Combating peri-implantitis

By DTI

SEOUL, South Korea: The most common cause of peri-implantitis is the formation of a biofilm on the implant surface. Researchers in South Korea have now tested a novel surgical procedure and shown promising results in combating this inflammation.

In two case studies of male patients over the age of 50 who exhibited severe peri-implantitis, the clinicians used the R-Brush (Neobiotech), a round brush with titanium alloy bristles, to clean the affected implant surfaces. In addition, a regenerative approach incorporating bone grafting materials was used to rebuild the bone surrounding the implant.

The titanium brush proved to be highly effective at removing biofilm from the implant surface, the researchers noted. In addition to eliminating the contaminated original rough surface, the brush created a new rough implant surface. This newly created surface made the regenerative process more successful and predictable, the follow-up assessment at three, six and 12 months after treatment indicated. During the two-year follow-up, the bone level was maintained.

The results are in line with those of previous studies that have shown that re-osseointegration can occur on surfaces previously contaminated by dental plaque and surrounded by a bone defect. Although there is no similar protocol in the treatment of severe peri-implantitis yet, the two cases in which the R-Brush was used suggest that open debridement may result in re-osseointegration and that this integration may be more pronounced on a rougher implant surface, the researchers wrote.

The study, titled “Treatment of severe peri-implantitis using a round titanium brush to clean and modify the contaminated surfaces of an implant affected by severe peri-implantitis: a novel protocol in the treatment of severe peri-implantitis” was published in the June issue of the Journal of Oral Implantology.

Researchers in South Korea have described the protocol for using a newly developed round titanium brush to clean and modify the contaminated surfaces of an implant affected by severe peri-implantitis. Researchers in South Korea have described the protocol for using a newly developed round titanium brush to clean and modify the contaminated surfaces of an implant affected by severe peri-implantitis.
A sweet remedy? New lozenges aim to tackle dental caries

By DTI

OSAKA, Japan: Osaka-based confectionary company UHA Mika-kuto has introduced flavoured pastilles claimed to be helpful in maintaining a healthy oral flora. According to the company, its UHA dentaclear sweets contain a strain of lactic acid bacteria that is believed to effectively suppress the proliferation of pathogenic bacteria in the mouth and hence reduce the risk of dental caries.

The lozenges are available in yoghurt or clear mint flavour and have been available from Japanese chemists and convenience stores since June. According to UHA Mika-kuto, the incidence of caries and other oral diseases can be reduced by sucking the sweets after meals.

In addition to strains of Lactobacillus rhamnosus L810, the pastilles contain various sweeteners, including 0.85 g of xylitol per lozenge. Xylitol has been shown to have caries-preventive qualities, mainly because most plaque bacteria lack the ability to ferment xylitol into cariogenic end-products.

Other ingredients include crystalline cellulose, fine silicon dioxide and green tea extract.

UHA Mika-kuto jointly developed the product with Prof. Hiroki Nikawa from the School of Oral Health Science at Hiroshima University and trading company Mitsui & Co. The idea of using the beneficial properties of L. rhamnosus L810 to enhance oral health arose after Nikawa discovered the increased presence of the bacterial strain in research on patients with resistance to caries.

The lozenges have a recommended retail price of JPY185 (US$1.75) per 12 bag. Further information can be found on the Japanese product website at www.uha-810jp.com.

Plymouth dental experts support Philippine mission

By DTI

PLYMOUTH, UK/MANDAUE CITY, Philippines: Supportting UK charity Dentaid, two dental experts from Plymouth University Peninsular School of Dentistry will be bringing oral health care to one of the poorest cities in the Philippines.

In addition to providing emergency and preventative dental services during their two-week mission, Dr Robert Witton and Ruth Potterton will be providing oral health education for the children and their teachers and set up a school toothbrushing programme.

The operation and project activities will be based around Uma Elementary School in Mandaue City on the island of Cebu.

"Our mission with Dentaid is to get all the school children dentally fit," said Potterton. "We’ll do this by offering pain relief treatments where necessary,atraumatic restorative treatment if possible, and fluoride varnish for all the children," Potterton said.

The two Plymouth volunteers are part of a wider group of relief teams who will be working together across a range of activities, including providing support in teaching English, IT equipment and community support training, and rebuilding after earthquakes, fires and typhoon damage in the region. Dental treatments will be provided in close cooperation with a local dental and dentists from the dental school in Cebu.

Risks of dental tourism

By DTI

SYDNEY, Australia: With the cost of dental treatment presenting a significant barrier for many Australians, some may consider dental tourism—travelling to another country to undergo a dental procedure—to be an increasingly viable option. With this in mind, the Australian Dental Association (ADA) has been prompted to issue a warning about the risks that may accompany this decision.

Australians dental tourists tend to travel to a wide variety of countries for cheaper procedures, from South-East Asian hotspots like Bali and Thailand to eastern European destinations. Though it is in no way illegal to have dental procedures performed away from Australia—and the initial cost of the treatment may be relatively cheap—there can often be unforeseen complications that are unable to be handled effectively in the time span of the period abroad, the ADA warned.

"The decision to become a dental tourist usually comes down to one simple thing—saving money," said Dr Michael Foley, Vice Chairman of the ADA’s Oral Health Committee.

