"Clinical education is key to us. Providing dental professionals with essential knowledge is one of our main goals"

By Dr. Dobrina Mollova

DUBAI, UAE: Dental Tribune MEA had the pleasure to interview Don Casey, CEO of Dentsply Sirona and Walter Petersohn, CCO of Dentsply Sirona during their visit to Dubai recently. The interview took place at the beautiful Dentsply Sirona office in Business Bay which is equipped fully to provide outstanding training facilities to dental professionals from around the Middle East region.

Dr. Mollova - DTMEA: A warm welcome to the Middle East. Is this your first-time visiting Dubai, particularly the Dentsply Sirona Office – Middle East?

Don Casey: Yes, this is my first visit to Dubai. The Dentsply Sirona office here is beautiful, showcasing our products and offering outstanding training facilities to our customers. We really appreciate the partnership that we have with CAPP in terms of focusing on clinical education. It is a team effort to help dental professionals practice with new equipment in new ways.

Transformation for the better with digital dentistry

By 3D Systems

Capabilities in dentistry have evolved at an astonishing rate over the past several years, and the transformations are by no means slowing down. The introduction of synergistic technologies such as intraoral 3D scanning, computer-aided design (CAD) software, 3D printing, and materials science are creating new treatment and business opportunities for dental professionals with equally positive impacts on patients. Offering unprecedented speed, accuracy and cost-effectiveness, the digital dentistry workflow is not theoretical; it is in use in labs and clinics around the world, and it is gaining traction daily.

Generally speaking, a complete digital dentistry workflow includes methods for digitizing patient information, precisely manipulating that digital information, and transferring digital information back into the physical world in a suitable material. Many dental offices have now adopted intraoral 3D scanning, which satisfies the first step of the workflow and gives patients a more comfortable alternative to traditional impressions.

For the design and fabrication stages of the workflow, access points vary. Some dentists prefer to outsource these operations to a lab, where digital design and fabrication methods are becoming an increasingly popular choice for fast, high quality and cost-effective dental models and restorations. Other clinics find it more cost-effective, productive and valuable to have a complete digital workflow available for immediate use on site. For both labs and offices, digital production has become far more obtainable through the emergence of easy to operate dental 3D printers like the NextDent 5200, which offers high print speeds, a small footprint, and high material versatility. The NextDent portfolio includes 50 unique biocompatible and CE-certified materials, making it capable of addressing a broad range of clinical needs.
CEREC Primemill makes excellence easy

CEREC takes another big step forward with the introduction of CEREC Primemill, a brand-new grinding and milling unit from Dentsply Sirona.

By Dentsply Sirona

Fabricating chairside restorations is about to get easier and significantly faster. Thanks to state-of-the-art technology, a wide range of restorations can now be manufactured with more speed and outstanding results. Together with CEREC Primemill and the CEREC software, CEREC Primemill forms a modern setup for achieving predictable results with a completely new chairside experience—for both the user and the patient. CEREC Primemill, Dentsply Sirona’s new grinding and milling machine, ensures producing impressive restorations with precise margins and a highly smooth surface which results from the high-speed setup with two spindles and four motors. CEREC Primemill features a powerful 7-inch touch interface, an integrated camera for scanning blocks with computable data matrix code and an RFID scanner for reading tool information. It also works with a wide range of materials. The new design offers significantly smoother operation. ’CEREC Primemill is a real game changer in the whole workflow,’ said Dr. Gertrud Fabel, dental practitioner in Munich (Germany) and key opinion leader for Dentsply Sirona. ‘Everything works significantly faster than before, the quality of the restorations is convincing due to the very fine margins and smooth surfaces, and handling is more simple: the team can provide perfect support and thus accelerate the entire workflow to make it even more pleasant for the patient.’

Guided operation for maximum convenience

When developing the new CEREC Primemill, special attention was paid to its user-friendliness. The large touch interface guides the user through all workflow processes. Each workflow step is displayed in order and shows, for example, which tools are used for the selected material and machining option. The tools are outfitted with a color code depending on the material to be processed and are therefore easy to distinguish. Each tool also contains a small radio frequency identification (RFID) tag that can be read by an integrated scanner in the CEREC Primemill. The machine informs the user about the tool’s status and if or when it should be replaced with a new one. The new user guidance makes it even easier to delegate the operation of the machine.

For additional convenience, material blocks with a compatible data matrix code can be scanned with the integrated camera. With this the block information including type, size, color and zirconia enlargement factor are recorded. The unit’s LED light strip also informs the user about the unit’s status including a moving blue progress bar which changes to green when the manufacturing process is finished. In addition, the interface guides the user through intuitive maintenance procedures and thus facilitates the easy upkeep of CEREC Primemill.

More aesthetic, faster and simply excellent

With CEREC Primemill, restorations, especially those made of zirconia, can be milled even faster thanks to new tools and improved technology. The time required to fabricate a zirconia crown has been reduced by more than half. It can be cut from around 10-12 minutes to as little as 3 minutes using our new Super Fast mode.

The results speak for themselves. Using newly developed, very fine tools (0.5 mm) in the Extra Fine milling mode, the unit achieves a high level of detail for occlusal fissures as well as interdental areas on bridges, enabling users to achieve predictable, first-class results.

Superior chairside experience

The entire CEREC system takes on a new dimension with CEREC Primemill. For those customers who now want to step into the chairside CAD/CAM world and want to use CAD/CAM technology in their practice, with all the new CEREC they get a full system with great flexibility for reliable results. Users who are already successfully using CEREC in their practice will appreciate the system with the new level of speed, high level of quality, and convenience provided by CEREC Primemill.

‘It was important for us to create real added value with CEREC Primemill, both for the CEREC user and for those who have been passionate CEREC users for years,’ explained Dr. Alexander Völcker, Group Vice President CAD/CAM & Orthodontics at Dentsply Sirona. ‘We have noticeably increased the process speed while delivering outstanding restoration results. The variety of applicable materials leaves nothing to be desired and operating the unit has never been easier. The complete system does not require any data imports or exports. All processes are coordinated with one another and validated for an excellent and seamless chairside experience.’

Due to various certification and registration periods, not all products are immediately available in all countries.

For more information on Primemill or CEREC please reach out to your local Dentsply Sirona representative or visit our website www.dentsplysirona.com.

