the exocad DentalCAD software and the inLab CAD/CAM components from Dentsply Sirona such as the highly accurate scanner inEos X5 and the laboratory production units inLab MC X5 and inLab MC XL. Above and beyond this, the material-related design parameters of selected Dentsply Sirona CAD/CAM materials and dental databases will be integrated into the exocad software. "The integration of material parameters and tooth lines in the DentalCAD software offers exocad users additional advantages as well as enhanced process safety in terms of indication-tailored designs and reliable workflows in the lab," explained Tillmann Steinbrecher, the CEO of exocad.

The cooperation between these two dental companies not only promotes digital dental technology and dentistry as a whole, but also the position of the individual user groups – for even safer and more efficient dentistry.

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Matching of CBCT and virtual wax-up for single-tooth replacement of a central incisor

By Dr Jakob Zwaan, The Netherlands and Mr Vito Minutolo, Italy

Though many smile design programmes offer us solutions for rendering of multiple-tooth replacements, yet in daily practice we encounter major challenges when just a single tooth needs to be replaced. In order to estimate the risk of an unacceptable aesthetic final result of our treatment and to determine the most effective and predictable treatment plan, it is necessary, also in these cases, to perform an analysis of the desired tooth shape, the soft tissue architecture and the bone volume necessary to stabilize an implant in the optimal position and support the soft tissue. This analysis can be done using several means. In the traditional workflows, we asked our dental technician, after taking impressions of the dental arches and registering the occlusion, to perform a wax-up to obtain information about tissue volume available and needed. It was difficult to get from this hard model information about the lip line and gingival exposure, and before the era of 3D scanning, it was impossible to interface the teeth with the deeper anatomy. With the arrival of digital photography, video, intraoral scanner and CBCT scanners, our possibilities have grown enormously, thus raising the accuracy and predictability of our treatments.

In the following case report, the author will try to describe how he and his team approach cases in which a single tooth needs to be replaced by an implant-supported crown. Most of the procedures can be applied to more extensive cases, since the basic rules of implant dentistry are universal. After an anamnestic interview in which patient expectations play a fundamental role, we proceed with the intraoral examination. Hygiene and periodontal health are checked and if required, a session for calculus debridement, motivation and instruction is scheduled.

Normally, the first radiographic examination performed is an intraoral radiograph for a single tooth (Fig. 1) or a dental panoramic tomogram if the need for a more extensive treatment is suspected. In the same session, both dental arches are scanned with an intraoral scanner and the bite is registered. A simple photographic sequence is followed:

1. Full frontal view intraoral photograph (Fig. 2).
2. Detailed anatomical photograph of the single arch, possibly with a black mirror to contrast the teeth (Fig. 3).
3. Photograph of the full face at rest (Fig. 4).
4. Full face photograph with maximum gingival exposure (Fig. 5).
5. Full face photograph of a spontaneous smile (Fig. 6).
6. Photograph of the full face at rest.

This sequence allows one to view immediately the presence of orthognathic and periodontal issues (Figs. 1 & 2), to evaluate the biotype (Figs. 2 & 3) and to estimate aesthetic challenges, like tooth colour, tooth texture, soft tissue/lip exposure and position of the incisal edge/lip (Figs. 2 & 4–6). The 3D intraoral scan is extremely helpful for determining orthodontic alignment of the teeth and in our protocol replaces an occlusal and/or 12 o’clock photographs in most cases.

“There can be different ways of treating a disease, but there can be only one correct diagnosis.” Dr Morton Amsterdam, 1974. When anamnesis, intraoral examination and preliminary radiographs are sufficient to conclude that the tooth in question cannot be preserved, it needs to be decided what the optimal timing for extraction and a CBCT scan is and how to provide for a temporary tooth replacement. Also, the timing of implant placement is essential and the operator must choose between immediate, early or delayed placement in the fresh extraction socket. Will there be a (potential) need for bone augmentation and/or a soft tissue graft? To short, our policy is the following: in case of acute inflammation that cannot be effectively treated in a way that an infection of the future implant site will be prevented, we will proceed with extraction. A temporary fixed edge and bond or removable prosthesis can be used to guarantee acceptable aesthetic comfort to the patient. In these cases, a CBCT scan will be taken after extraction so that the most detailed image of the socket anatomy can be obtained. Since a provisional solution has been provided for, there is no need for very early implant placement. Timing is now based on the expected period needed for the infection to be eliminated and the risk of loss of volume by the collapse of tissue. Normally, the implant is placed four to six weeks after the extraction. Another reason for delayed implant placement can be the need for healed soft tissue in order to facilitate proper wound closure to protect, for example, bone substitutes and membranes when bone augmentation is necessary. Additionally, if the patient is suffering owing to the tooth that is to be extracted, it can be a reason to proceed quickly with the extraction, thus gaining time for adequate treatment planning and preparing for surgery and eventual immediate temporary crowns. If the anatomy and biological conditions are favourable, one can decide to proceed with implant surgery at an early stage after extraction, such as one week. Only in those cases in which there is no acute inflammation or infection, and sufficient bone and soft tissue quantity and quality are present is it recommended to place the implant in the fresh extraction socket. Obviously, in such a case the CBCT scan would be performed before proceeding. Minor bone augmentation and/or connective tissue grafting can be performed contemporaneously. The decision to place an immediate provisional crown on the implant is strongly related to the expected primary stability of the implant, as well as the opportunity to manage the position of biomaterials in such a way that undisturbed and uncontaminated healing is guaranteed. After healing, good aesthetics and sufficient protection of the underying implant and implant-prosthesis connection are requisite if we wish to treat our patients in the best possible way and earn their long-term trust.

Risk evaluation

First aesthetic risk evaluation

A very simple tool to start with can be a render of a 2D photograph. We use the macro intraoral shot with the black background behind the teeth (Fig. 3). With Adobe Photoshop, GIMP, Microsoft PowerPoint or Keynote, for example, it is possible, with little time invested and no expense, to cut out the shape of the contralateral tooth that will not be extracted, copy it, flip it horizontally and paste it in the position of the tooth that needs replacement. It will be clear immediately whether the tooth replacement is well or needs revision.