"While it’s true you may save some money in the short term, the reality is that things can go wrong and all those expected savings can quickly disappear and end up costing more than the holiday itself."

In addition to procedural complications, dental tourists may be subject to less-stringent quality standards and lower-grade materials in comparison with Australian dentistry. If a patient is dissatisfied with dental work performed overseas, the ADA cautioned, it can sometimes be extremely difficult to repair satisfactorily and may lead to the extraction of the affected teeth.

"Complex procedures—medical or dental—should not be done over the course of a holiday," said Foley. "If you have the need for a complex medical treatment or procedure, it is best done in Australia where you can be assured of the safety and quality standards in place, and of the certainty of follow-up."

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Labour migration still difficult

By DTI

CEBU CITY, Philippines: Aiming to facilitate dental workforce mobility among member states of the Association of Southeast Asian Nations (ASEAN), a mutual recognition agreement (MRA) for dental practitioners was signed by member economies in 2009. However, almost a decade later, the ASEAN community still seems far from realising the unhindered movement of skilled professionals.

Among other factors, the implementation of the MRA has reportedly faced difficulties because of differences in national regulations. According to Rahmat Pramono, representative of Indonesia to the ASEAN, implementation of services by medical and dental practitioners are among the most difficult to negotiate because of the different systems of instruction and curricula followed in each country.

According to a Migration Policy Institute report, titled Open Windows, Closed Doors: Mutual Recognition Arrangements on Professional Services in the ASEAN Region, dental, medical and nursing MRAs are the least open of those signed by ASEAN member states. Unlike their counterparts in tourism, for which the framework automatically recognises competency certificates as issued at origin, health professionals interested in working in another ASEAN country have to follow a complex application process. After obtaining a licence from their respective professional regulatory agency and meeting MRA-related criteria, such as minimum years of experience, applicants are still faced with additional local requirements, which vary from country to country.

In an interview with Philippine newspaper SunStar, oral surgeon and implantologist Dr Steve Mark Gan, the Philippines’ representative to the MRA on dental practitioners, pointed out that members of the economic bloc are still apprehensive about allowing foreign dental professionals to practise in their respective countries. “It’s a tricky situation right now. It may take some time,” Gan said.

While Philippine dentists still cannot work freely in the ASEAN region, the country’s own products remain among the world’s best, drawing dental tourists from the US and Australia, Gan remarked.

In 2015, medical tourism in the Philippines generated US$5 billion in revenue from about 200,000 tourists, according to data from the Department of Tourism. In the ASEAN community, Singapore and Thailand are the country’s strongest competitors in the field, but services in the Philippines still cost 40 per cent less, Cebu Daily News recently reported.

In addition to the MRA for dental practitioners, the Philippines has signed agreements for eight other professions, including surveying, engineering, nursing, architecture and accountancy. However, so far, the ASEAN bloc has only managed to implement the MRAs for engineers, architects and tourism professionals.

Addressing the untapped potential of the MRAs to build and utilise human capital in the long term, Dovelyn Rannveg Mendoza, a senior policy analyst at the Migration Policy Institute and lead author of the above-mentioned report, said: “The greatest achievement of the ASEAN MRAs so far is rather indirect. The signing of these agreements has inspired a significant capacity-building effort in the less-advanced ASEAN Member States to upgrade professional regulation and training standards.”

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Researchers identify DNA sections responsible for periodontitis

By DTI

BERLIN, Germany: An international network of researchers led by scientists at the Charité—Universitätsmedizin Berlin in Germany has identified variations of certain DNA sequences that are clearly associated with an increased risk of developing different forms of periodontal disease. For at least two gene regions, the study team found a highly significant association with the disease.

In a genome-wide association study, the group, led by Prof. Arne Schäfer from the Charité Institute for Dental and Craniofacial Sciences, investigated the relationship between sequence differences in genetic information and the incidence of the disease in several thousand patients with aggressive and chronic periodontitis. The results were compared with healthy individuals.

“This type of study is very systematic in nature. It aims to identify the genes that have an effect on a person’s risk of developing a specific disease,” Schäfer explained. Millions of DNA sequence variants, distributed throughout the genome and describing most of a person’s genetic information, were examined in various patient groups. “DNA sequence variations can have an effect on a person’s risk of developing a particular disease. By comparing frequencies of variants in patients and healthy controls, it is possible to find which areas of a chromosome are associated with the disease,” he added.

The scientists found two gene regions that appeared to be associated with an increased risk of developing different forms of periodontitis. One of the two regions is responsible for the synthesis of alpha-defensins (antimicrobial peptides), which are produced by specialised immune cells. These immune cells, neutrophils, are part of the body’s immune response and are involved in the identification and destruction of microorganisms. The second gene region inhibits the activation of these immune cells.

“Our results show that the different forms of gum disease share a common genetic origin,” said Schäfer. He emphasised: “This means that there are groups of patients who are susceptible to developing gum disease, but whose susceptibility is independent of other risk factors, such as smoking, oral hygiene or aging.”

Worldwide, the prevalence of severe periodontal disease is estimated to be about 11 per cent.