Fig. 1: The renewed CEREC system. CEREC Primemill proves to be a real gamechanger.
CEREC Primemill
Excellence made easy.

The new CEREC Primemill is uniquely equipped for superior chairside dentistry. Our fastest milling unit ever, it’s also the easiest to use and compatible with the widest range of materials. Above all, it empowers dentists to deliver consistently excellent treatment for multiple indications.

The CEREC Primemill seamlessly combines with the highly accurate CEREC Primescan and new CEREC Software 5 to redefine performance in daily practice. Join us at your local CEREC event and test it yourself.

The all-new CEREC. Now is the time.

Learn more at: dentsplysirona.com/cerecprimemill

THE DENTAL SOLUTIONS COMPANY™
The 100k foot VALO™ curing light drop test: behind the scenes

By Daniel Lewis, USA

There’s a defying helpfulness all golfers know, when you take two shots to get the ball on the green, then another two, three, or four shots to reach the bottoms of the cup. Those final few feet between tee box and pin routinely humble the most optimistic golfer.

Ultradent took on a celestial par-5 when they launched a VALO Grand dental curing light into space in May of 2019. Our version of the putting green was a mountain covered in loose shale where the VALO Grand light landed. We eventually “sink the putt” by finding the curing light...but we took several attempts to do it.

The Vision to Send a VALO Light to Space

The tenth-anniversary for a product like the VALO curing light can’t be a simple wine and cheese party. The line has set the bar for curing lights for a decade—we had to set the bar with a celebration. “This is the kind of thing where I didn’t ask a lot of permission,” jokes Ultradent’s Mike Simmons, a cornerstone architect of the VALO Light to Space initiative.

Simmons brought the idea to the table, but he credits the inspiration to a friend. “He had two very sick daughters with a rare immune deficiency. One of their brothers donated his bone marrow to his sister...and they had a hero party for him, where they sent a bobblehead of him to space on a weather balloon and captured it with GoPros.”

With this concept in mind, Simmons began formulating a plan to mark the VALO curing light’s decade on the market with a true out-of-this-world event. His team eyed May 1, 2019...for a decade—we had to set the bar for curing lights.

As the VALO Grand curing light—along with a bobblehead of Ultradent Founder and CEO Dr. Dan Fischer—to 100 thousand feet of atmosphere relatively uncomplicated.

They devised a payload that would carry their VALO Grand curing light—along with a bobblehead of Ultradent Founder and CEO Dr. Dan Fischer—to 100 thousand feet of altitude, while also filming every angle of the flight and fall.

The cargo consisted of a Styrofoam box, four GoPro cameras, the VALO Grand curing light, and the Dr. Fischer bobblehead—all carried into space by a standard weather balloon purchased on Amazon.

The deployment complication came from the fuel needed to power the 100k foot journey. “We’re in a national-helium shortage,” says Simmons just finding a vendor who would sell helium became a difficult endeavor, but a supply was eventually secured. “We may have overpaid for that,” he chuckles.

Helium in tow, Simmons’ team narrowed their focus on the May 1, 2019 sendoff.

Ultradent teed-off on a celestial par-5 when we launched a VALO Grand dental curing light into space in May of 2019. Our version of the putting green was a mountain covered in loose shale where the VALO Grand light landed. We eventually “sink the putt” by finding the curing light...but we took several attempts to do it.

Ultradent’s Mike Simmons pads cargo for the [first] overnight trip into the Uinta mountains

The GPS pings were line with the predicted flight path, and the team followed the digital footprints.

“It was following the trajectory of the prediction calculator exactly. We were like, ‘ok this might be too good to be true,’” says Simmons. “Then we lost it.”

The half of pings didn’t alarm the team— they anticipated losing communication with the payload when it reached 40–50 thousand feet of elevation. They expected to pick up the pings again once the balloon popped and the cargo descended back toward Earth.

The crew pulled into a roadside diner and bunkered down, eating lunch to anxiously pass the time waiting for the next GPS ping.

“We had lunch with our laptops open, thinking ‘OK anytime now,’” Simmons renown. “A couple hours later we’re just sitting there, and there’s nothing. We knew the total flight time would be somewhere between 25 and 35 hours. And we gave it, probably 4.5 hours, maybe 5 hours...just waiting, waiting, waiting. We ordered dessert, and still, nothing. We kind of just started our wounds and went back to Ultradent.”

“There was a totally different feel in the van on the way back. Everybody was quiet, nobody was talking. People were making occasional jokes, trying to cheer each other up...but we were all just like ‘ohhh noo,’ says Brown. “Just a real quiet ride back. I think we stopped to film a train. Oh that will make up for it, at least this train we saw.’’
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...Another obvious highlight from...Straumann Group: in October, the...fans of the DTI network had...participants.

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![Toothpaste Stain Removal Diagram](image)

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Midline diastema closure using the front wing technique

By Dr. Walter Devoto, Italy

About the Case
A 35-year-old female patient expressed a desire to optimize existing composite restorations on her maxillary central incisors, which had been placed 15 years previously to close her diastema. A silicone key had been used for guidance. No tooth preparation was carried out, as the composite was bonded to the tooth structure.

Challenge
The surface of the restorations showed slight discolorations which were removable by polishing. The shape of the teeth was acceptable, but not perfect. A decision was made to retreat her in a non-prep, single-shade approach. The main goal was to create a more natural shape. The front wing technique invented by the StyleItaliano team was used. This approach involved freehand modeling of the vestibular part of the tooth, which was easily accessible. Afterward, material was added to the palatal side, and anatomical matrices were employed for shape optimization.

Outcome
The technique worked beautifully to close the diastema. Despite freehand modeling, it was much easier and more precise than using a palatal silicone index. In addition to the natural shapes that were achieved, 3M Filtek Universal Restorative blended well with the surrounding dentition, making the restorative work indistinguishable.

About the author
Dr. Walter Devoto graduated with honors in dentistry and dental prosthesis in 1991 at the University of Genoa, Italy. He is particularly interested in the fields of conservative dentistry and esthetic dentistry and runs his own private practices in Sestri Levante and Portofino. In addition, he is collaborating with diverse prestigious dental offices throughout Europe, which specialize in esthetic dentistry. He has worked as a teacher and demonstrator at the University of Genoa and as a lecturer at the universities of Siena and Madrid. Now, he is a lecturer at the International University of Catalonia, Barcelona, Spain, and visiting professor at the Aix-Marseille University in Marseille, France.