Another trick is to use this image with the flipped contralateral tooth and align it with the original photograph and then draw a horizontal line across both images that coincides with the same gingival reference points. This will demonstrate whether there is a vertical component that indicates a lack or abundance of soft tissue (Fig. 8). This can be easily quantified in a metric system if an intraoral reference is measured with a caliper. We can now inform the patient whether...
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an additional procedure like guided bone regeneration (GBR) or a connective tissue graft will be needed, which can be helpful for informed consent and financial planning.

Second risk evaluation

The intraoral scan is imported into CAD software and transformed into a virtual master model without the tooth to be extracted and a separate STL shape of the ideal CAD-designed tooth (Fig. 9). Now there is the opportunity for 3D evaluation of the dimensional relation between the new tooth and the soft tissue before extraction. In the current case, the tooth involved had not been extracted and a CBCT scan was performed (X-Mind trium, ACTEON; 110 x 80 mm field of view; 0.15 mm voxel size) for further investigation and treatment planning. In the AIS 3D App software that comes with the CBCT X-Mind trium device, STL files can be matched and aligned with the 3D bone volume, thus giving the opportunity to plan the future implant position taking into account the shape and position of the future crown (Figs. 10a & b). In accordance with the prosthetic procedure preferred, cemented versus screw-retained, CAD/CAM-fabricated versus manual layering and the type of material to be used, all the information for the final treatment plan is available, on which decisions can be made regarding GBR, connective tissue graft and timing of implant loading.

Case report

The female patient, aged 47 and a non-smoker, was in good general health. She performed regular oral hygiene and had good periodontal health. The patient experienced increasing mobility of the maxillary left central incisor and complained about compromised aesthetics due to the extrusion and progressive migration of the tooth in a buccal direction. The incisor had been treated with a crown at a preadolescent age after a violent trauma. The intraoral radiograph showed incomplete root development and evidence of a root canal therapy suggesting a strip perforation though no signs of periapical lesions were present. The shape of the crown was not symmetrical in relation to the triangular shape of the maxillary right central incisor, but had a wider and rectangular profile. Minor general gingival recession had led to the presence of a tiny inter-dental space. The marginal gingiva was reddened, and the central papilla was not symmetrical.

Probing depths were within 2 mm for both the right and left central incisors and the radiographic mesial and distal bone peaks were of a regular height.

The photographic aesthetic evaluation showed that it would be very difficult to obtain symmetry in tooth shape and have good-looking and healthy soft tissue support at the same time. The patient's maximum smile exposed the gingival contours. In such cases, it may be wise to consider also the possibility of altering the anatomy of the contralateral tooth with, for example, a ceramic veneer and discuss outcomes with the patient before finalising the treatment plan. This can be evaluated by performing the cut/copy/flip/paste sequence in reverse (Fig. 7). Together with the patient, it was decided to start performing the best possible replacement of the maxillary left central incisor and evaluate...
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Module 2  | 19-22 June 2019 (4 days)  | Aetiology and Diagnosis of Endodontic Disease
Programme outline: Microbiology of endodontic disease and its relationship with the host immune response.
Hands-on: Rotary NiTi and advanced thermoplastic obturation techniques.

Module 3  | 12-15 September 2019 (4 days)  | Traumatic Injury, Pain and its Management
Programme outline: Emergency endodontics and diagnosis in depth. Odontogenic and non-odontogenic pain. Diagnosis and management.
Hands-on: Rotary NiTi and thermoplastic obturation techniques.

Diploma  | 3 Modules  | 12 Days
Module 4  | December 2019 (4 days)  | Dental Resorption and Pattern of Tooth Fracture & Implant Prosthodontics
Programme outline: Understanding advanced endodontic problems. Handling endodontic failure alternatives related to implants.
Hands-on: Reciprocating Niti and Carrier based thermoplastic obturation techniques & Implant prosthetic and surgery on phantom heads

Module 5  | March 2020 (4 days)  | Restoration of Endodontically Treated Teeth
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at an advanced stage with a temporary crown on the implant and mature, conditioned tissue whether to add a veneer to the maxillary right central incisor.

**Analysing the CBCT scan**

It became evident that the short-rooted tooth could be extracted without compromising the buccal bone, and that there was sufficient bone volume and quality to obtain good primary stability of the implant. Thanks to the AIS 3D App software, this information can be visualised using the bone density tool and linear measures tool (Fig. 10c) and represented in a graphic or according to a colour scale. The presence of the nasal septum duct prohibited ideal palatal positioning of the implant, and if the implant were to be placed flush with the palatal alveolar bone, this would have resulted in a 1.5-2.0 mm high exposure of the implant collar to the buccal aspect (Fig. 18h). This information, combined with the aesthetic analysis, led to the decision to place the implant in that position and to augment the buccal bone volume with a contemporaneous GBR procedure, thus also providing for major soft tissue support. As often described in the literature, it is to be expected that in some measure the implant will deviate buccally from the original planning because of the major mechanical resistance of the palatal plate. The author’s team prefers whenever possible screw-retained solutions. Several producers of screw-retained crowns had already been fabricated by the technician, who had prepared a CAD/CAM-milled acrylic tooth placed on to a Neoss Esthetic Healing Abutment (Fig. 31). This material was covered with a resorbable membrane (Fig. 19). The mobilised flap was then repositioned by rotating it coronally and fixed with single sutures (Fig. 20). The removable partial denture was adapted and delivered (Fig. 21). An immediate postoperative CBCT scan of 60 x 60 mm was performed, and it confirmed a perfectly centred implant position (Figs. 22 & 23).