The disease is considered complex because individual susceptibility is determined by the interaction between the oral microbiome and the immune system, smoking and diet, as well as by metabolic disorders such as diabetes mellitus. The response of the body to these factors is largely influenced by the individual’s genetic make-up.

The study, titled “A genome-wide association study identifies nucleotide variants at SIGLEC5 and DEFACL as risk loci for periodontitis”, was published in the July issue of the Human Molecular Genetics journal.

Less is more: Study looks into the traits of a “perfect” smile

By DTI

MINNEAPOLIS, USA: Lopsided, big, toothy, sly—smiles are described in many different ways. However, according to research from the University of Minnesota, how people perceive the facial expression in social interaction and non-verbal communication can differ significantly.

In the study, the researchers asked 802 study participants to rate 27 computer-animated smiles on their perceived effectiveness (very bad to very good), genuineness (fake vs. genuine), pleasantness (creepy to pleasant) and emotion expressed (anger, contempt, disgust, fear, happiness, sadness or surprise). The animated expression was altered by variations in the mouth angle, the extent of the smile, the degree to which teeth were shown and how symmetrically the smile developed.

The findings suggest that for a winning smile—one that is perceived as effective, genuine and pleasant—less is more. In the study, smiles with a medium angle tended to be more favorably judged, while wide open-mouth smiles were often interpreted as a sign of fear or contempt. In fact, the two lowest-rated smiles were both very toothy.

Although research has suggested that facial symmetry is often perceived as being more beautiful than asymmetry, slightly crooked smiles were rated higher in the current study. According to the researchers, this result is consistent with principles of smile design, in which dynamic symmetry, that is being very similar but not identical, allows for a more vital, dynamic, unique and natural smile compared with static symmetry.

The study’s results could have broad applications in a variety of areas, such as facial reanimation surgery and rehabilitation in individuals who have suffered from trauma, cerebrovascular accidents, neurological conditions, cancers or infections that have robbed them of the ability to express emotions through facial movement.

The psychological and social consequences of facial impairment can be extensive. Research has shown that individuals with partial facial paralysis are often misinterpreted, have trouble communicating, and often report symptoms such as anxiety and depression.

The study, titled “Dynamic properties of successful smiles,” was published on 28 June in the PLOS ONE journal.
Researchers identify DNA sections of a “perfect” smile

Less is more: Study looks into the traits and chronic periodontitis. The research group, led by Prof. Arne Schäfer from the Charité Institute for Dental and Craniofacial Sciences in Berlin, investigated the relationship between sequence differences in genetic information and the incidence of a specific disease. The study team found two gene regions associated with an increased risk of developing different forms of gum disease, one of which was published on 28 June in the journal PLOS ONE.

In a genome-wide association study involving 1,000 patients with aggressive periodontitis and 1,000 controls, it was possible to find gene variants in patients and healthy individuals. “DNA sequence variations were examined in various patient groups. “DNA sequence variations were examined in various patient groups,” Schäfer explained. “This type of study is very systematic in nature. It aims to identify the genes that have an effect on a person’s risk of developing a specific disease,” he added.

By comparing frequencies of different forms of gum disease, the researchers were able to show that the susceptibility is independent of factors such as oral hygiene or aging. “Our results show that the differences in immune cells, neutrophils, are part of a person’s genetic information, and inhibit the activation of these immune cells,” Schäfer noted. “This means that there are groups of people who are susceptible to developing gum disease, but whose genetic make-up inhibits the activation of these immune cells.”

The scientists found two gene regions, at SIGLEC5 and DEFA1A3, that were associated with an increased risk of developing gum disease. One of the two regions, at SIGLEC5, was consistent with principles of smile development. The other region, at DEFA1A3, was found to be significantly associated with an increased risk of developing chronic periodontitis.

MINNEAPOLIS, USA: In the same study, researchers at the University of Minnesota investigated the traits that can distinguish a likeable grin from a grimace. Asking participants to rate computer-animated smiles, researchers investigated the traits that can distinguish a likeable grin from a grimace. According to research from the University of Minnesota, how people perceive the facial expression in social interaction and non-verbal communication can differ significantly.

Animals whose facial symmetry is altered by variations in genetics, such as those with a missing mandible, can have an effect on a person’s immune system. Research has shown that in individuals with partial facial paralysis are often misdiagnosed with neurological conditions, cancers or trauma, cerebrovascular accidents, and head and neck infections that have robbed them of their facial movement.

The findings suggest that facial symmetry is consistent with principles of smile development and can be extensive. Research has shown that in individuals with partial facial paralysis are often misdiagnosed with neurological conditions, cancers or trauma, cerebrovascular accidents, and head and neck infections that have robbed them of their facial movement. The psychological and social impact of facial asymmetry can be significant, often report symptoms of self-consciousness, reduced self-esteem, and social isolation.

The study, titled “Dynamic symmetry and its influence on perceived effectiveness of smiles,” was conducted by a research team led by Prof. Arne Schäfer. The team included researchers from the University of Minnesota and the Charité Institute for Dental and Craniofacial Sciences in Berlin. The researchers published their findings in the journal PLOS ONE.