Case Overview
INITIAL SITUATION: 15 years after the initial non-prep treatment, the restorations were still intact, but there was room for improvement in regard to shape, especially in the vestibular area.

To ensure esthetic results and create favorable conditions for bonding, surfaces were roughened and discloration and debris removed with 3M™ Sof-Lex™ Extra-Thin Finishing and Polishing Discs.

Enamel was etched with 3M™ Scotchbond™ Universal Etchant. After 15 seconds, etchant was removed by rinsing with water, and 3M™ Scotchbond™ Universal Adhesive was applied.

The preferred material for the single-shade technique was 3M™ Filtek Universal Restorative™ shade A1. The composite has a universal opacity and lending a chameleon effect.

Composite material was applied to fill space between each incisor and adjacent matrix. Matrix shape helped establish light contact points and desired anatomical form.

After light curing, composite was added from the palatal side. First matrix on right central incisor was removed.

Removal of second matrix revealed a natural shape. Composite excess was easily removed from the incisal edge.

Restoration surface was polished with 3M™ Sof-Lex™ Pre-Polishing Spiral (beige) of the 3M™ Sof-Lex™ Diamond Polishing System.

NEW composite restorations blended well with natural surface of central incisors.

FINAL RESULTS: Anterior restorations were naturally shaped and virtually indistinguishable from natural tooth structure. The composite blended in perfectly with the color of the surrounding teeth.

Refer to Instructions for Use (IFU) for complete product information.
What if a composite could make your busy days easier?
Mastering black holes with premium endo-brands

By Coltene

COLTENE is a global leader in the development, manufacture, and sale of consumables and small equipment for endodontic treatment applications. The comprehensive portfolio of endodontic systems includes root canal preparation with files and rinsing solutions, obturation and post systems, as well as the inventors of controlled memory files with the launch of HyFlex CM in 2011. COLTENE has taken a lead in developing solutions for modern endodontic treatments.

Additionally, the COLTENE Dental Group offers a wide range of products, encompassing three segments. This results in solutions for almost all dental treatments ranging from infection control to tooth preservation and treatment efficiency. The COLTENE Group strengthened its position in the Endo-Segment with the acquisition of the French expert MicroMega. The now combined product portfolio offers an even more customized range of files and endodontic equipment.

Product range for new endodontic dimensions:
- HyFlex EDM and CMA MicroMega One Curve and MicroMega 2Shape NITI file systems, allowing the fast and safe instrumentation of the various root canal anatomies according to the preferences of the user.
- HyFlex paper and gutta-percha points, which perfectly match to the HyFlex CM and HyFlex EDM NITI file systems.
- Well proven CanalPro and MicroMega Dual Move endo motors, completed by CanalPro and Dual Post Apex Locators for working length measurement.
- Innovative modular CanalPro rinsing station system and MicroMega EndoSolo for ultrasonic activation to ensure an optimized disinfection and long-term successful treatment.

New SmartLite Pro – more than just a curing light

By Dentsply Sirona

Primarily, a curing light is a device to polymerize restorative materials. But it can be so much more, as shown by the new SmartLite Pro from Dentsply Sirona. It is an outstanding tool that allows for cutting edge curing performance. In addition, it features a forward-thinking modular concept with quick connect tips for a variety of clinical indications. Last but not least it exhibits an extraordinary design combining high-tech elements and robustness with a lightweight pen-style look and feel.

The SmartLite Pro is a unique modular curing device in a remarkable, all-metal housing.

Designed to perform

Once you have taken the new curing light into your hands you will immediately feel a lightweight and well-balanced pen-style design which is beautiful in each of its details. The SmartLite Pro’s housing is fabricated of medical-grade stainless steel and anodized aluminum providing for robust durability and elegant simplicity.

The user will love the easy and intuitive operation with only one single button. Feedback is facilitated by precise audible and tactile signals. Its clinical performance in everyday practice is unarguable.

Top of the class in curing

SmartLite Pro features newly engineered state-of-the-art optics to provide a homogeneous beam profile for a uniform curing performance. Unlike many conventional lights, the new device has an even and focused light distribution over the entire curing area. Moreover, the SmartLite Pro features an active light output diameter of 10 millimeters. This ensures that the beam completely encompasses even fillings with a large horizontal extension. The leading clinical performance is accompanied by a comfortable handling. The 360 degree rotatable tips and the low-profile head with four high-performance LEDs guarantee easy clinical access even in hard to reach areas of the mouth. The dentist experiences excellent intraoral control and will easily maintain a steady hand at the proper angle.

Constant availability thanks to innovative battery management

The Futuristic multifunctional charging base features a built-in radiometer and room for extra tips. The intuitive battery management system comes with two quick connect batteries for constant availability. Cutting-edge lithium iron phosphate cell technology ensures that the dentist may enjoy a full day of clinical operation with only one charge.

Thinking ahead

The modular versatility expands the options beyond the scope of a pure curing light and includes various other indications. For example, the user may easily change from the curing tip to the transillumination tip. Within a few moments he holds a diagnostic aid for the visualization of interproximal caries and cracked teeth in his hand. And in the area of root canal treatment this tip will provide for endo access illumination.

But the best news is: The platform technology of the SmartLite Pro offers a forward-thinking system, which gives way to numerous future upgrades and will open up new worlds of indications and applications. The SmartLite Pro is one of the most versatile dental instruments because it features leading quality of care and yet is so much more than just a curing light.

Dental study of ancient chewing gum informs about oral microbiomes of the past

By Dental Tribune International

COPENHAGEN, Denmark: Though its popularity and constituent ingredients have changed over time, chewing gum has been used by humans for thousands of years. A new study out of Denmark that analysed a 5,700-year-old piece of chewing gum made from birch bark pitch has succeeded in extracting a complete human genome from the pitch, demonstrating its potential as a new source of ancient DNA.