**Intraoral scan**

Eight days after surgery, the patient reported that healing was uneventful and the prosthodontist removed the stitches. It has become the author’s standard protocol to perform an intraoral scan for implant position in this same session (Figs. 24 & 25). The specific and unique PEAK healing abutment used has an internal circular channel and on one side, normally positioned on the buccal aspect, a vertical rectangular slot (Fig. 26). After removing the PTFE tape used to plug this area during surgery, a ScanPeg can be positioned inside the healing abutment. This allows for a unique scanning procedure without removing the healing abutment, thus avoiding disturbing healing tissue or dislocating recently placed biomaterials. The producer provides libraries for STL files of the five different anatomical shapes—wide incisor, narrow incisor, canine, premolar and molar—which determine the basic profile of the gingival tunnel during healing.

**Temporary crown**

The surgeon indicated that the healing abutment may be removed after four weeks. By then, the temporary screw-retained crown had already been fabricated by the technician, who had prepared a CAD/CAM-milled acrylic tooth placed on to a Neoss Neolink abutment (Figs. 27-30). As a result of the decision to place the implant entirely in native bone, the angulation was such as to locate the screw access hole of the provisional on the buccal aspect. This can be easily camouflaged by a simple composite filling after plugging the channel with PTFE tape. The gingival profile copies in this first stage of loading the central incisor anatomy of the Neoss Esthetic Healing Abutment (Fig. 31).

**Tissue conditioning**

As evidenced by the aesthetic analysis before treatment, it was clear that symmetry with the contralateral incisor would be impossible. The implant was placed slightly distal because the distal papilla normally has a narrower mesiodistal basis than the central papilla. The tissue volume augmentation helped to obtain the necessary quantity of gingiva to shape nice papillae, leaving a minimal gap. The soft tissue architecture was conditioned (Fig. 32) by adding composite to the temporary crown and grinding material where necessary until the prosthodontist and the patient felt an optimal result had been achieved.

**Transfer of the profile**

A new intraoral scan sequence was performed. First was the scan of the
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full arch with the temporary crown in place. The provisional was then removed from the mouth and screwed on to an implant replica fixed to a stable support with wax. The second scan, obtained with the empirical CAD/CAM setup, was used to guide the milling of the definitive crown.

Definitive crown

The metal framework is designed to have a minimum thickness, or 20–30% of the root width, to ensure the gingival margin is maintained. The tissue should be preserved and should offer long-term stability. This is in contrast to the properties of classic cements, which are capable of providing a strong adhesive bond. Both problems led to the development of materials that have a high adhesive strength, are water soluble and do not establish a connection in the long term.

Definitive cements show reasonable survival rates, withCAM
cements like smart, scannable healing materials (RMGICs) being available since the 1990s. Nonetheless, these cements cause unpredictable, beautiful solutions. In the case of surgery and employ innovative milling strategies to deliver a predictable, beautiful solution. In the current challenging buccal-rootal dimensional, the implant was perfectly planned and guided into the centre of the native bone. Guided bone regeneration is limited to the maximum and minor buccal exposure of the implant was predicted. Reviewing the case described above, the fact that bone volume could be matched with the dental restorative situation and the CAD virtual wax-up made the whole procedure, from extraction to final restoration, high-risk. Adequate bone volume, bone quality, extent of GBR indicated, and the type of prosthodontic solution were all known before starting treatment thanks to the implant plan with the AIS 3D App software.

Both the clinician and patient were well informed and prepared, avoiding surprises, improvisations and unnecessary stress. New developments like smart, scannable healing abutments will help to continue creating treatment outcomes and comfort improvements.

New materials for a classic indication

Cementation of all-ceramic restorations using Variolink Esthetic

By Drs Eduardo Mahn & Juan Pablo Sánchez, Chile

Zinc phosphate cements are seen as classic luting materials for the cementation of metal-ceramic crowns. Along with all-ceramic materials, glass ionomer cements (GICs) and resin-modified glass ionomer cements (RMGICs) were introduced. Generally, luting cements are expected to meet certain requirements: they should provide an optimal bond to the tooth structure and restorative material, must not be soluble in water, should be suitable for application in thin coatings and should offer long-term stability. This is in contrast to the properties of classic cements, which are water soluble and do not establish an adhesive bond to the enamel or dentine (zinc phosphate cements) or establish only a minimally adhesive bond and only to the dentine (GICs and RMGICs). Nonetheless, these cements show reasonable survival rates if used for the appropriate indication even if they have certain limitations.

Problem 1: Opacity

The opacity of the luting material is a critical issue for all-ceramic crowns, as well as ceramic inlays and onlays. Almost any colour can theoretically be reproduced with ceramics by exploiting their natural translucent properties. Using an opaque luting material appears to be counterproductive in achieving this. Further critical issues are the limitations involved in the anterior region and the location of the cement line in the visible area for inlays and onlays. For instance, if a tooth is restored with a veneer, the basic shade of the tooth is maintained, only the enamel is replaced, usually by using a translucent ceramic that covers the natural dentine. In such a case, it is essential to use a translucent luting material to ensure a natural result.

Problem 2: Adhesion

The comparatively low bond strength of conventional cements is also problematic. Classic preparations around the tooth create a high degree of friction and retention. However, the retention is significantly reduced with partial crowns, veneers or onlays. It is therefore advisable to use a luting material that is capable of providing a strong adhesive bond. Both problems led to the widespread use of luting composite materials. Perhaps their only disadvantage is the removal of excess material. These luting materials are hard and solid and not water soluble; they have a high adhesive strength, making removal of excess difficult. Early luting composites were equipped with a self-cure mechanism. Users had to wait a few minutes until the composite was almost fully set before they could remove the excess material. This period was risky because of the moisture in the mouth. Blood or saliva could come into contact with the non-polymerised composite and cause damage.
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Dual-curing luting composites

These issues led to the rise of dual-curing composites for the cementation of all-ceramic crowns. Dual-curing luting composites are usually delivered in double-push syringes with a mixing tip. During extrusion, the base and catalyst are automatically mixed. The material can be applied directly. The main advantage is that the curing process can be accelerated with light and excess material can easily be removed. At the same time, the self-cure mechanism ensures a reliable cure, even with relatively thick or opaque ceramic layers. Nonetheless, there are some situations in which excess material cannot be removed all that easily because the setting reaction takes place too quickly or the material does not cure down to the depth of the composite layer. After one second of light curing, the surface is set and excess can be broken off, but the material is still paste-like at the interface to the crown or tooth. Excess can be polymerised en bloc and pulled off as a ring in one go with no uncured material left in contact with the tooth or crown. In addition, the luting composite does not contain amine; which is another advantage, since amine may be implicated in discolouration of the cement line over time.