The study involved 802 participants who rated 27 computer-animated smiles on their perceived effectiveness (fake vs. genuine), pleasantness (creepy to pleasant) and emotional expression (anger, contempt, disgust, fear, happiness, sadness, surprise). The animated expression was altered by variations in toothy, shy—smiles are described as both very toothy.

The findings suggest that facial symmetry is consistent with principles of smile development and can be extensive. Research has shown that in individuals with partial facial paralysis are often misdiagnosed with neurological conditions, cancers or trauma, cerebrovascular accidents, and head and neck infections that have robbed them of their facial movement. The psychological and social impact of facial asymmetry can be significant, often report symptoms of self-consciousness, reduced self-esteem, and social isolation.

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“There are several barriers to using bones in useful age determination”

An interview with Prof. John Clement and Dr Rita Hardiman from the Melbourne Dental School at the University of Melbourne, Australia

By Kristin Hübner, DTI

With the Melbourne Femur Collection, the University of Melbourne holds a unique archive of human bone samples that has allowed for a multitude of interdisciplinary research projects in the past two decades. Dental Tribune spoke with Prof. John Clement, who has worked with the collection since its initiation, and Dr Rita Hardiman about its forensic and anthropological value and the experiences the dental profession brings to the methodological mix that help unlock the information recorded in the bone tissue.

The Femur Collection was initiated in 1991. Can you explain the initial purpose of the collection?

Prof. Clement: The initial purpose of the collection was to test the theory that femoral cortical bone microstructure could be used to establish age at death for an individual. This relied on being able to reliably measure the rate of turnover of bone during life, and age changes in the bone’s features. The aim was to collect samples of the midshaft of the femur covering the entirety of the human lifespan and both sexes. The femur was chosen because it is a durable part of the skeleton, likely to survive unscathed in cases in which deceased individuals are not discovered for a long time. These are also the cases in which an anthropological assessment of age at death is required.

Why is it located at the Melbourne Dental School?

Dr Hardiman: When the Femur Collection was initiated to try to determine a pattern of microstructural change to establish age at death, Professor Clement was working at the Victorian Institute of Forensic Medicine as a consultant forensic odontologist, as well as fulfilling his academic role at the School of Dental Science—as it was then called—at the University of Melbourne. The collection was established to answer questions about unknown deceased individuals’ identity, in particular: how old was the person when he or she died? This is part of the work of a forensic odontologist. I joined the collection at a later date, in 1998, to answer questions about sex differences and age changes in the cortex of the femoral midshaft.

Is there a similar collection elsewhere in the world that you know of?

Prof. Clement: Not such a well-documented, well-provenanced collection from recently living individuals, collected in accordance with national ethical guidelines and with explicit permission of the next of kin, for the express purpose of research into age-related changes.

How many individuals are represented in the collection today, and where were the specimens obtained?

Dr Hardiman: The collection represents over 600 individuals. Specimens are either physical samples of femoral bone or digitised volumetric scans of lower limb bones, at different rates and with different morphological and extracurricular activities. Some people have physically demanding work histories through mineralised tissues, though, so it would be a very interesting idea for the future.

“The next big step in the collection’s future is to couple the results of genetic investigations with the morphological outcomes from the bones.”

Fig. 1: Cortical thickness mapping of the proximal femur in women of different ages. — Fig. 2: Two rows of microradiographs of the femoral midshaft cortex illustrating the wide variation in bone structure. All from individuals between the ages of 78 and 80; top row men, bottom row women.
The collection is a rich source of information for researchers in various fields. What methodologies and experiences does the dental profession relate to?

Prof. Clement: Dental academicians and researchers have a long history of intrepid research into all five types of mineralized tissues that are important in the jaws and faces of people, using a number of methodologies at the forefront of scientific technology. All research conducted on the collection is done with expert knowledge of bone growth and development and of age changes. This field of knowledge is one in which the dental profession is closely linked. Just as with the femur bone, teeth are very resistant to decomposition and record a great deal of information about people’s lives. Given that you have all the information about the bone donors in the collection, have you ever considered doing cross-research with teeth samples to compare the teeth and bone findings?

Prof. Clement: The ethical constraints of this collection mean that we cannot do this for specimens we have collected so far. Besides that, removing teeth results in significant disfigurement—something we as researchers are reluctant to do unless absolutely necessary. Teeth are also able to be studied in living individuals, reducing the need to study extracted cadaveric teeth. Lastly, teeth are exposed to a variety of very different environmental factors, such as diet and habitual wear, thus not easily correlated with the changes in bone due to mechanical influences. Researchers at the Melbourne Dental School do have a keen interest in determining life histories through mineralized tissue, though, so that would be a very interesting idea for the future.

To date, over 80 papers have been published based on the collection. Could you name a few key findings?

Dr Hardiman: The key findings of research on this collection broadly relate to the ability to study features in recently deceased individuals from a prosperous urban environment that are impossible to study in the living. An example of a really interesting finding is that of the level of porosity in the cortical bone being a function of the size of individual pores, rather than pore density in the bone. More recently, researchers on the collection have been able to reconstruct the osteocyte lacunar network and the 3-D structure of Haversian systems at age determination using cranial sutures. Unfortunately, there are several barriers to using bones in useful age determination. The first is that there is no reliable method to determine age accurately within a reasonable range. The second is that any investigative technique that can be used on living individuals would not be sensitive enough. The third is that there are inevitable population differences in rates of change of bone features, and environmental effects that would probably confound any results, such as malnutrition and diseases that affect bone metabolism.