The pitch was found during archaeological excavations carried out by the Museum Lolland-Falster at Syltholm in southern Denmark, and subsequent analysis was conducted by researchers at the University of Copenhagen. Radiocarbon dating of the pitch helped to place it as a specimen from the early Neolithic period in Denmark, while DNA sequencing revealed that it was chewed by a female who was more closely genetically related to the hunter-gatherers of mainland Europe than to those who populated central Scandinavia at the time. It was found that she probably possessed dark skin, dark hair and blue eyes.

Traces of hazel fruit and duck DNA were also identified in the pitch, suggesting that these may have formed part of the individual’s diet. The researchers also successfully identified DNA fragments from several bacterial and viral taxa, including the Epstein-Barr virus, which can cause glandular fever.

“The [archaeogenetic] is the biggest Stone Age site in Denmark and the archaeological finds suggest that the people who occupied the site were heavily exploiting wild resources well into the Neolithic, which is the period when farming and domesticated animals were first introduced into southern Scandinavia,” said Dr Thes Jørgensen, a postdoctoral student at the University of Copenhagen’s glæge Institute and co-author of the study. “We managed to extract many different bacterial species that are characteristic of an oral microbiome,” added Dr Lise Schneider, associate professor at the Globe Institute.

“Our ancestors lived in a different environment and had a different lifestyle and diet, and it is therefore interesting to find out how this is reflected in their microbiome,” he continued.

Though still a relatively new form of analysis, DNA sequencing from birch bark pitch is growing in popularity, in part owing to its potential to be a good proxy for human bones in archaeogenetic studies. As reported by Dental Tribune International last year, Scandinavian researchers have previously used pitch to sequence DNA from the first humans who settled in the region some 10,000 years ago.

Though a considerable amount of information can be uncovered through the DNA sequencing of pitch, several questions still remain—including the question of what the purpose of chewing it was. Some researchers have suggested that it may have been a method for making the pitch more pliable for further toolmaking purposes, while medicinal and hunger-suppressing uses have also been put forward for consideration.

The study, titled “A 5,700 year-old human genome and oral microbiome from chewed birch pitch,” was published on 17 December 2019 in Nature Communications.
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Perform at your best in diagnostic and restorative
Reduce glare and create beautiful restorations

By Hu-Friedy

Having a clear and precise diagnosis is needed in order to correctly plan the necessary treatment and sight is the first sense that every clinician uses; therefore having the best possible vision is crucial.

With this in mind, Hu-Friedy, the global leader in dental instrument manufacturing and infection prevention solutions, leveraged the success of HD Mirrors, Blackline and XTS product lines, to create HD Black Line Mirrors. This innovation was engineered to optimize clinical outcomes by delivering superior visibility throughout any dental procedure.

Designed for enhanced performance, Hu-Friedy’s HD Black Line Mirrors have a Diamond Like Carbon (DLC) coating, which reduces glare up to 80%** compared to a standard metal mirror head and handles. This helps to reduce strain and fatigue, creating a more ergonomic mirror, as the user does not need to adapt their viewing position due to unwanted shine produced by traditional metal mirror handles or frames.

Additionally, the black matte finish provides enhanced contrast and visual acuity within the oral cavity. This creates a distinct contrast between the instrument, the tooth and/or the surrounding tissue allowing for easy identification intraorally.

So, the DLC coating in combination with the superior brilliance and color of Hu-Friedy’s proprietary HD Mirror glass facilitates quicker and more accurate visibility of the mouth. Tami Wanless, RDH, MED, from USA, states about the product: “I wear loupes with a LED".

According to Waltimo, the study findings can be applied to any other patient groups, especially not to patients suffering from cancer in the region of the head and neck, or those with a heart valve or a prosthetic joint.

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Radical oral intervention not necessary before stem cell transplants, study says

By Dental Tribune International

BASEL, Switzerland/HELSINKI, Finland: Hematopoietic stem cell transplantation is used to treat cancers and severe blood and autoimmune diseases. Owing to slow immune system recovery after the transplantation, patients have a heightened risk of infection. However, a recent study has reported that the presence of acute or chronic oral foci of infection before the transplantation does not affect the patient’s survival rate within six months of the procedure.

The study was conducted by the University of Helsinki, the Helsinki University Hospital, the University of Basel, and the University Hospital Basel. It involved patients who had been treated at the University Hospital Basel, of whom 341 had received an allogeneic stem cell transplantation and 153, an autologous stem cell transplantation.

The procedures were carried out between 2008 and 2016. Before the transplantation, all patients underwent a clinical and radiographic dental examination to identify any potential foci of infection and the number of missing and filled teeth.

A total of 37 stem cell transplant patients died within six months of the procedure. However, the data showed that the foci of infection, the number of missing or filled teeth, and the cases of periodontitis identified in the examinations were not associated with the patients’ lower survival rates.

“Contrary to our assumptions, untreated oral infections had no connection with post-stem cell transplantation survival during the six-month follow-up period. Another surprise was that they had no link with any serious infectious complications occurring during the follow-up period,” said lead author Prof. Tuomas Waltimo, assistant lecturer in the Department of Biomedical Engineering at the University of Basel.

“However, the patient’s health permitting, and if the wound has enough time to heal before chemotherapy, the radical treatment of such infections is justified. Other than that, conservative, non-radical treatment that eliminates the infection carried out by a dentist familiar with the case appears to be the lowest risk option in terms of infectious and bleeding complications,” Waltimo noted.

According to Waltimo, the study findings cannot be applied to any other patient groups, especially not to patients suffering from cancer in the region of the head and neck, or those with a heart valve or a prosthetic joint.

The study, “Associations of oral foci of infections with infectious complications and survival after hematopoietic stem cell transplantation,” was published on 18 December 2019 in PLOS ONE.
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Designed for enhanced performance, Hu-Friedy’s HD Black Line Mirror is engineered to optimize clinical outcomes by delivering superior visibility throughout any dental procedure.

The Diamond Like Carbon (DLC) coating of the handle and mirror frame reduces glare up to 80%.*

The durable black matte finish in combination with the superior brilliancy and color of Hu-Friedy’s proprietary HD Mirror glass facilitates quicker and more accurate visibility of the mouth.

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The inclusion of a ductile material allows Akro-Flex to perform as a solid brush.

Watch the video
Frame the QR Code with your smartphone and watch directly on YouTube. Video courtesy of Dr. Stavros Pelikanos.

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‡ 50% brighter than other front surface mirror glass.