One material, five shades

Vita的女孩 Esthetic (Ivoclar Vivadent) is based on the value shade concept. The shades are classified according to the effect to be achieved with the cement. Five shades are available: Light, Light, Neutral, Warm and Warm+. In this way, the shade spectrum ranges from an opaque white tone (Light+) to an opaque yellow-brown shade (Warm+). In between lies shades such as a coconut water white and a neutral tone (very translucent) and a warm tone (comparable to A3). In addition, the luting composite is available in an LC (light curing) and a DC (dual-curing) version. The LC version is designed for relatively thin restorations, such as inlays, onlays and veneers. The DC version is suitable for more extensive and opaque restorations. The luting composite is used in conjunction with the light-curing single-component Tetric N-Bond Universal (Ivoclar Vivadent).

Clinical case

A 45-year-old male patient presented to the practice with a restoration on tooth #46. The tooth had been endodontically treated and temporised with a filling (Fig. 6). The temporary was removed, the tooth built up with Tetric N-Ceram Bulk Fill (Ivoclar Vivadent) and then prepared for the crown restoration (Fig. 7). An impression was taken with a one-step, two-phase impression technique using a putty and light-body silicone. After scanning the model, the crown was designed in the software suite (inLab, Dentsply Sirona) and milled from a glass-ceramic primer Monobond Etch & Prime (Ivoclar Vivadent). This primer combines a ceramic etching and silanating component in a single material and therefore eliminates the need for the ceramic to undergo hydrofluoric acid etching (Fig. 5). After the etching and silanating step, the crown was rinsed with water and dried. The isolated enamel was then etched (Fig. 6). The adhesive (Tetric N-Bond Universal) was applied and dispersed with a strong stream of air. The etching and silanating version of the Vita-ceramic Esthetic luting composite was used for seating owing to the thickness of the crown and the low translucency of the ceramic material (Fig. 7). The luting composite was applied into the crown. The restoration was then seated (Fig. 8) and light-cured from each side for two seconds. Excess composite was easy to remove owing to the brocken photoinitiator (Ivoclar Vivadent), which provides a fast and thorough cure with a minimum amount of energy (Fig. 9). For final polymerisation, the restoration was light-cured from each quarter for 20 seconds (Fig. 10). Figures 11 and 12a & b show the oral situation after placement of the crown. Although the cement line was located above the gingival margin, it was not visible owing to the favourable tone and opacity of the luting composite. Figures 13a & b show radiographic control images of the restoration: the radiopaque build-up material and cement can easily be distinguished from the tooth structure. This aspect is particularly important in situations where excess cement cannot be seen with the naked eye.

Conclusion

The cementation methods used in conjunction with all-ceramic materials have changed for single-crown restorations. Vita-ceramic Esthetic is a protagonist of the latest generation of luting composites. Excellent bond strength values, coupled with user-friendly handling characteristics and highly aesthetic properties, make this material an asset in day-to-day dental restorative care.

For more information contact:
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Almost 432,000 dental professionals have benefitted from clinical education and training

By Dentsply Sirona

Dentsply Sirona Clinical Affairs organizes one of the largest clinical and most comprehensive education programmes in the dental industry to empower dental professionals to provide better, safer and faster dental care. In 2018 alone, Dentsply Sirona offered 11,835 courses all over the world, in which nearly 432,000 dental professionals participated.

The global Clinical Affairs team develops the next generation of educational content that supports the implementation of innovative solutions for dental professionals. This clinical education program’s overall objective is to empower dentists, technicians, and dental team members to improve dental care and oral health. Clinical Affairs cooperates with opinion leaders, academic and research communities, and practitioners in their respective local markets.

In 2018, Clinical Affairs offered 11,835 courses, which provided training and education to 431,854 dental professionals in 99 countries.

Clinical Affairs 2018 at a glance

- Dentsply Sirona Clinical Affairs 2018
- In 2018, more than 432,000 dental professionals attended Dentsply Sirona courses
- In 2018, the number of on-demand webinar participants has increased almost fivefold in 2018
- The global Clinical Affairs team works with opinion leaders, academic and research communities, and practitioners in their respective local markets

Clinical Excellence offers scientific and evidence-based education on key clinical topics and common clinical challenges facing dental professionals. The program covers topics such as prevention, restorativeness, endodontics, implantology, and prosthodontics.

Technical excellence introduces Dentsply Sirona’s new technologies, innovative materials and workflow solutions, for example. These courses support dentists, technicians and team members in adopting and implementing technological innovation and workflows into their own practices.

Practice excellence as the Academy’s third component focuses on administrative and management issues including front office and back office support to improve practice efficiency and patient outcomes. “A dental practice is only as good as its team – practice, patient flow, and back office management,” says Dr. Terri Dolan, Chief Clinical Officer of Dentsply Sirona. “We see the use of educational technologies as a great way to support our customers, introduce new clinical concepts, explain procedures and solutions, and then encourage participants to attend more extensive courses and hands-on learning based on their needs and interests. Providing these educational opportunities, paired with our leading materials and technologies, are key to empowering dental professionals and improving dental care and oral health. Clinical Excellence, Technical Excellence, and Practice Excellence.

Almost 432,000 dental professionals have benefitted from clinical education and training.

For more information about clinical education from Dentsply Sirona please contact your local representative or visit dentsplysirona.com/MENA.

Dentsply Sirona

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Clinical Excellence

Clinical Excellence offers scientific and evidence-based education on key clinical topics and common clinical challenges facing dental professionals.

Technical Excellence

Technical Excellence introduces Dentsply Sirona’s new technologies, innovative materials and workflow solutions.

Practice Excellence

Practice Excellence as the Academy’s third component focuses on administrative and management issues including front office and back office support to improve practice efficiency and patient outcomes.

