

DENTAL TRIBUNE

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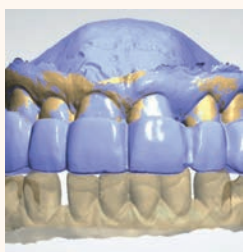
VOL. 15, No. 1+2



INTERVIEW

Book author and anthropologist Prof. Debbie Guatelli-Steinberg about the link between human living conditions and tooth and jaw development.

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HYBRID CERAMICS

This case describes the non-invasive use of a CAD/CAM material for treating a patient with severe temporomandibular joint dysfunction.

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ORTHO TRIBUNE

Read the latest news about products and clinical developments from the field of orthodontics in our specialty section included in this issue.

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Adapting treatment planning

By DTI

XI'AN, China: A Chinese study comparing implant stability and peri-implant tissue response in heavy smokers and non-smokers has found that smoking did not affect the overall success of implant surgery. However, smoking did cause the bone around the implants to heal more slowly; thus, implants began to osseointegrate considerably later than in the non-smoking group.

In the study, 45 ITI (Straumann) implants were placed in the partially edentulous posterior mandibles of 32 male patients, of whom 16 were heavy smokers and 16 did not smoke at all. Implant stability and peri-implant tissue response were assessed at three, four, six, eight and 12 weeks post-surgery.

Although implants in both groups achieved osseointegration by the end of the 12th week, the healing process differed significantly between non-smokers and



As heavy smoking can cause peri-implant bone to heal more slowly, surgeons should consider adapting implant loading planning to smokers, a new study has found.

heavy smokers. In non-smokers, stability improved and implants began to better integrate into the bone after the second week. In the smoking group, however, implants only began to osseointegrate and become more stable after the third week. In light of the findings, the researchers suggested that surgeons might need

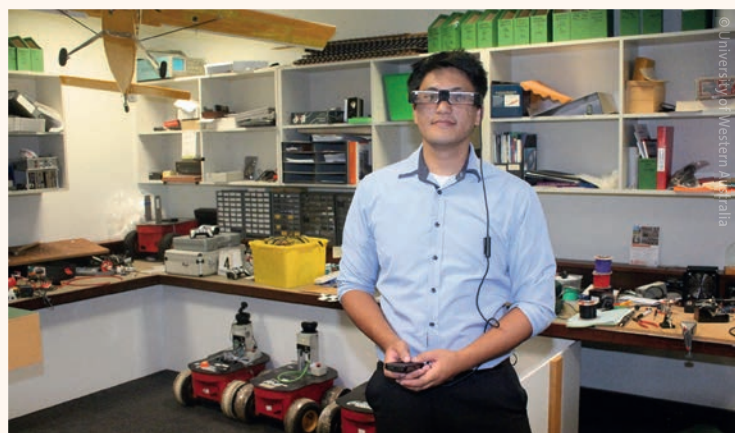
to change their standard implant loading schedule for patients who smoke heavily. In addition, smokers should be aware that their habit promotes the loss of marginal bone and the further development of dental pockets and could thereby lead to complications even after osseointegration, they concluded.

The study, titled "Effect of heavy smoking on dental implants placed in male patients posterior mandibles: A prospective clinical study", was conducted by researchers at the First Affiliated Hospital of Xi'an Jiaotong University in Xi'an in China. The results were published in the December 2016 issue of the *Journal of Oral Implantology*.

Love and teeth

BRISBANE, Australia: Research from the University of Queensland (UQ) has suggested a link between a healthy love life and good teeth. The study built on previous research in adult attachment theory and found that being in a trusting and happy relationship is more likely to encourage regular dental check-ups. "We determined that those who tended to avoid emotional intimacy, or worried their partner would not be available to them in times of need, were more likely to have negative oral health outcomes," UQ researcher Grace Branjerdporn said.

The study examined a group of 265 people and found that financial factors played a surprisingly small role in oral health behaviours. With many participants covered by private health insurance (and thus able to access dental care cheaply), motivation primarily came from factors like aesthetic appearance rather than affordability.



Australian researcher Marcus Pham demonstrates augmented reality glasses for improved dental procedures.

► ASIA PACIFIC NEWS Page 2

Better primary care

In an effort to enhance medical infrastructure in New Delhi, the Aam Aadmi government has announced to set up around one hundred new dental clinics. They will offer minor procedures and consultation services for oral diseases and will be located near existing Mohalla clinics.

Gonorrhoea prevention

Gargling with an alcohol-containing mouthwash could be a cheap and effective means of curbing the spread of gonorrhoea among men, Australian researchers have found. In the study, daily mouthwash use significantly inhibited the growth of the bacteria responsible for the infection.