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By incorporating Nickel Titanium, a material known for its super elasticity, Akro-Flex acts as a solid brush. The resilient working ends are excellent when creating fine anatomical detail with delicate, artistic strokes.

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The smooth, lightweight handle offers increased control due to the large diameter. It creates an ergonomically friendly option that provides maximum comfort and helps reduce hand fatigue. Reduced hand fatigue can increase the longevity of a clinician’s career.

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Ultra thin working ends reach narrow interproximal spaces with ease. The flexible, versatile working ends allow for better visibility as compared to traditional composite instruments.

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How the best perform
2019 GNYDM highlights latest dental products and technologies

By Dental Tribune International

NEW YORK, U.S.: Held from Nov. 29 to Dec. 4 at the Jacob K. Javits Convention Center, the 2019 Greater New York Dental Meeting (GNYDM) demonstrated once again why it is the country’s largest and most anticipated dental congress by offering an inviting mix of educational sessions, hands-on workshops, product launches and more.

The 95th iteration of the free-to-attend annual event attracted more than 52,000 attendees from all parts of the dental industry. A large number of these visitors were international. The German Pavilion featured a variety of companies displaying their wares under a “made in Germany” banner, while another area of the convention center showcased a broad range of Korean companies such as META BIOMED and DIGIRAY.

More than 300 educational courses and events were conducted over the course of the 2019 GNYDM, covering topics as diverse as adhesive dentistry, guided implant surgery and early detection of oral cancer. A number of these courses were run entirely in Spanish, an inclusive choice that considered the approximately 41 million native Spanish speakers who currently reside in the United States.

Live dentistry sessions were held each day in the convention center and proved to be a hit with audiences. Among these sessions were “Executing Accurate Aesthetic Dentistry,” in which Dr. Michael Apa discussed techniques for preparation, temporization and the integration of digital technology, and “Modern Materials in a Digital Era,” a session presented by Dr. Justin Chi and sponsored by Glidewell Dental.

WAVE was present at the 2019 GNYDM to publicly debut WAVE Payments, a full-scale payment processing platform for small and medium-sized businesses, and 3DISC launched the latest version of the HEROS IOL, its solution for intraoral scanning.

The 2020 GNYDM will be held once again at the Jacob K. Javits Convention Center from Nov. 27 to Dec. 4, 2020.

The 2019 GNYDM attracted more than 52,000 attendees from all parts of the dental industry. (Images: Dental Tribune International).
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01 Assess
Probe and Screen Every Clinical Case
- Healthy teeth, gums, gingivitis, periodontitis
- Healthy implants, mucositis, peri-implantitis
- Start by rinsing with BioField Preprophylaxis

02 Disclose
Make Biofilm Visible
- Highlight to patients the disclosed biofilm and their problematic areas with EMS Biofilm Discloser
- The color will guide biofilm removal. Once biofilm is removed, calculus is easier to detect

03 Motivate
Raise Awareness and Teach
- Emphasize prevention
- Instruct your patients in oral hygiene
- EMS recommends Phillips brush, toothbrushes, interdental brushes, and Airfloss Ultra

04 Airflow®
Remove Biofilm, Stains and Early Calculus
- Use AirFlow® for natural teeth, restorations and implants
- Remove biofilm supra- and subgingivally up to 4 mm
- Using AirFlow® PLUS Nano Powder
- Also remove biofilm from gingiva, tongue and palate
- Remove remaining stains on enamel using AirFlow® Classic Comfort Powder

05 PerioFlow®
Remove Biofilm in T PPM Pockets
- Use PerioFlow® Plus Powder on natural teeth in deep pockets and root factions and on implants
- Use the rounded PerioFlow® Nozzle

06 Piezo® PS
Remove Remaining Calculus
- Use the minimally invasive EMS Piezo PS instrument supra- and subgingivally up to 7 mm
- Class II and III pockets with premolar
- Use EMS Piezo PS instrument around implants up to 3 mm
- Subgingivally and on restorations

07 Check
Make Your Patient Smile
- Do a final check for remaining biofilm
- Ensure calculus is fully removed
- Accurately diagnose caries
- Protect with fluoride

08 Recall
Healthy Patient = Happy Patient
- Schedule recall, frequency according to risk assessment
- Ask your patient if he or she liked the treatment

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Waiting is the Hardest Part

The next ping came in the middle of the night, nearly 12 hours after the team returned to Ultradent HQ. “About 8:30 the next morning I logged on and saw we got pinged starting about 2 in the morning. But they were very remote, and we wondered if it was right. The prediction calculator said it was supposed to be by Flaming Gorge and this was in the middle of the Uintas,” Simmons explains.

The prognosis for recovery was far from ideal—the payload landed deep in the mountains, not from the second highest peak in Utah. “The forest service told us it’s not accessible by car, it’s 10-12 miles in from the trailhead and they were sitting around 90 inches of snow at the time,” says Simmons. “We were like, OK, we need snowmobiles, snowshoes, cross country skis [. . .] we’re going to get this thing.”

“We knew we were going to get it, go rescue it. We were making jokes like ‘no VALO light left behind!’ but that’s when we realized there might be a real safety risk of getting stuck in the mountains. Flaming Gorge and this was in the middle of the Uintas,” Simmons explains.

Reconnaissance missions got underway while the team waited for the Reconnaissance missions got under- 

In the Wild

Back at Ultradent, the team regrouped and picked August 8, 2019 to set out and recover the payload.

Horses were enlisted to help the would-be mountaineers trek through the wilderness. The venture into the backcountry began exactly 99 days after the launch. It was a rainy morning and they arrived at the trailhead to find a water-logged path. After a few soggy hours of riding, the team made it to their picturesque day-one destination. “We spent the night at a place called Dead Horse Lake in the middle of the Uintas. Beautiful scenery,” says Simmons. “We put everything in slow motion, all angles from the cameras, sleuthing around. We saw the VALO light more than 17 weeks after it was launched again.”

Ultradent videographer David Landers succeeded where Brown’s recon efforts fell short. He was able to get fairly close to the landing zone and returned with a realistic perspective on what a retrieval mission might entail. “He came back and said, ‘it’s at least a two-day trip,’” Simmons says.

CSI – Crash Site Investigation

The video investigation got underway immediately, with all five cameras providing clues to the potential whereabouts of the missing VALO Grand curing light. The footage became Ultradent’s version of the Zapruder film.