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**Hands on:** Pigmentation on soft tissue, gingivectomy and gingivoplasty, frenectomy, fibroma removal, crown lengthening, depigmentation, endodontic procedure - canal irradiation performed on sheep heads | Patient treatments (demonstrations)

Module 2 | 11-14 March 2020 (4 days) | Module Erbium Lasers
Laser Safety Officer course | e-learning | Laser technique (Diode lasers) | High power Diode lasers (clinics) |
Erbium Lasers (clinics) | Laser technique (Erbium lasers) | Er:YAG and Er,Cr:YSGG | Scientific background and clinical indications | Skill training every day of every clinical indication | Patient treatments (demonstrations)
**Hands on:** Preparation in enamel and dentine, generation of a retentive surface, canal decontamination, apicectomy, soft-tissue cut with short pulses, soft-tissue cut with long pulses, open curettage, crown lengthening and bone preparation performed on sheep heads. | Patient treatments (demonstrations)

Module 3 | 13-16 December 2020 (4 days) | Combined Wavelengths Therapy Concepts & Mastership Exams
Laser therapy concepts with the use of 2 different wavelengths | Written multiple-choice exam | Oral Exam (presentation of 5 patient treatments cases with diode or Erbium lasers) | Graduation Ceremony, after successful completion of an examination at RWTH Aachen University | 600 hours total workload | Over the complete course duration: case documentation & discussions

**AACHEN, GERMANY**

The programme targets dentists who would like to specialise in certain wavelengths. Over the course of one year, participants are taught fundamental physical and technical knowledge, and how to recognize primary, secondary, and tertiary indications on 12 attendance days split into 3 modules held over 3 educational blocks. This programme concludes with an official certificate of RWTH Aachen University, and is offered in collaboration with the RWTH Aachen International Academy, the post graduate education wing of the University.

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Researchers develop microrobots to break up plaque

By DTI

PHILADELPHIA, U.S.: The fight against plaque has been a long-running battle. In a discovery that might give dentists the upper edge, researchers from the University of Pennsylvania have developed a swarm of microrobots, directed by magnets, that can break apart and remove dental biofilm from a tooth. The innovation arose from a cross-disciplinary partnership among dentists, biologists and engineers.

Lead researcher Prof. Hyeon Koo, from the University of Pennsylvania School of Dental Medicine (Penn Dental Medicine), said the development was truly a synergistic and multidisciplinary interaction. “We’re leveraging the expertise of microbiologists and clinician-scientists as well as engineers to design the best microbial eradication system possible. This is important to other biomedical fields facing drug-resistant biofilms as we approach a post-antibiotic era,” he said.

This collaboration came about after Koo and his colleagues made headway in breaking down the biofilm matrix by using iron oxide-containing nanoparticles that work catalytically, activating hydrogen peroxide to release free radicals that can kill bacteria and destroy biofilms in a targeted fashion. Serendipitously, the Penn Dental Medicine team found that groups at Penn Engineering, led by Dr. Edward Steager, Prof. Vijay Kumar and Prof. Kathleen Stebe, were working with a robotic platform that used very similar iron oxide nanoparticles as building blocks for microrobots. The engineers control the movement of these robots using a magnetic field, allowing a tether-free way to steer them.

Together, the cross-school team designed, optimized and tested two types of robotic systems, which the group called catalytic antimicrobial robots, or CARs. One system works on surfaces and the other operates inside confined spaces.

“Existing treatments for biofilms are ineffective because they are incapable of simultaneously degrading the protective matrix, killing the embedded bacteria and physically removing the biodegraded products,” noted Koo. “These robots can do all three at once very effectively, leaving no trace of biofilm whatsoever.”

“Treating biofilms that occur on teeth requires a great deal of manual labor, both on the part of the consumer and the professional. We hope to improve treatment options as well as reduce the difficulty of care,” said Steager.

The team now hopes to move its invention into clinical application and has received support from the Penn Center for Health, Devices and Technology, an initiative supported by the Perelman School of Medicine, Penn Engineering and the Office of the Vice Provost for Research at the University of Pennsylvania.

A research paper, titled “Catalytic antimicrobial robots for biofilm eradication,” was published in the April 2019 issue of Science Robotics.
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Scientists find effective treatment for oral pain caused by radiation therapy

A new study has reported that doxepin mouthwash or diphenhydramine-lidocaine-antacid mouthwash may be effective in reducing radiotherapy-related mucositis pain.

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Scientists have recently discovered that an oral rinse referred to as magic mouthwash significantly reduces the pain caused by oral mucositis and mouth ulcers in patients receiving radiation therapy for head and neck cancer. The mouthwash contains diphenhydramine, lidocaine and antacids.

The study was led by Dr. Robert C. Miller, Professor of Radiation Oncology at Mayo Clinic. The findings emerged from a multi-institutional randomized, double-blind, placebo-controlled Phase III clinical trial.

“Our group published a study in 2012 showing that an oral rinse of doxepin reduced oral mucositis-related pain, compared to placebo,” said Miller. “However, there were no large randomized controlled trials studying the potential benefits of magic mouthwash.”

In the new study, conducted between November 2014 and May 2016, Miller and his colleagues studied 275 patients who underwent definitive head and neck radiotherapy and had an oral mucositis pain score of 4 points or greater. The participants were followed up for a maximum of 28 days. The research team found that pain related to oral mucositis was reduced by 11.6 points after using doxepin mouthwash and by 11.7 points after using diphenhydramine-lidocaine-antacid mouthwash, within 4 hours of administration. There was a reduction of 8.7 points for placebo mouthwash.

Both experimental rinses were also well-tolerated by patients.

“Radiation therapy may cause mouth sores because it is designed to kill rapidly growing cells, such as cancer cells,” said co-author Dr. Terence T. Sio, a radiation oncologist at the clinic. “Unfortunately, healthy cells in your mouth also divide and grow rapidly, and may be damaged during radiation therapy, which can cause discomfort. We’re glad to have identified a proven method to help treat the discomfort of this side effect,” he concluded.