Powdered gloves banned

The US Food and Drug Administration (FDA) has issued a final rule banning the use of most powdered medical gloves in the country. "While use of these gloves is decreasing, they pose an unreasonable and substantial risk of illness or injury to health care providers, patients and other individuals who are exposed to them, which cannot be corrected through new or updated labeling," the agency said when proposing the ban in March 2016.

According to the FDA, the powder that is sometimes added to natural rubber latex gloves to make them easier to put on and take off can carry proteins that may cause respiratory allergic reactions.



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Augmented reality for dental use

By DTI

PERTH, Australia: An innovative team of researchers at the University of Western Australia (UWA) has developed augmented reality glasses that are designed to help dental students learn more efficiently, improve their handling of procedures and reduce teaching costs. The technology used for the glasses is in its final stage of development and is currently being trialled by students and professors at the university.

The team responsible for developing the device has already been recognised for their potentially revolutionary approach with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) selecting them for inclusion in their prestigious ON Accelerate program. ON Accelerate aims to reward innovation in research, science and business and will provide the researchers with the necessary resources to ideally make their invention available commercially.

Augmented reality (AR) is a type of virtual reality that involves

semi-transparent, computer-generated imagery that is superimposed on the user's view of the real world. This allows them to view both frames of reference simultaneously. Currently, dental students undergo training to acquire manual skills with the close supervision of their educator, which can be overly time-consuming. The technology's lead developer, UWA student and researcher Marcus Pham, said that the glasses aim to address this inefficiency.

"A big problem at the moment is the amount of interruptions dentists face when performing procedures, with an estimated 20 per cent of their day spent carrying out non-clinical tasks and a significant amount of time spent away from patients during a procedure to review critical information," Pham said.

"The technology we are developing will change this by providing



Prof. Paul Ichim and Marcus Pham demonstrating the device.

dentists with all the information they need without them having to interrupt a procedure, so they can focus entirely on the patient."

"This means the time taken to carry out procedures will be drastically reduced and the quality of the dental work will improve."

The integration of digital workflows into dental practices has continued to increase in frequency. AR technology has only been used in dental education since 2005, but it is positioned to play an increasingly more prominent role given how complex and demanding dentistry training can be. One of the main benefits of AR is that it allows for dentists to have relevant information displayed right in front of their eyes, instead of having to continuously refer to a computer. This enables students to apply their learned concepts to practical situations more easily and learn the appropriate dental techniques faster.

The AR glasses will also allow the instructing dentists to reduce the amount of time spent with each patient as they can supervise multiple students at one time. Comparative clinical testing was scheduled to begin in January 2017 and the UWA's dentistry school is expected to officially incorporate the use of the glasses by the middle of the year.

Apps for better oral hygiene habits

By Kristin Hübner, DTI

Developed for his daughter to help her focus on her daily dental care regimen, Japanese dentist Dr Kiyoshi Amano's successful tooth-brushing app Brush'n'Save was first launched in Japan in 2014. The English version of the app is now to be released in about 130 countries. *Dental Tribune* had the chance to speak to Amano about how the app playfully helps children, and adults alike, develop a greater interest in oral hygiene and improve their daily brushing habits.

Dental Tribune: What gave you the idea to develop the app?

Dr Kiyoshi Amano: My daughter was in grade 9 at the time. She had never had a cavity, partly because I had always been after her to brush her teeth from the time she was a little girl, but as kids get older, they no longer want to hear what their parents have to say. She would stay up late playing with her smartphone and often she would go to sleep without brushing, which meant she was at a much greater risk of developing cavities. I knew I needed to come up with something that would encourage her to brush on her own. I had the idea of combining brushing teeth with things my daughter would enjoy and I set out to create Brush'n'Save, a tooth-brushing app on your smartphone, where the user can earn and save money by brushing their teeth.

How did you get started with the process?

First, I checked out some existing tooth-brushing apps and what I found was that there were many apps available, but they were all aimed at kids or were too game-like.



Dr Kiyoshi Amano

There were no apps available that would likely be used by teens or adults. For Brush'n'Save, I thought about how to develop an app that even adults could use and one that would encourage my daughter to keep brushing in the long run.

What were the most important features you wanted the app to have?

First of all, I thought it should help people stay motivated to brush their teeth. Next, it was important to present simple, effective tooth-brushing methods in a way that would appeal even to

teenagers, so they could brush along with the app and get their teeth clean all over, thereby avoiding cavities and periodontal disease their entire lives. I also wanted it to be a full-featured app with something for adults too. For example, I wanted to include information about optimal brushing time and give a detailed look at good brushing motion.