“We started to dig into the videos, seeing the footage, and started determining that where the VALO light went down was not the final resting place of the payload box,” says Simmons. “We put everything in slow motion, all angles from the cameras, sleuthing around. We saw the VALO light detach right when the payload touched down.”

Frame by frame, the footage was examined and the team developed theories for where the VALO curing light came to rest. They didn’t know exactly where it was, but they knew they needed to go back to the landing zone to find it. “There was basically a 30-yard section of steep embankment, a 200-foot cliff, and 300-400 yards of very steep shale that we needed to search,” Simmons says.

“No VALO light left behind,” right?

Return to the Wild

Powered by dedication and persistence (and a desire to spend additional days in the woods instead of the office) the search party—now including Ultradent’s Kate Loyola—returned to the trailhead once more and began their journey toward Dead Horse Lake and the landing zone for the payload. They reached the campsite and decided to stop for an ever- 

‘No VALO light left behind,’ right?”

15-18 miles on a dusty road, after a three hour drive from Ultradent, and from the trailhead it was still 10 or 12 miles of hiking to where the payload landed. One Saturday I woke up early [. . .] I figured it’d be fine because I had a Jeep Grand Cherokee,” Brown says with a sarcastic grin. “I drove two miles on the dirt road and got stuck. I had to get pulled out by some mountain-dwelling locals. That was embarrassing. Then I got stuck again driving down the mountain and had to get pulled out again.”

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“I had a metal detector, and we were really concerned that we were going to have to scan all this shale with it,” Brown says.

Search number two got underway at sunrise, with the team determined to track down the missing VALO cur-

Avalanche...everyone was pretty excited,” says Brown. “I drove back and said, ‘if there’s no light...’ We were making jokes ‘we’re going to get this thing.”

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CSI – Crash Site Investigat-

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Control your entire implant and oral surgery motors using a single rotary knob. The new Chiroprós from Bien-Air Dental have been designed around a single philosophy: simplicity.
"When I saw photos of it I didn’t realize how large it is," says Loyola of the landing zone. "You see these boulders on the top of the mountain and you think they aren’t so big then you get up to them and they’re the size of a school bus."

The hunt was physically taxing but it soon provided hope—they found batteries that had been inside the payload box, but still no VALO curing light. “We also found a bell from a goat that’s probably long since been dead. A relic, it'll be in the Smithsonian later,” Brown recalls, smiling.

After several hours of searching with only batteries and a goat’s bell to show for their efforts, the team threw in the towel for the day without securing the VALO Grand curing light. They returned to camp to spend another night at Dead Horse Lake with one final day of searching ahead of them.

**Spotting the VALO Curing Light**

The next morning it was déjà vu at 12k feet as the crew hiked to the landing zone for the third time. When the batteries were found, the team had been searching the lower "bowl" section of the landing zone. Now they had to canvas the upper rim and slope. "When you're down in the lower part of the valley and you’re looking at the upper shelf, you don’t realize how steep it is," Simmons says, eyes wide.

"The enormity of it was so weird. When you’d look at it, you’d get this vertigo type feeling like from a Hitchcock movie," says Brown. "It was so steep, we were thinking, ‘can you even walk on that? Should we have brought rope to harness in?’"

It took 40 minutes just to hike to the top,” Simmons sighs. “We went to the very end of the cliff face and started to zig, zag back and forth and it was, horrible.”

Fortunately for the crew, they soon caught their biggest break yet. "Probably 15 minutes after we hiked up, I look down and 20–25 feet away from me, I see this metallic signature. I don’t see the VALO light, I see Dan Fischer’s signature," Simmons says with a visible glow. He enthusiastically blew his whistle and the crew scampered over to his location. Brown grabbed the VALO Grand curing light and as soon as he put batteries in, it gave off a BEEP, signaling it still worked. That seemingly innocuous BEEP cascaded unfiltered elation over the search crew as pride in the curing light’s durability flooded through them.

“I was yelling so loud, somebody else came over from a different mountain range thinking I was hurt. Full throated bellows,” Brown recounts, visibly relieved by the successful mission.

With the slog now finished, a victorious search team retreated from the landing zone for the final time, to proudly return the fully functional VALO Grand curing light to Ultradent HQ 126 days after it left.
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Smile rejuvenation with Biosmart restoratives

Dr. Hussein Naama
Alghadeer Center, Iraq

Introduction

Dentists today are spoilt for choice with a variety of direct and indirect treatment options for aesthetic restorations in the anterior zone. We are often challenged to create restorations that mimic natural teeth or enhance smiles to meet patient desires and expectations. I have recently adopted the Minimal Invasive Cosmetic Dentistry (MID®) concept introduced by Dr. Sushil Koirala which is based on a holistic patient-centric treatment approach that integrates minimally invasive treatment techniques with aesthetic dentistry to enhance the smile while taking into consideration the psychology, health, function and aesthetics of the patient.

Diastema or space between the teeth is a common dental condition that can create cosmetic issues in adults and often corrected with orthodontic treatment or indirect veneers.

The clinical case below highlights a different treatment approach where direct aesthetic restorations were selected after assessing the following 5 factors which we take into consideration when treatment planning in my practice: 1. Treatment longevity, 2. Cost estimation, 3. Vitality of the tooth, 4. Biological cost, 5. Expec-
tation of the patient.

To achieve predictable aesthetic outcomes when opting for diastema closure and smile rejuvenation with direct restorations, it is very important to understand the optical characteristics and properties of the composite material being used. For this clinical case I have used a BEAUTIFIL II LS reactive, low shrinkage composite resin with life-like aesthetics and high polishability to mimic nature with long-term predictability.

Patient Case

A 28 years old female patient visited our clinic requesting for a beautiful smile with less tooth destruction at a reasonable cost as the gap between her front teeth had affected her confidence to smile for a long time. Other dentists had suggested orthodontic treatment with indirect veneers which she had refused and was in search of an alternative option that would meet her needs.

Treatment Plan

The smile defects were determined upon careful clinical examination. The patient presented with reverse smile line and median diastema that needed cosmetic correction. A direct mock-up was planned as an initial step to help evaluate the patient perception and visual interpretation of the expected final outcome as there were limitations in the selected direct restorative approach to rejuvenate the patient’s smile.