With the emergence of new digital technology, the collection probably offers the potential for even further discoveries. In your opinion, what do you foresee in this regard for the future?

Prof. Clement: The insights for the future will probably come from more precise mathematical modeling of the effects of physical changes on bone tissue. We now have the capability to work effectively with big data to predict changes in bone by inputting very detailed information about its morphological structure and the bone tissue's physical composition. Perhaps soon we will be able to watch a skeleton aging virtually and test the effects of preventative therapies on the structure of bone. The ultimate aim is to maintain people’s bone health throughout life so that everyone can remain as active and have as enjoyable, productive and long a life as possible!

Thank you very much for the interview.
**Inroads into Japanese market**

By DTI

SEOUL, South Korea: South Korean dental implant manufacturer OSSTEM IMPLANT is aiming to increase its market share in Japan, OSSTEM Japan CEO Kim Jae-gon told the Korean Times in an interview. Among other measures, the company plans to almost double its Japanese offices, from 12 to 22, by 2019.

Currently, the company, which was founded in 1997, holds only 3 per cent of the Japanese implant market. However, building on its success in South Korea, where the implant manufacturer has 50 per cent of the market share in the segment, OSSTEM plans to slowly expand its presence and over time compete with premium competitors from overseas, such as Straumann and Nobel Biocare.

“Through the acquisition of HI-TEC, we have been striving to compete with premium competitors in the Japanese market over the next several years. “The key behind our success in Korea is our strategy of not taking excessive royalty profits, but instead, investing more in research and development to enhance product quality,” Kim said.

Compared with Europe and America, the demand for implants is not yet as high in Japan. However, it is steadily growing and the company is confident that it will reach its annual sales target of JPY1 billion by 2023. In 2016, OSSTEM Japan already generated JPY600 million (US$5.48 million) in sales, growing more than 160 per cent compared with its 2012 figures.

One reason for this success is the company’s focus on research and development, Kim said. Consequently, OSSTEM not only produces quality implants and dental equipment, but also puts emphasis on educating dental professionals in the field. For example, the company runs advanced education seminars for dentists wishing to learn surgical procedures for implant placement. “This is part of our efforts to raise the awareness of implants in Japan, which will also improve our brand image in the country,” the branch head remarked.

“It is true it will not be an overnight thing for us to make tons of profits in Japan in the next few years, but we are confident that the implants industry here will definitely take more concrete shape as time goes on. Our price-competitive and quality products will then pose serious threats to market leaders, as we had done with our products in Korea.”

**MIS releases new EZ-Base abutment**

By DTI

BAR-LEV INDUSTRIAL PARK, Israel: MIS Implants Technologies has announced the release of a new Ti-Base abutment that offers a solution for anterior screw-retained restorations. According to the implant manufacturer, restoration placement has never been simpler than with the EZ-Base system. The new abutment is designed for extreme angulation and offers safe handling within its screw channel. In addition, more angle options allow for greater comfort for the clinician performing anterior and posterior restorations with convenient handling and placement.

According to the company, the system provides an entire range of possibilities for prosthetic restorations in the aesthetic zone. Whereas screw-retained restorations may not have been an option for many anterior cases in the past, the EZ-Base system now provides a solution. It may be used in a digitally planned procedure incorporating CAD/CAM technologies or using conventional methods.

Akazany explained: “It’s important for us, in the Products Division, to offer a broad range of prosthetic options in order to make the clinician’s life simpler, by having the most appropriate solution for each specific case without having to compromise. The EZ-Base system enables more freedom of choice and the ability to perform screw-retained restorations in cases that would have been previously ruled out.”

The EZ-Base system is available for narrow, standard and wide platforms and in both conical and internal hex connections. EZ-Base is also offered in both fixed gingival heights and adjustable options for optimal customization and convenience.
3Shape opens TRIOS for STL file export

By DTI

COPENHAGEN, Denmark: Danish digital dental solutions provider 3Shape has announced the opening of its TRIOS intra-oral scanner system for STL file export. According to the company, the export option will be included in a software upgrade for TRIOS users in the release of the new 3Shape Dental Desktop platform expected in the fourth quarter of 2017.

Currently, 3Shape only provides open STL CAD file export from its design software. With the addition of TRIOS STL export, both STL CAD files and digital impressions taken with the company’s TRIOS scanners will soon be available to dental professionals or laboratories using any system.

“As doctors and the industry in general, go more and more digital, the need for across-the-board seamless connectivity is essential. We believe that professionals should have the freedom to choose the partner and solution they want to work with. Whether it’s a dental lab or appliance-maker that needs a STL or DCM file for their workflow, or a preferred milling machine and 3-D printer, it should be up to the professionals to decide how and who they work with,” commented 3Shape co-founder and Chief Technology Officer Tais Clausen on the move.

However, data exclusive to the TRIOS system will not be available in STL format in the upgrade, the company pointed out. This includes features such as shade measurement, high-definition photographs, colour imaging, annotations and patient data, along with its colour digital impressions. This data will still be exclusively available as DCM files produced and used in the TRIOS system.