The study, titled “Effect of doxepin mouthwash or diphenhydramine-lidocaine-antacid mouthwash vs placebo on radiotherapy-related oral mucositis pain: The Alliance A221304 randomized clinical trial,” was published online on April 16, 2019, in JAMA.
Scientists work on remedy for painful jaw disease

By DTI

LOS ANGELES, U.S.: University of Southern California (USC) researchers and collaborators from the University of California, Los Angeles (UCLA) have reported a breakthrough in preventing the damage to the jaw that is a side effect suffered by some people undergoing treatment for cancer or osteoporosis. The new research is an important step toward a cure for osteonecrosis of the jaw, which is a rare consequence of drugs commonly used to combat bone loss.

Osteonecrosis of the jaw causes severe and persistent inflammation leading to loss of bone from the jaw and has no effective means of prevention or cure. The risk, though small, deters people from taking drugs needed to fight bone cancer or prevent fractures owing to loss of bone-density.

USC scientist Prof. Charles McKenna said the research raises hope that physicians could adapt the new method to treat the condition in people. “This is a condition that has been excruciatingly painful and difficult to treat for more than a decade. We think our new approach may provide hope for the future.”

For years, physicians have prescribed a class of drugs called bisphosphonates (BPs) for metastatic bone cancer patients and for osteoporosis patients to maintain bone density. BPs include a range of compounds that share a remarkable ability to adhere to bone, but when used in high doses in the cancer clinic, BP drugs sometimes have the debilitating side effect of necrosis in the jaw. The problem often occurs after a tooth is removed, the extraction socket does not heal, and the jaw begins to deteriorate.

Although the condition is very rare at the lower BP doses used to combat osteoporosis, many patients avoid the drugs altogether for fear of the side effects. The risk is low, as the National Osteoporosis Foundation estimates incidence of osteonecrosis of the jaw owing to the BP used to treat osteoporosis to be between one in 10,000 and one in 10,000 people annually. The risk has been estimated to be much higher, about 3% of patients, at the BP dose used to treat cancer, McKenna said. Nonetheless, more and more osteoporosis patients are willing to take their chances with the disease rather than risk the side effects. Surveys have shown that the recent trend in reduced hip fractures among post-menopausal women may be reversing owing to BP drug aversion.

“One of the factors of this condition has led to severe underuse of bisphosphonates for osteoporosis, so much so that we’re seeing a rise in hip fractures in elderly people, aversion to bisphosphonates in oncology clinics and liability concerns in the dental office,” McKenna said.

The research team used a different BP compound, an inactive compound that could be used locally in the mouth to push the BP drug from the jawbone while leaving undisturbed the useful drug in the rest of the skeleton. “Think of it as a way to fight fire with fire,” McKenna commented.

The scientists involved in the study used mice to test different BPs attached to fluorescent dyes. One coded the BP zoledronate, which is administered systemically to treat osteoporosis and cancer, while a different dye coded a BP compound with similar bone affinity, but no biological activity. Referred to as a rescue BP. The researchers discovered that the rescue BP injected into the jaw removed more of the BP drug causing the jaw bone tissue damage, clearing the way for the animal’s natural healing process to repair the extraction site.

“The new technique is not yet ready for clinical use in humans,” McKenna said BioVinc, which provided funding for the study via a National Institutes of Health small business research grant, will be responsible for advancing the treatment to commercial clinical use. Several of the authors of the study disclosed a financial interest in BioVinc, a company specializing in bone-targeted therapeutics and diagnostics. McKenna is the company’s academic founder.

The study, titled “Rescue bisphosphonate treatment of alveolar bone improves extraction socket healing and reduces osteonecrosis in zoledronate-intoxicated mice,” was published online ahead of print on March 26, 2019, and is due to appear in the June 2019 issue of Bone.
Quality Beyond Reliability – How Dentsply Sirona defines design for treatment centers

By Dentsply Sirona

There is never a second chance for the first impression. This phrase is particularly true in the perception of a dental practice where a treatment center is the centerpiece. To convey the high quality and comfort of its treatment centers Dentsply Sirona places high value on premium design – a central pillar of the quality commitment “Quality Beyond Reliability.”

What turns a plain dentist’s appointment into a first-class treatment? Dentsply Sirona’s answer to this question lies in the premium design of its treatment centers. A central feature of this design are the treatment centers’ color schemes. Dentsply Sirona’s treatment centers combine harmonious color design with a distinctively streamlined shape. The design concept provides three color worlds grouping together shades that harmonize particularly well with each other. This convincing design received renowned awards such as the IF Design Gold Award and the nomination for the German Design Award.

Award-winning design with three colour schemes

“Our treatment centers’ design evokes trust and spreads an atmosphere of safety and reliability. The patient experiences this in a fraction of a second,” explains Susanne Schwaddinger, Vice President Global Brand Marketing and Clinical Affairs, Equipment and Instruments. Dentsply Sirona’s treatment centers combine harmonious color design with a distinctively streamlined shape. The design concept provides three color worlds grouping together shades that harmonize particularly well with each other. This convincing design received renowned awards such as the IF Design Gold Award and the nomination for the German Design Award.

Premium design visualises hand-made high quality

The essential basics for premium design are high-value materials and high-quality production processes. Therefore, Dentsply Sirona’s treatment centers rely on three indisputable principles:
- Collaborating with specialized designers guarantees that the treatment centers show a state-of-the-art ingenuity that fulfills and exceeds the customers’ highest expectations.
- The research and development (R&D) work hand in hand with the engineers department to carefully select the best possible material for the treatment centers.
- According to Dentsply Sirona’s demanding test procedures, the upholstery needs to pass 250,000 stresses and strains without loss of quality – 120,000 times more than officially required.