Materials Used

After careful examination the following materials and composite shades were selected:

- Tooth preparation:
  - Fine Diamond points (Red band on the shank) and Super-Snap Violet Disk
  - Etching and Bonding – 37% Phosphoric acid and FL-Bond II
- Composite materials:
  - Palatal Shell - BEAUTIFIL II Enamel shade T
  - First Dentin layer - BEAUTIFIL II LS opaque shade A2D
  - Second Dentin layer - BEAUTIFIL II LS shade A2
  - Enamel Layer - BEAUTIFIL II Enamel shade HVT (High Value Translucency)
- Finishing & Polishing – Fine Diamond Points, Super-Snap X-treme Kit
- Super Polishing for high gloss – DirectDia polishing paste with Buff disk

Restorative Approach

Direct Mock-up and Shade Selection

Composite mock-up can be used as an aid in both diagnostic and aesthetic evaluation. In this instance, a prepless direct mock-up technique was selected with the aim of motivating the patient, evaluation of patient expectations by directly checking the smile design and to create the silicone index for fabrication of the palatal shell in the final restorations.

There are many different methods used for shade selection to achieve an accurate shade match with the natural tooth. In my practice, we prefer to use the direct technique for shade selection, where the enamel and dentin shades of composite materials are placed directly on the tooth surface and compared with the shade of the natural tooth. Shade selection procedure is completed with digital photogra-
phy taking into consideration the 3 dimensions of color with ‘Hue, Value and Chroma’

Clinical Tip: It is important to check occlusion and identify the high points using articulating paper to ensure that an accurate silicone index can be created for the palatal shell.

Fig 1a & 1b. Before and After smile rejuvenation with BioSmart restorative materials
Fig 2. Pre-operative diastema between upper central incisors
Fig 3. after prepless direct mock-up
Fig 4. Patient smile after direct mock-up
Fig 5. Occlusion and high points checked with articulating paper
Fig 6. Direct shade selection with Beaufitll II LS enamel and dentin shades
Fig 7. Preparation of enamel surface with Super-Snap Violet Disk
Fig 8. Selective etching of the enamel surface with Phosphoric Acid
Fig 9. Application of FL-Bond II bonding agent
Fig 10. Palatal shell coated with Beaufitll II Enamel shade T and incisal edge with Beaufitll II LS opaque shade A2D
Fig 11. Diastema closure with Beaufitll II LS shade A2 and Beaufitll II Enamel shade HVT
Fig 12. Build-up of incisal area of central incisors with Beaufitll II LS shade A2 and Beaufitll II Enamel shade HVT
Fig 13. Restored central incisors before finishing and polishing
Fig 14. Gross finishing with Fine Diamond Point (Red Band on the shank) at very low speed with no water
Fig 15. Marking of incisal line and macro anatomy
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Tooth Preparation
Rubber dam was placed from premolar to premolar to help isolate the teeth to enhance visibility and eliminate contamination with salivary fluid. The labial enamel surface of both central incisors were minimally prepared using Super-Snap Violet disk to seamlessly blend the restoration margins on both labial and palatal sides (Fig 7). Before proceeding with the adhesive step, it was important to protect the adjacent lateral incisor teeth with Selan tape.

Composite Build-up
After adhesive etching of the restorative enamel surface with Phosphoric acid (Fig 8), FI Bond II, a sixth generation 2-step adhesive system was selected. First the Primer was applied, left for 10 seconds and air dried; followed by the application of bonding agent which was light cured for 10 seconds. (Fig 9). The palatal shell was created with the silicone index using Beautifil II Enamel shade T. Beautifil II LS opaque shade A2D was placed on the incisal edge to achieve a natural halo effect for enhanced aesthetics. (Fig 10)

Diastema closure between central incisors was completed using the naturanometric layering technique with incremental build up and 10 second light-cure. The dentin layer was created using Beautifil II A2 followed by Beautifil II enamel high value translucent shade HVT (Fig 11). For the incisal surface build-up, a thin layer of Beautifil II LS shade A2 was used followed by Beautifil II enamel shade HVT (Fig 12). The restored central incisors after composite build-up demonstrated that life like aesthetics had been achieved successfully. (Fig 13).

Finishing and Polishing Protocol
Selection of the right tools for finishing and polishing of direct composite restorations to a high gloss, still remains a challenge for many clinicians. It is always helpful to identify a predictable finishing and polishing protocol for your composite material, that would help to achieve the desired final surface luster while saving valuable chair time. For this case, after final light-cure and rubber dam removal, the gross finishing was done using a Fine Diamond Point (Red band on the shank) at very low speed with no water to smoothen the restorative surface. (Fig 14). The mesial line angles and macro anatomy was marked using a Vent water spray (Fig 15). The anatomical contouring of line angles and labial grooves were completed using a tapered fissure Fine Diamond Point (Red band on the shank) with intermittent water spray (Fig 16, 17). Dura Green stone was used to smoothen the labial grooves. (Fig 18)

Polishing of the restoration was completed using a tapered fissure Fine Diamond Point polishing paste and a buff disk. (Fig 19)

Clinical Tip: Spend time to achieve the accurate shade match and tooth anatomy during the composite build-up phase to save chair time.

Final Tip: Time to achieve the accurate shade match and tooth anatomy during the composite build-up phase to save chair time.

Conclusion
The above clinical case illustrates that optimal life-like restorations can be achieved using BioSmart composite material with predictable aesthetics and function. By adopting the Minimally Invasive Cosmetic Dentistry (MiCD) concept and treatment protocols, we have been able to provide patients with direct restorative treatment options that exceeds their expectations while preserving natural tooth structure. The inclusion of Beautifil II LS and Beautifil II enamel range of composites with a predictable finishing and polishing protocol has helped to maximize armamentarium and meet patient’s aesthetic demands more efficiently in my daily clinical practice. (Fig 20,21)

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By mectron s.p.a.

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By Dentsply Sirona

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By Dentsply Sirona

With the new Neo Spectra ST composite portfolio, dentists can now find the full range of handling preferences and esthetic needs covered by a single product line. Thanks to SphereTEC filler technology, the portfolio offers optimized performance in the areas that matter most, helping clinicians to achieve reliable esthetic results efficiently.