With the decision to open its systems, the Danish manufacturer is following the current trend to provide dental professionals with greater flexibility through completely open solutions. For example, competitor Dentsply Sirona just announced the opening of its CEREC system during the International Dental Show in March. Previously CEREC impressions were automatically sent to the CEREC milling system, which prevented clinicians using other solutions for further processing of scans.

In support of open data in digital dentistry, 3Shape has announced that TRIOS scans will now be available in a format allowing further processing with any system.

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NEW
Digital dentistry community gathers for Singapore Dental Week

CAD/CAM and Digital Dentistry International Conference

By DTI

SINGAPORE: From 18 to 21 August, the fourth Asia-Pacific edition of the CAD/CAM and Digital Dentistry International Conference will bring together leading experts in the field of digital dentistry at the Suntec Singapore Convention and Exhibition Centre.

Over the last 12 years, new developments in CAD/CAM and digital dentistry have played a key role in underpinning the scientific understanding of dentistry. Thus, the conference programme aims to convey how to achieve effective results while updating attendees with the latest knowledge in the field. To meet this goal, the scientific committee has selected a multitude of scientific sessions, panels and problem-based cases that will provide intensive learning opportunities through hands-on experiences presented by practitioners in diverse disciplines, according to the organiser.

After the overwhelming success of the 2015 edition—which was attended by 780 dental professionals and 89 dental technicians—this year’s conference falls under the umbrella of Singapore Dental Week 2017 and will feature a series of specialty events. The main programme on 19 and 20 August is complemented by the first Digital Orthodontic Forum on 18 August, the Dental Technician Parallel Session and Table Clinic Presentations on 19 and 20 August, and a select offering of multidisciplinary hands-on courses.

Overall, this year’s scientific line-up consists of 40 presentations by 28 world-famous speakers on a range of topics, including chairside CAD/CAM solutions, smile analysis, prosthodontic dentistry and applications in digital orthodontics. Recent findings with clinical implications, marketing opportunities and emerging technologies will be covered through interactive sessions and live demonstrations, alongside essential update sessions and hands-on demonstrations.

An industry exhibition with over 40 leading dental manufacturers will be held alongside the scientific programme.

More information can be found on the event website at www.capp-asia.com.

Visitors can also follow the conference updates on social media under #SDW and #CAD-CAMSingapore.

Safe high-speed preparation with W&H’s new Primea Advanced Air drive solution

BURMOS, Austria: With the Primea Advanced Air System, the first controllable air-driven dental high-speed drive solution, W&H is setting benchmarks in the dental market. According to the manufacturer, the new device allows dentists to work more quickly and safely with improved control owing to sophisticated sensor and digital airflow control technology.

In the field of dentistry, turbines are by far the most widely used drive solution for high-speed preparation. Yet, despite their popularity, dentists continuously come across usability limits due to the uncontrollable burr speed. By introducing the new Primea Advanced Air System, W&H now offers the first high-speed drive solution of its kind, breaking down all previous barriers.

Compared with traditional turbines, the innovative drive system provides new possibilities in practice. According to the company, the new functions of the Primea Advanced Air System offer turbine users absolute control and allow them to work particularly efficiently. For example, it is possible to excavate cavities effortlessly, easily remove old fillings and even cut crowns and bridges with ease, all without losing speed. Constant cutting performance is ensured, even when pressure is increased, owing to the combination of an air drive and electronic controls.

The burr speed of the Primea Advanced Air turbine can be adjusted from 60,000 rpm to 320,000 rpm and remains constant at all times throughout treatment. The stability of the selected speed when varying pressure is exerted on the burr is ensured by sophisticated sensor technology in the head of the turbine and by the control module of the Primea Advanced Air System.

In addition to the innovative drive technology, the Primea Advanced Air turbine offers all the advantages of a W&H Synea Vision turbine. Ergonomically designed, light and perfectly balanced, it allows relaxed working without fatigue. In addition, the sterilisable 5x ring LED of the RK-97 L ensures perfect illumination. Dentists benefit from the completely shadow-free illumination of the preparation site, and patients from improved treatment safety.

Alternatively, the company also offers a turbine with a single LED, the RG-97 L. The integrated 5x spray with its five outlet nozzles ensures perfect cooling and cleaning of the treatment site. The turbines are very quiet and provide optimal tactile feedback. The special scratch-resistant surface coating guarantees particular durability and preserves the value of the instruments.

Furthermore, the Primea Advanced Air System can easily be used as an add-on version or integrated into new units or existing units as a built-in solution. This makes it possible to upgrade dental units with future-oriented technology, giving them a considerable innovation boost.

More information can be found at www.wh.com.
Achieving the best bond strength with VITA ENAMIC

An interview with Dr Julián Conejo from the University of Pennsylvania, US

A restoration must be conditioned for a reliable adhesive bond between the luting composite and the hybrid ceramic. Dr Julián Conejo from the University of Pennsylvania is investigating how different types of conditioning and protocols influence the bond strength to the VITA ENAMIC hybrid ceramic. In this interview, he talks about his findings and what to consider when aiming for optimal results.

Dr Conejo, could you briefly explain the study methodology? What parameters were modified in the conditioning and pretreatment of the hybrid ceramic?