How long did the development take and when was the app launched in Japan?

It took six months to develop and the app was released in Japan in October 2014.

Once it was launched, how was it received by users—and most importantly, did you daughter like it?

User response was very positive and the app got many favourable reviews. Many people with children expressed their appreciation. The app also got many good reviews from other adult users who said it helped them get their teeth really clean and that they use the app every day. Many dentists and dental hygienists have also told me that Brush'n'Save is the tooth-brushing app that they recommend to their patients—adults and children alike.

As for my daughter, when she heard that the app was being developed for her, she thought the idea was kind of silly, but her attitude changed when she learned that she could earn money by brushing with the app on a daily basis. *(Editor's note: With the optional savings*

function, parents can reward their children for continuing to brush with the app for a certain period of time without skipping. The reward can be set in the form of actual money or other treats.) And then, just as I'd hoped, she started using the app every day, brushing toward the target of that monetary reward. By developing good daily brushing habits, I think she developed a greater interest in oral hygiene.

The English version of the app will now be available globally. Do you think that applications such as Brush'n'Save will become more important—or even routine—for people's personal oral hygiene?

While tooth brushing is something that most people around the world do every day, many don't brush properly. Rather, they do it their own way and do an imperfect job. The result is that many people still suffer from cavities and periodontal disease, so I hope that apps like Brush'n'Save can help people develop better, and the correct, oral hygiene habits.

As a practicing dentist, what do you think is key when it comes to education about the importance of oral hygiene, and most importantly, motivating people to brush regularly?

I think it is critical that people are motivated to brush at the same time each day, using good brushing techniques. I think this encourages them to take an interest in maintaining their own oral hygiene.

Thank you very much for the interview.

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Oral bacteria, cerebral microbleeds and stroke linked

By DTI

KYOTO, Japan: Cerebral microbleeds (CMBs) have attracted attention as an important predictive marker of stroke in several studies. Research further suggests that *cnm*-positive *Streptococcus mutans*, a type of oral bacteria associated with dental caries, is involved in the development of CMBs.

Seeking to clarify the connection, a team of Japanese researchers has now found evidence that *cnm*-positive *S. mutans* is a novel factor of cognitive impairment associated with CMBs and therefore may be linked to disorders such as stroke and dementia.

Aiming to understand the clinical significance of CMBs and the mechanisms of their production, researchers from Kyoto Prefectural University of Medicine examined 279 patients (average age of 70) for the presence or absence of the collagen-binding surface Cnm protein expressed on *cnm*-positive *S. mutans* in the saliva. In addition, cognitive function, dental health status and the prevalence of CMB were assessed. Oral examination included the number of remaining teeth, presence or absence of dental caries, and periodontal status of the participants.

In the study group, 94 per cent tested positive for *S. mutans* and 33 per cent for *cnm*-positive *S. mutans*, and 25 per cent showed collagen-binding activity associated with *S. mutans*. Magnetic resonance imaging of the brain detected CMBs in 73 participants (26 per cent). As for the dental examination, 31 per cent of the participants had dental caries and 28 per cent scored a Code 3 or higher on the Community Periodontal Index of Treatment Needs. The mean number of remaining teeth was 22.7 ± 7.5 .

The analyses showed that *cnm*-positive *S. mutans* was detected more often among participants with CMBs than those without. Furthermore, the percentage of dental caries patients was significantly higher in the collagen-binding activity group, the study found.

According to the researchers, the findings suggest a molecular mechanism for the interaction between chronic oral infections and geriatric disorders, such as stroke and cognitive impairment. In order to clarify the causality, an intervention study focused on oral care and the microbiota in CMB subjects would be of interest, they emphasised. As the current data supports the important in-

fluence of the oral microbiota on neurological disease, they further called for improved collaboration between dental and medical researchers.

The study, titled "Oral *cnm*-positive *Streptococcus mutans* expressing collagen binding activity is a risk factor for cerebral microbleeds and cognitive impairment",

was published online on in the *Scientific Reports* journal.

CMBs have attracted attention as an important predictive marker of stroke.