Tangible benefits for patients and dentists

The well thought-out design of Dentsply Sirona treatment centers benefits both, patients and dentists. Thanks to the compact but soft upholstery patients enjoy a stylish and comfortable position allowing support of their shoulder and buck area. The cooling effect of the thermo upholstery reduces accumulated heat in the seat and back area to contribute to the patient’s relaxation, whereas the lounge version offers extra comfort through additional softness. Moreover, the spacious legroom enables easy access to the treatment center. At the same time, the dentist can work in an ergonomic position throughout the treatment. In addition, the treatment centers’ flat surfaces are easy to clean and disinfect.

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By Michèle Reners

“Stress” is a term that is often misused and applied inappropriately. In today’s world, being stressed is often associated with a busy, active work life. In reality, what we call “stress” is actually a complex phenomenon that weakens our organism and whose main purpose is to maintain internal balance. Stress is a reaction to too many demands and, more than just a risk factor, it is a real affliction.

But what is stress?

It is an adaptive response. In 1920, Cannon proposed a scientific description of stress: “the body of any complex animal manifests a stereotyped response pattern to any environmental threat disturbing its balance,” the well-known fight or flight response. It was Selye who in 1936 named it the “general adaptation syndrome.” He described three stages of physiological responses. The first is the alarm stage, when faced with a difficult situation. This stage aims to mobilize resources. Breathing accelerates, fat is burned and glucose released. The heart rate increases and the five senses become sharper. The digestive system is delayed and salivary production decreases. Priority is given to the muscles and the brain. All of these reactions, or adaptation efforts, are normal and useful and they allow our body to adapt to a continuously moving environment. If no action is possible and no solution convenient for adapting to the threat, the resistance stage begins. This stage corresponds to a state of hypertrophy, and it is at this stage that psychological and/or psychosomatic problems may begin. The stage of exhaustion marks the end of the stage of resistance with the exhaustion of resources and the abandoning of effort. This is burn-out.

Of course, everyone reacts differently to stressors, because everyone sees things differently and has his or her own capacity for adaptation (or ability to cope). We talk about successful coping behaviour when the individual has a feeling of confronting and staying in control. It would be a failure if he or she were overwhelmed by events (stress). Selye also made a distinction between negative stress (distress) and positive stress (eustress). The latter is beneficial to everyone, as it allows one to push one’s boundaries without losing one’s internal balance and reach a fixed objective (for example, the stress of a sportsperson before a competition).

What is the link between stress and periodontal disease?

Periodontal disease is an inflammatory multifactorial bacterial disease. In necrotic periodontitis, stress has long been recognised as a major risk factor. Alexander the Great’s soldiers were already suffering from this pathology, and later, it affected soldiers in World War I, when it was known as “trench disease.” Stages of activity have been described in the development of periodontal disease. Stress is considered to be an aggravating factor owing to two phenomena: stress generates a change in behaviour on the one hand and a reduction in immune defences on the other. Many studies, some very old, have shown that patients with depression have a tendency to eat poorly, take less care of themselves and increase their consumption of tobacco, alcohol and medication. We know that periodontal disease is stabilised if patients carry out daily meticulous cleaning of their teeth and interdental spaces. Internal motivation is reduced in depressed patients and so negligence of dental hygiene increases the amount of biofilm and changes its composition. Nutritional deficiencies are also responsible for decreased immunity. Tobacco use is a recognised risk factor for periodontal disease. The accumulation of all these changes in behaviour increases the risk of developing periodontitis or of relapsing.

The way in which stress acts on the immune system is summarised according to the hypothalamic-pituitary-adrenal axis. Psychosocial stress is capable of activating the hypothalamus, which will secrete adrenocorticotropic hormone, which will in turn stimulate the adrenocortical gland to produce glu-cooccorticoids, of which cortisol has an...
Plant-based diet could help reduce gingivitis

By DTF

FREIBURG, Germany: A recent study has shown that a plant-based whole-food diet enriched with omega-3 fatty acid and vitamin D is able to reduce gingival inflammation naturally. Based on the findings of this trial, the researchers recommended that dental professionals ought to assess dietary behaviour in patients with gingivitis and provide dietary recommendations in addition to periodontal therapy.

For the trial, 30 patients with gingivitis were randomised to an experimental and a control group stratified

by their plaque values, which were taken at baseline and the end of the study. The experimental group changed to a diet low in processed carbohydrates and animal protein, and rich in omega-3 fatty acid, vitamin C, vitamin D, antioxidants, plant nitrates and fibre for four weeks, whereas the control group remained on their western diet. All participants stopped using dental floss and other interdental cleaners during the trial period. Periodontal parameters, such as subgingival plaque values and gingival bleeding, after the procedure were assessed by a blinded dentist.

The findings indicated that, although there were no differences regarding the participants’ plaque values, the experimental group experienced a significant reduction in gingival bleeding. Apart from the potential benefit for oral health, a substantial increase in vitamin D values and weight loss was also evident.

“Study results clearly demonstrate the possibility to naturally reduce gingivitis by an optimised diet that also promotes general health. According to this, dental teams should address dietary habits and give adequate recommendations in the treatment of gingivitis, since it might be a side effect of a pro-inflammatory western diet,” said lead author Dr Johan Wölber, a dentist and research assistant in the Department of Operative Dentistry and Periodontology of the Centre for Dental Medicine at the University of Freiburg Medical Centre.

The study, titled “The influence of an anti-inflammatory diet on gingivitis. A randomised controlled trial”, was published online on 2 April 2019 in the Journal of Clinical Periodontology.

A new study has suggested that gingivitis is profoundly affected by diet.


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Unilever to acquire Fluocaril and Parogencyl brands from Procter & Gamble

By DTI

LONDON, UK/ROTTERDAM, Netherlands: Unilever has announced that it has signed an agreement to acquire the Fluocaril and Parogencyl oral care brands from Procter & Gamble.

Fluocaril and Parogencyl are well-known therapeutic brands sold in the pharmaceutical industry, primarily in France and Spain. They have a product portfolio that is widely endorsed by health professionals. Fluocaril offers oral care solutions specialising in protection against dental caries. Parogencyl tackles gingival issues.

The acquisition will give Unilever a leading role in oral care in the pharmaceutical industry in France, as well as a strong position in Spain.