Dentsply Sirona’s latest innovation in composite filler technology, SphereTEC, was introduced to dentistry in 2015. SphereTEC fillers are spherical-shaped, pre-polymerised fillers created from sub-micron barium glass. Their morphology, particle size distribution, and surface microstructure deliver the benefits that matter most to dentists. Over 24 million restorations after the new technology’s debut, Dentsply Sirona introduces an expanded portfolio with SphereTEC technology. Clinicians can now enjoy SphereTEC technology benefits in all composite cases with the comprehensive Neo Spectra ST portfolio. Neo, meaning ‘new’ or ‘revised’ emphasizes the modern, cutting-edge approach taken to optimize our composite portfolio. Neo Spectra ST explains the portfolio’s coverage of the full range of handling preferences and esthetic needs optimized with SphereTEC (ST) technology.

Covers the Full Range of Handling Preferences

Dentsply Sirona recognizes that every clinician is unique and when it comes to composites, so are their handling preferences. That’s why the Neo Spectra ST composite portfolio was designed to cover a full range of handling options, enabling clinicians to select their preferred viscosity for placement ease and efficiency. Neo Spectra ST High-Viscosity (HV) universal composite has a firm, packable handling, while the Low-Viscosity (LV) option offers a creamy, spreadable handling. Thanks to SphereTEC technology, both the HV and LV universal composite viscosities are non-sticky to the instrument, easy to adapt, sculpt, and shape, and are resistant to slumping. For applications where higher flowability is preferred, the nanofillers in Neo Spectra ST Flow help to create a versatile, thixotropic ‘flow on-demand’ handling that stays put until the user initiates the flow. Each of the three viscosities offers proven durability, excellent chromatic blending ability, high polish and stain resistance.

The SpherTEC revolution continues...

Introducing the complete Neo Spectra ST composite portfolio for efficient esthetics.

Covering the Full Range of Esthetic Needs

In addition to satisfying the range of handling preferences, the Neo Spectra ST composite portfolio makes it easy to achieve natural esthetic results with a streamlined shade inventory and simplified techniques. The unique construction of SphereTEC fillers creates an excellent chameleon shade blending effect that enables five shades A1 to A4, called universal CLOUD shades, to cover the entire Vita® Classic range, and satisfy the esthetic demands for the vast majority of cases with a single shade. One additional shade, BW (bleach white), is also available for restoration of bleached teeth. For esthetically demanding anterior cases, Neo Spectra ST Effects offers two opaque dentin shades and one translucent enamel shade that work together in a simplified layering technique with Neo Spectra ST universal CLOUD shades. The simplified shade concept and layering technique result in streamlined composite inventory while ensuring reliable, highly aesthetic clinical results. The unique structure of SphereTEC fillers also maximizes composite strength and durability, while their sub-micron primary particle size ensures excellent polishability.

For further information about Neo Spectra ST composites available from Dentsply Sirona, please contact your local Dentsply Sirona representative or visit our website www.dentsplysirona.com

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ML420155M (12-7-18)
The reality is that digital dental technology has now become user-friendly and affordable enough to be adopted by anyone who wants to access its benefits. Clinics and labs of all sizes are unlocking substantial efficiency and productivity gains with no compromise in quality. In fact, many digital workflow users credit digital dentistry tools with contributing to improved quality in care due to the level of precision that is now possible, and the fidelity of planned versus actual outcomes.

Digital scans and digital designs fuel accurate digital production that increasingly requires less and less post-processing before next steps can be taken. This is true for everything from prosthodontic models to long-term, full arch dentures. These advancements are exciting and beneficial to everyone involved. Labs can handle higher volumes, practitioners can expand in-house services, and patients can get precise treatment faster, with fewer visits.

For instance, the new capabilities in 3D printing speed make it possible for clinicians to deliver complete restorations within a single appointment that have historically required multiple visits. On the NextDent 5000, for example, it is now possible to 3D print a full arch in half an hour or less. For practitioners, this means the ability to see more patients over time while offering a more convenient, expedited treatment experience. For patients, the integration of this technology means fewer scheduling conflicts and life disruptions to address their concerns.

For dental laboratories of all sizes, increases in digital production speeds are of tremendous value. Large laboratories are able to increase productivity to keep production volumes up, and small laboratories are able to avoid backlogs to maintain availability to take on new jobs. Fast and highly accurate 3D printing also enables superior communication between dentists and laboratories to enable streamlined restoration fabrication and delivery and increased patient satisfaction. The expedient input to output loop created by the digital dentistry workflow is more comfortable and convenient to the patient than the traditional processes it replaces. Furthermore, digital precision at every stage gives care providers higher confidence in fit. The author of this piece has first-hand experience to support these statements, as I was one of the first patients to receive a 3D printed restoration. I had a tooth replaced in 2016 using 3D printing, and it works and looks as great as it did on day one!

As dentistry and 3D printing continue to evolve and synergize, my experience is becoming less and less unique, which I view as a wonderful thing. From high production labs where large volumes of unique parts must be fabricated quickly, to private clinics where the provider wants to enhance patient experience with high quality expedited treatment: 3D printing technology is leading a transformation in dental occupations that allows everybody to win.

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**NEWS**

recorded brushing sessions. Oral-B iO has a simple and intuitive user interface that guides consumers through a two-minute brushing session with 3D teeth tracking to ensure a professional clean feeling every time.

"Oral-B iO goes beyond being a new toothbrush – it is an innovative brushing technology with a truly sensual experience that users will feel, hear and see, transforming the act of brushing teeth from something they have to do into something they actually want to do," said Lisa Ernst, P&G VP Global Health Care R&D. "Six years of dedicated research were undertaken with dental professionals to discover a wholly original brushing experience."

In clinical tests, Oral-B iO provided a deeper cleaning of teeth and gums, allowing users to easily and effectively maintain oral health. When compared to manual toothbrushes, Oral-B iO users experienced:

- 100 percent healthier gums in just one week
- Six times more plaque removal along the gumline
- 83 percent of gingivitis patients moved from unhealthy to healthy gums in eight weeks

The new Oral-B iO will be available for purchase beginning in August 2020. For more information about Oral-B iO, visit oralb.io. To join the Oral-B iO waitlist and be among the first to receive it, visit oralb.io/signup.