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“Essentially, we are not adapted to the diets we eat today”

An interview with Prof. Debbie Guatelli-Steinberg, US

By Kristin Hübner, DTI

In her book *What Teeth Reveal About Human Evolution* (Cambridge University Press, 2016), anthropologist Prof. Debbie Guatelli-Steinberg describes what fossilised teeth reveal about history and the living conditions of our ancestors. One finding is that the high proportion of soft and sugary food people consume in the Western world these days is to blame for the steady rise of dental problems such as dental decay and malocclusion. *Dental Tribune* had the opportunity to speak to the Ohio State University professor about the causes of this development and the impact her research may have on modern life.



Prof. Debbie Guatelli-Steinberg

Dental Tribune: Prof. Guatelli-Steinberg, you are studying fossilised teeth in order to shed light on the living conditions of our ancestors. What can teeth reveal about earlier life and human evolution?

Prof. Guatelli-Steinberg: Teeth make up most of the mammalian fossil record, and this is true for human evolution as well. The reason: teeth are heavily mineralised, so they resist destruction and decomposition. The fact that teeth are likely to fossilise is extremely convenient for physical anthropologists because teeth lock detailed information about diet and

dental development is linked to the development of the organism as a whole, it has been possible to use the pace of dental growth and development to gauge the evolution of the protracted childhoods that are a unique feature of humans among other primates. It is even possible, and much of my own research is about this, to use growth lines in teeth to assess the timing and duration of enamel growth disruption, providing insight into periods of physiological stress (malnutrition, illness) in the individual lives of our ancestors.

ment in teeth or about the morphology of teeth, but that information requires a broader context for interpretation. For example, human first molars erupt at around six years of age, but that fact does not tell one much unless one compares it with other mammals, especially non-human primates. Dogs grow up fast and their first permanent teeth erupt around six months of age. They also mature and die much earlier than we do (which is sad for dog owners). Chimps erupt their first molars more on the order of four years of age and do not appear to have natural lifespans that are as long as ours. In other words, rates of dental development reflect the developmental rates of species, but we would not really know that unless we compared humans to other primates. This applies to fossil teeth too: we need a broader comparative context to understand the indications they give us.

In your new book, you say that our teeth were adapted for a very different diet than the one we eat in Western societies today. Could you explain that briefly? What are the (negative) consequences of this change in diet?

Would you say that today's dental problems, such as the high prevalence of dental caries and periodontal disease, are man-made evolutionary developments?

Well, it is possible to find dental pathologies in ancient hominin fossils, but only in a handful of individuals. So, I would say that, although dental pathologies did occur early in human evolution, they were nowhere nearly as frequent as they are today.

Why is that? When considering that there were no dentists or even oral hygiene products around, one imagines our ancestors must have been toothless by their mid-20s.

With the softer, more cariogenic foods eaten in an agricultural diet, the oral bacterial environment changed. One scientist, Dr Christina Adler, from the University of Adelaide and her colleagues, sequenced bacterial DNA obtained from dental calculus adhering to the teeth of early hunter-gatherer and early European agriculturalists. What they found was that, with this change in the oral environment, and later with the production of processed sugar during the Industrial Revolution, the diversity of oral flora decreased, with caries-causing strains becoming predominant. Essentially, the oral environment had changed to provide

were introduced to processed foods and sugary sodas, and then their rates of caries increased dramatically.

I have read that breastfeeding provides optimal oral mechanical stimulation for the jaw's normal development. Given the decrease in breastfeeding, could that mean modern children are at a higher risk of developing malocclusion and requiring orthodontic treatment?

That is a great question, but as I am not a dental practitioner, I do not have a great answer! I can tell you that Prof. Robert Corruccini's pioneering experimental studies on baboons (which rarely show malocclusions) showed that soft diets led to dental crowding and rotations of teeth. Essentially, without foods that were hard or tough, bone growth in the baboon jaw was not great enough to accommodate the animal's teeth.

What role does genetics play in influencing teeth, oral health and jaw development? Since evolution is a process of hundreds and thousands of years, it is probably not possible to turn back the wheel of time just by sticking to a certain diet.

“The oral environment had changed to provide an optimal environment for caries-causing strains to flourish.”

growth into their physical and chemical structure. The book is meant to synthesise insights into human evolution that researchers have gleaned from teeth—those insights include the recognition that human diets began to diversify early in hominin evolution, making it possible for our lineage to ride out fluctuations in food availability.

From daily growth lines in teeth, researchers have been able to calculate the length of time teeth took to develop and erupt into the oral cavity. And, since

What sparked your interest in this field of research initially?

I have always had an interest in human evolution and non-human primates, and when I began my doctoral program at the University of Oregon, I met Prof. John Lukacs, who used teeth to answer questions related to these topics. This seemed like a really fascinating thing to me—that one could find out so much from fossil teeth.