Seventy test specimens of VITA ENAMIC were etched for 20, 60 or 120 seconds with 5% hydrofluoric acid. The etched surfaces were cleaned either with phosphoric acid or in an ultrasound bath. For the study, including the control group with no pretreatment, seven different subgroups were formed. After the application of the bonding agent and the composite, the test specimens were stored in distilled water. The final shear strength was determined and the data was statistically analysed.

Did the exposure time to the hydrofluoric acid affect the bond strength of the luting composite?

Based on your findings, how important is etching with 5% hydrofluoric acid for a reliable adhesive bond of the luting composite to the ceramic restoration?

It is very important to apply hydrofluoric acid to create a roughened surface for good micromechanical retention. All etched sample specimens showed a significant increase in bond strength to the luting composite. In order to ensure sustained clinical success of the restoration, hydrofluoric acid is a critical process step for the treatment provider.

Fig. 1: Control group: unetched hybrid ceramic surface — Fig. 2: Hybrid ceramic surface after hydrofluoric acid etching for 20 seconds — Fig. 3: Hybrid ceramic surface after hydrofluoric acid etching for 60 seconds — Fig. 4: Hybrid ceramic surface after hydrofluoric acid etching for 120 seconds. Source of scanning electron microscopy images of VITA ENAMIC material samples: Julián Conejo 2016.
“All etched sample specimens showed a significant increase in bond strength to the luting composite.”

How important is it to carefully observe the manufacturer’s conditioning protocol when applying hydrofluoric acid and bonding agents?

It is very important. Our results show that the current surface conditioning recommended by VITA Zahnfabrik enables the greatest adhesion and is the simplest. According to the instructions for use, the hybrid ceramic should be etched for 60 seconds. Afterwards, the silane bonding agent (primer) should be massaged in for 60 seconds.

In your experience, can the treatment provider have a positive influence on the adhesive bond with additional steps?

Not really. That was one of our hypotheses. Now, we know that additional cleaning steps after etching with hydrofluoric acid do not produce any significantly higher values. Neither the additional surface treatment with phosphoric acid nor the ultrasonic bath improved the adhesive strength values compared with the hydrofluoric acid etching. For a reliable bond, a clean, pretreated surface of the restoration is always important after the try-in.

Besides the conditioning of the restoration, what is important in the pretreatment of the tooth substance in order to achieve a good adhesive bond?

Isolation with a rubber dam allows absolute dryness and a clean working field. The surface of the preparation should also be conditioned with an adhesive system prior to attachment. This, in turn, makes a perfect connection between the hard tooth substance and the luting composite possible.
The reproduction of natural dentition
All-ceramic crowns in a complex anterior restoration

By Yuji Tsuzuki, Japan

The wide variety of materials and manufacturing techniques available provide the ideal fabrication method for every indication. In combination with dental technical skills and a good understanding of shades and colours, this leads to outstanding restorations.

Imitating natural dentition is the greatest challenge in the fabrication of prosthodontic restorations. A natural appearance is always determined by a number of various characteristic features, so the technique applied for the reproduction of the teeth cannot always be the same. This is the reason that it is essential for us to observe, learn and recognize fine details and continue to develop, step by step, every day. The basis for imitating nature is an understanding of the characteristics of healthy teeth and of ceramic materials. The reproduction of light optical properties in particular is a challenge that requires an in-depth perception of colours. Properties such as light reflection, transmission and fluorescence contribute significantly to a successful result.

When imitating the light optical properties, the basic structure consists of three different layers: translucent, semi-transparent and opaque. The surface colour is then applied based on a 3-D colour concept. Even though state-of-the-art materials (e.g., polychromatic zirconium dioxide) have become very popular owing to advances in materials science, layering ceramic, built up by hand, is still indispensable for aesthetic restorations. In this article, well-proven techniques will be presented based on two case reports. The IPS e.max Ceram Selection Enamel and Effect materials were used together with the IPS Vivadent shades and glasses (both Ivoclar Vivadent). Both situations proved to be a challenge in terms of the reproduction of light optical properties. However, imitating nature is possible!

**Case 1**
Initial situation and treatment plan

The approximately 50-year-old patient had suffered a fracture of the roots of teeth #11 and 21 as a result of an accident. The teeth could not be saved. After careful extraction, considerable resorption of the soft tissue at the labial aspect was observed. After consultation, the patient opted for implant treatment. Prior to this, however, an intervention had to be carried out in the area of the labial soft tissue. The aim was to adjust the gingival contours so that a perfect result could be achieved despite the high smile line. Owing to the advanced soft-tissue resorption, a removable implant superstructure made from gingival-coloured ceramic was produced, taking aesthetic and hygienic aspects into account.

The two maxillary central incisors occupy an important position from an aesthetic perspective, since the prominence of these teeth expresses the patient’s individuality. Furthermore, the central incisors are the starting point for the continuity and symmetry with the other teeth. Therefore, restoration specifically requires these teeth to be unique and crafted carefully. In this case, from a prosthetic perspective, it was important to integrate the asymmetrical anterior teeth. The mandibular anterior teeth were crowded and there was no contact with the antagonists.