With their powerful brand heritage, high visibility and sound reputation with dentists, these brands are a great complement to the existing oral care portfolio of Unilever.

The terms of the deal were not disclosed. The acquisition is expected to close in the second quarter of 2019.

Research finds presence of dental phobia not a barrier to treatment

By DTI

LONDON, UK: It has been established that patients with a phobia of dentistry may often delay visiting the dentist or avoid it altogether. It comes as welcome news, then, that a recent study has found that treatment plans offered by dentists are overwhelmingly influenced by the complexity of the patient’s oral situation and are not impeded by the presence of a phobia.

Though over 50 per cent of the British public say that they are anxious about visiting the dentist, only 12 per cent have such high anxiety levels that it can be classified as a phobia. These patients frequently have poorer oral health and higher rates of dental caries, outcomes that are partially driven by an avoidance of clinical treatment.

A new study conducted by researchers from King’s College London set out to test whether the presence of a dental phobia modifies the proposed treatment plan for such a patient compared with the plan for a non-phobic patient. The researchers invited 79 UK-based dental practitioners to create a treatment plan for an imagined patient that had either simple or complex treatment needs based on a number of dependent variables, such as periodontal treatment, extractions and provision of crowns.

The results of the study showed that dentists offered a more complex treatment plan for complex conditions and that treatment decisions were primarily influenced by the oral needs of the patients, and not whether or not a dental phobia existed.

Dr Ellie Heidari, lead author of the study and a senior specialist clinical teacher at King’s College London, said in a release regarding the study: “In order to deliver dental care for people with dental phobia, it is important to adapt an approach, where prevention of oral diseases and preservation of teeth, when possible, is provided as part of dental care plans.”

“Another important component in their care would be to address dental phobia by providing them with an opportunity to access cognitive behavioural therapy. This is a therapy that has been proven to be very successful,” she added.

Dr Tim Newton, Professor of Psychology as Applied to Dentistry at King’s College London, commented: “Those with dental phobia are experiencing both the enormous challenges of living with their fear, and of having poorer oral health. It is gratifying to see that for the dental team the presence of a phobia is not perceived to be a barrier to complex restorative or preventive approaches. We hope to be able to ensure that not only do people with dental phobia derive the benefits of good oral health but also overcome their fear through the most effective treatment—cognitive behaviour therapy.”

The study, titled “The impact of dental phobia on care planning: A vignette study”, was published in the April 2019 issue of the British Dental Journal.
## Certificate & Diploma in Restorative Aesthetic Dentistry

### From British Academy of Restorative Dentistry

#### DUBAI 2019-2021

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### Certificate | 4 Modules | 15 Days

**Module 1** | 19-21 September 2019 | Prof. Paul Tipton & Dr. Adam Toft & Dr. Ashish Rayarel  
Treatment Planning in Advanced Restorative Dentistry  
The Principles of Occlusion in Advanced Restorative Dentistry  
Tooth Preparation in Advanced Restorative Dentistry

**Module 2** | 20-23 November 2019 | Prof. Paul Tipton & Dr. Matthew Holyoak & Dr. Adam Toft & Dr. Ashish Rayarel  
Minimally Invasive Veneer Preparations  
Master the Art of Composites Part 1 - Adhesion Composites & Anterior Composite Restorations  
Master the Art of Composites Part 2 - Composite Veneers  
Master the Art Composites Part 3 - Posterior Composites

**Module 3** | 19-22 February 2020 | Prof. Paul Tipton & Prof. James Prichard & Dr. Adam Toft & Dr. Ashish Rayarel  
Enhance Your Expertise in Endo Part 1  
Enhance Your Expertise in Endo Part 2  
Occlusal Examination  
Emax & Zirconia Anterior & Posterior Restorations

**Module 4** | 08-11 April 2020 | Prof. Paul Tipton & Dr. Malcolm Riley & Dr. Adam Toft & Dr. Ashish Rayarel  
Bridge Design  
Aesthetic Perio Connective Tissue Grafting  
Aesthetic Perio Crown Lengthening  
Modern Post and Core Techniques

### Diploma | 4 Modules | 15 Days

**Module 5** | September 2020 | Prof. Paul Tipton & Dr. Adam Toft & Dr. Ashish Rayeral  
Bridge Preparation Techniques  
Articulator selection in Restorative Dentistry  
Porcelain Inlays & Onlays  
Veneer Cementation Techniques Practical

**Module 6** | November 2020 | Prof. Paul Tipton & Mr. Gary Jenkinson & Dr. Adam Toft  
The Art & Science of Aesthetic Dentistry Part 1 & Anterior Diagnostic Waxing  
The Art & Science of Aesthetic Dentistry Part 2 & Posterior Diagnostic Waxing  
TMD, It’s Diagnosis and Treatment  
Adhesive Bridge Preparation Techniques

**Module 7** | February 2021 | Prof. Paul Tipton & Prof. Edward Lynch & Dr. Adam Nulty & Dr. Adam Toft & Dr. Ashish Rayeral  
Minimally Invasive Dentistry  
Digital Dentistry Workflow & Photography Principles, Hardware and Storage Part 1 & 2

**Module 8** | May 2021 | Prof. Göran Urde & Dr. Timothy Eldridge & Dr. Adam Toft & Dr. Ashish Rayeral  
Implant Prosthodontics Part 1 & 2  
Botox & Dermal Fillers – A Dental Facial Aesthetics Part 1 & 2

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**INNOVATIVE LED RING**
shadow-free light and ideal illumination of the operating site

The Piezomed offers extremely high performance, yet is gentle on soft tissue. In addition, it includes automatic instrument recognition and LED handpiece illumination. The handpiece with the cable is thermo washer disinfectable and sterilizable!

**EFFICIENT COOLING**
for cooling the operating site extremely efficiently

**AUTOMATIC INSTRUMENT DETECTION**
protects the instruments against overloading

**FINE TOOTH DESIGN**
for improved cutting precision

**SPECIAL BOOST FUNCTION**
to increase the set basic power by 20%

Surgical procedures have never been as quick and safe
24 innovative instruments for every application.