How does one decode the information garnered from fossilised teeth?

One can gain information about growth rates and develop-

Yes. Over most of our evolutionary history (until the rise of agriculture around 10,000 years ago), we humans were foragers, eating food that could be gathered or hunted. Those kinds of foods are the foods that our teeth are adapted to eat. With the rise of agriculture, and particularly with the more recent introduction of processed and sugary foods into the diet, there was an enormous increase in dental malocclusion and pathology. Essentially, we are not adapted to the diets we eat today, as these dietary changes are quite recent in our evolutionary history.

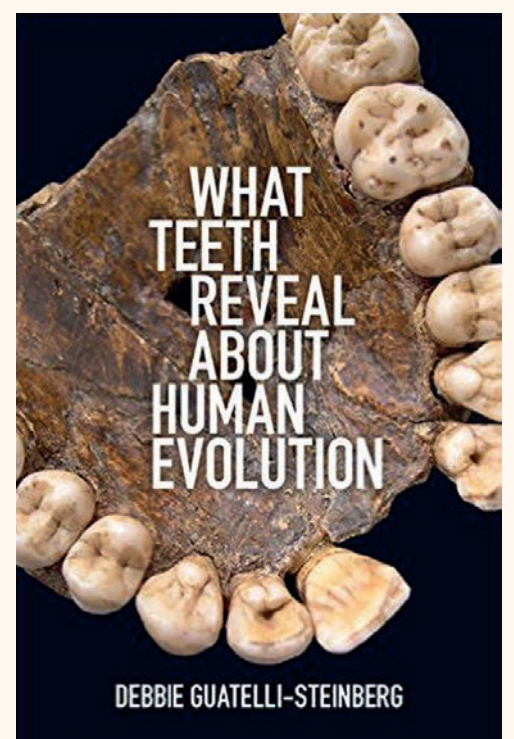
an optimal environment for caries-causing strains to flourish.

How about primitive tribes that are largely untouched by civilisation even today. Is their dental status significantly better than that of people living in industrial regions?

When people who were not eating a Western processed and sugary diet are all of a sudden introduced to one, their rates of dental disease go up. So, for example, native Eskimos had very little by way of dental caries until they

Certainly, genetics plays a role. Some individuals are more prone to dental disease than others, but what one eats also plays a role. As far as that goes, there is no perfect diet, but diets that are low in sugar and eating tough foods that may stimulate jaw growth during childhood might help to alleviate our dental problems.

Thank you very much for the interview.



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Measuring implant stability with the W&H Osstell ISQ module

By DTI

BÜRMOOS, Austria: With the exclusive integration of the Osstell ISQ (Implant Stability Quotient) module, W&H is offering users a unique system for the measuring of implant stability. In combination with the company's improved Implantmed functionalities, the Osstell ISQ module ensures added certainty and reliability in the evaluation of the treatment success by offering the surgeon the ability to monitor the status of osseointegration continuously and document it, along with the torque.

Determining the optimal time to load an implant is complex, since one must take into account all key parameters and the pa-

tient's risk factors. The retrofittable Osstell ISQ module allows the surgeon to benefit from a unique system for measuring implant stability. While Implantmed's integrated automatic thread-cutter function and the torque



Simply and quickly retrofitted at any time—the W&H Osstell ISQ module.

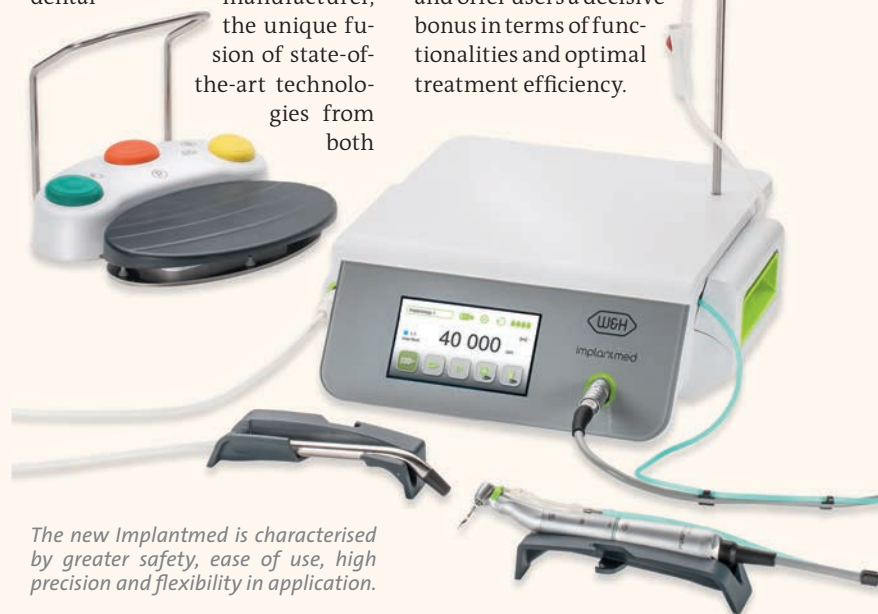
control help the dentist during placement of implants, the ISQ module makes it easier to determine the optimal loading time.

According to the company, the stability value measured by the device helps improve the success rate of quality assurance. With this non-invasive system, it is possible to determine the primary stability of implants, but also monitor the osseointegration using secondary measurements and determine the optimal point in time for loading the implant. The ISQ value (scale of 1–100) is shown on the display after the measurement has been taken and is easy to interpret.

Implantmed's documentation function allows convenient saving of all values of the implant placement to a USB stick. The W&H Osstell ISQ module is optional and

can be retrofitted by simply connecting it to the new Implantmed at a later point in time.

According to the Austrian dental manufacturer, the unique fusion of state-of-the-art technologies from both



The new Implantmed is characterised by greater safety, ease of use, high precision and flexibility in application.

companies, W&H and Osstell, has made it possible to set new benchmarks in the international dental market and offer users a decisive bonus in terms of functionalities and optimal treatment efficiency.

Ivoclar introduces new dental platform

By DTI

SCHAAN, Liechtenstein: With the launch of a new online platform, dental manufacturer Ivoclar Vivadent aims to provide dentists and dental technicians with continually updated information and news about industry trends and the latest products. Through two profession-specific blogs hosted on the platform, the company further seeks to answer specific user questions and foster a lively exchange within the dental community.

"The main focus of the blog is the readers' benefit—both for daily work as well as fundamental questions, for example good laboratory or dental office strategies. Fascinatingly presented and with a wide variety of topics, the contributions are supplemented on a weekly basis," said Nicole van Oers, Communications Director at Ivoclar Vivadent.

The topics addressed in the respective blogs cover different areas of dentistry, such as aesthetics, digital development and



Aiming to establish a lively online community, Ivoclar Vivadent has launched two new blogs—one for dental technicians and one for dentists.

materials, and often provide additional content, including downloads of scientific publications and explanatory videos.

In its present form, the platform has been online since September 2016. The blogs are published in five languages (English, German, French, Italian and Spanish) and can be assessed at blog.ivoclarvivadent.com. Users who subscribe to the free blog newsletter will be informed as soon as new posts are available, the company stated.

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MIS announces release of B+ implant surface

By DTI

BAR-LEV, Israel: This March, MIS Implants Technologies is officially launching its latest in implant engineering, the B+ implant surface treatment, at the International Dental Show in Cologne. The B+ layer bonds chemically with the surface of the titanium dioxide of an implant and integrates perfectly with existing and newly forming bone, achieving greater initial osseointegration and longer-term stability.

directly into the surface of the implant, which is unaffected by the oral environment and has been proved very stable in different pH levels.

“With the initial results from testing of the B+ surface, it was discovered that, for the first time, specific biochemical bonding can be obtained already at the very

early healing phase after implantation,” Aronsson said.

MIS was very excited to learn about these discoveries and immediately saw the potential for a major breakthrough. Having been seeking a suitable company to partner with, Aronsson and his team were equally enthusiastic about embarking on the commercialisation phase with a company able to achieve rapid implementation in clinical practice and with

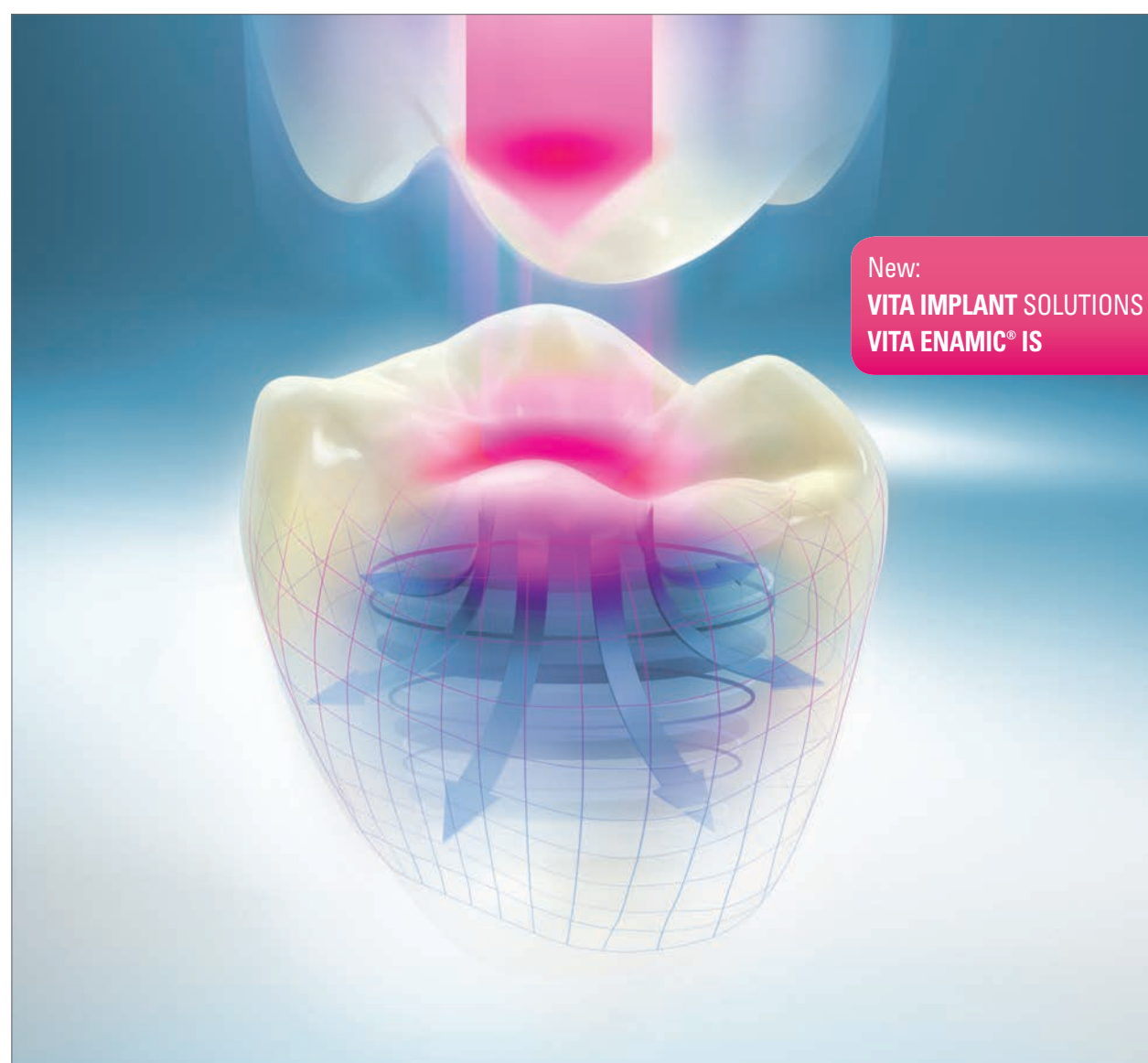
a strong position in the market to advance their product.

Most recently, MIS has launched a user experience project involving 250 participants worldwide, who will be placing ten implants each with the B+ surface and reporting their experiences. The results of studies conducted by Aronsson and his team are extremely promising and both partners are exploring future applications for this advancement.

AD

VITA ENAMIC® redefines load capacity.*

The first ceramic with dual network structure for unsurpassed absorption of masticatory forces



New:
VITA IMPLANT SOLUTIONS
VITA ENAMIC® IS



3522E



VITA ENAMIC®

- enormous load capacity since masticatory forces are absorbed
- reduction of wall thickness possible to achieve restorations that require minimal preparation
- highly precise and particularly accurate results
- tooth-like material properties
- fast and easy to process with no furnace required

*) In addition to a high degree of elasticity, this innovative hybrid ceramic guarantees outstanding load capacity after adhesive bonding.

Dr Björn-Owe Aronsson, who developed this unique surface together with his team at Nano Bridging Molecules, has presented case studies in which B+ proved very efficient in maintaining the bone level over time. This is particularly beneficial for patients with compromised bone healing and poor blood supply. The specific bone-bonding properties of the surface have proved to produce greater fixation of the implant in the early stages post-placement, as well as greater stability later on.

Aronsson explains: “Titanium is used as implant material due to its inertness and high acceptance by the body. Over the years, however, a wish for faster and more predictable integration with the bone has been driving research on the importance of the surface structural and chemical properties.”

The surface consists of a monolayer of multi-phosphonate molecules. These have a very high affinity to titanium dioxide, enabling a true covalent bond. The unique properties of this layer also make it extremely hydrophilic, which facilitates the colonisation of cells on the surface naturally. Research has even shown that blood vessels grow

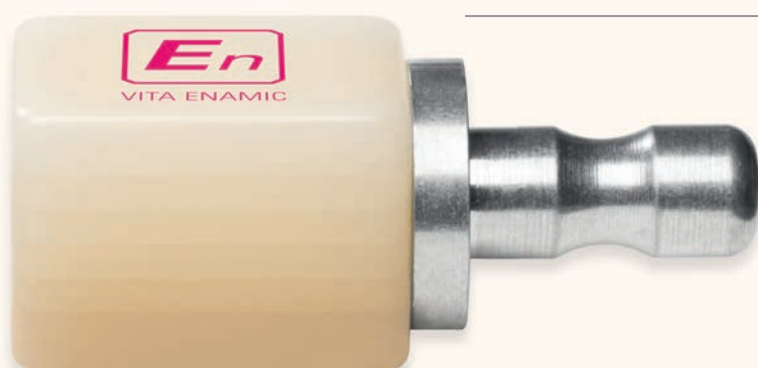
VITA Zahnfabrik to present innovative clinical solutions at IDS 2017

At the 2017 International Dental Show (IDS) in Cologne in Germany, VITA Zahnfabrik will present new process-safe solutions for highly aesthetic results, as well as efficient and smooth clinical workflows.

High-end aesthetics: VITA ENAMIC multiColor and Super Translucent

VITA ENAMIC has established itself as a solution for functional restorations since 2013. At this year's IDS, the reliable material will attract attention with its integrated natural colour gradient in six layers, from the cervical area to incisal area: VITA ENAMIC multiColor.

AD



With its integrated natural colour gradient in six layers, VITA ENAMIC multiColor is suitable for aesthetic single-tooth restorations in the anterior and molar regions.

The dual ceramic-polymer network makes aesthetic single-tooth restorations in the anterior and molar regions possible. VITA

ENAMIC ST (Super Translucent) is ideally suited for veneers, inlays and restorations in enamel. The solid material can be milled as usual and manufactured without any firing. It offers all of the clinical advantages of VITA ENAMIC: a pre-sintered, porous, fine-structure feldspathic ceramic block

“The work-flow for monolithic ceramic restorations remains in the dentist's hands.”

(86 per cent by weight) is infiltrated with a polymer (14 per cent by weight). Its thin layer thickness allows for both minimally invasive and non-invasive rehabilitation. Masticatory forces are absorbed owing to the dentine-like flexibility, while ceramic crack growth is stopped at the interface with the polymer network. In this manner, durable restorations are guaranteed.

VITA SMART.FIRE: Small furnace, large effect

VITA's space-saving furnace for the dental practice allows for more efficient ceramic chairside restorations. The miniature vacuum furnace has been optimised for the requirements of chairside applications and the particular needs of dentists. Owing to its intuitive user interface, crystallisation

Material-specific cementation that is easy, complete and systematic

Different indirect restorative materials follow various cementation protocols. The hydrofluoric acid may come from one supplier, the cementation composite from another and silane from yet another. This leads to full drawers and fridges resembling a rather messy storeroom. With the VITA ADIVA LUTING SOLUTIONS cementation system, reliable bond strength is ensured and orderly storage facilitated. The luting system is specifically matched to all VITA materials and offers the complete range of provisional, self-adhesive and full-adhesive cementation. Furthermore, the systematic segmentation of the tray into “practitioner” and “assistant” provides a clear overview,



and glazing can be realised without any special background knowledge. The intuitive “touch & fire” application enables the dentist to select the material and navigate through the menu easily. After try-in and grinding, CAD/CAM-fabricated feldspathic and glass ceramics can be finalised independently. Stressful polishing chairside can be avoided, while the quality of the surface is optimised. This furnace gives the dentist greater independence from the laboratory. The workflow for monolithic ceramic restorations remains in the dentist's hands, from preparation, including intra-oral scans, to final insertion. The furnace makes treatment procedures more economical and is time-saving for patients.

Besides VITA ENAMIC multiColor, there is VITA ENAMIC ST. Being highly translucent, it is the perfect material for veneers, inlays and restorations in enamel.

particularly helpful in stressful situations. Its compact design makes the VITA ADIVA set a perfect space-saving companion that is always within reach. Moreover, VITA ADIVA is compatible with restorative materials from other manufacturers too.

For more information, visit VITA Zahnfabrik during IDS 2017 at **Booth D 010 in Hall 10.1**.

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