For functional integration, the maxillary anterior crowns had to be placed in a narrow mesiodistal area. The implants were inserted into regions #11 and 21, taking surgical and prosthetic requirements into consideration (Fig. 1). After osseointegration, the implants would be restored with a splinted, screw-retained all-ceramic restoration (Fig. 2).

Inspiration during the build-up

When building up all-ceramic crowns, the following steps must be carried out with great care: (i) control of the opacity, which influences the brightness, and (ii) characterization of the incisal edge with translucent or opaque materials. Concerning the first point,
depending on the opacity of the framework material, the appropriate brightness can be achieved by means of Deep Dentin or Power Dentin (IPS e.max Ceram), even in materials with a high translucency. In order to reproduce the natural tooth shade, it is important to understand light transmission and reflection. Likewise, the skilled application of light optical effects (e.g., fluorescence and opalescence) is of significance. This is where the new IPS e.max Ceram Selection Enamel and Effect materials are of use. With this outstanding set of materials, lifelike tooth characteristics can be reproduced even more accurately. Figures 3–5 illustrate the layered build-up.

In order to achieve full aesthetic integration of the implants, in addition to the shade and shape of the teeth, it is important to ensure that the surface texture is adjusted to suit the oral environment. To allow the surface texture to appear as natural as possible, fine characteristics (e.g., surface gloss) must be imparted. The surface gloss changes the light reflection, it therefore affects the shade. For this reason, it is imperative to adjust the surface texture carefully. In this case, the IPS Ivoclar staining and glazing system was used for surface finishing.

Results

The finished crowns were screw-fixed to the implants and the result was assessed. The natural appearance was enhanced by a conscious asymmetry of the teeth, among other factors. The gingival contours were ideally adjusted. The teeth (crowns) and soft tissue complemented each other beautifully. The individuality was shown perfectly. Although this was a challenging and complex case, the results were pleasing for all involved and work was completed with the aid of deep treatment prognosis (Figs. 6 & 7).

Case 2

Initial situation and treatment plan

This patient was also around 50 years old at the time of treatment and came to the practice with an aesthetic problem in the anterior region. The existing restorations on teeth #23–12 were defective and strongly discoloured and no longer suited the patient’s requirements. A slight overbite was noted. Tooth #23 had inadequate contact with the antagonist. In addition, vertical and horizontal rotation of the alveolar ridge in region #22 was observed. Resorption of the soft tissue owing to tooth loss also affected the situation (Fig. 8).

This patient needed extensive treatment in order to achieve an aesthetically pleasing result. An alveolar ridge augmentation procedure was thus first performed. On the basis of the pre-operative examination, a soft-tissue reconstruction was then carried out. The aim was to create a harmonious gingival area (Figs. 9a & b). In this case, sufficient tissue was important, since the horizontal resorption of the alveolar ridge adversely affected the vestibular extent of the crowns. By the time the temporary restoration had been made, the final result had already been defined and the framework for the final restoration planned. It should be pointed out that, in the case of aesthetic restorations, close cooperation between dentist and dental technician is essential. Of course, the patient too must be involved in planning and treatment. The treatment goals are determined together in order to achieve outstanding and satisfactory results for all involved.

Fabrication of the restoration

The frameworks (crowns and bridge) were produced from the lithium-dissilicate glass-ceramic IPS e.max Press (Ivoclar Vivadent). Since the reproduction of translucency is a challenge in a layered ceramic restoration, contrast effects were applied within the crown during a previous staining process (Fig. 11). In addition, an appearance that underlines the material advantages can be achieved by means of a partial cut-back. IPS e.max Press offers countless possibilities for the production of aesthetic restorations. In this case, the framework was specifically reduced and therefore a perfect basis was created. The vestibular regions were then built up with ceramic layers. After the internal shade composition and adjustment of the tooth morphology were complete, IPS Ivoclar was used to replicate the surface characteristics. In contrast to conventional stains, these stains can be fired at a lower firing temperature of 750°C. The reasons for staining are adjustment of the degree of saturation, characterisation and correction of the internal structure.
IPS e.max Ceram is a low-fusing ceramic. In order to adjust the surface texture during the glaze firing, it is necessary to handle it carefully and manage the firing programs. In cases such as this, in which a distinctive characterisation is required, the stain-firing sequence must be lengthened. Texture control then becomes more difficult. In view of this, IPS Ivocolor is a good product that allows characterisation at a low temperature. It can therefore be applied without losing the surface texture. During the final glaze adjustment, the delicate surface characterisations and the stained areas were retained. By applying the individual characteristics of natural teeth, we aimed to create a natural appearance. IPS e.max Ceram Selection was also used here. A successful combination of light transmission and reflection was achieved: a perfect reproduction of natural shade with the effect of depth (Figs. 12–14).

Conclusion

The most important advantage of IPS e.max Press is the combination of a high level of aesthetics and exceptional strength. Incidence light on IPS e.max lithium disilicate behaves in a similar way to that on natural teeth. This ensures maximum aesthetics. In addition, the material provides ideas and inspiration. The integration of IPS e.max Ceram Selection and IPS Ivocolor, as well as IPS e.max Ceram Power Dentin and Power Incisal ceramic, greatly expands the range of aesthetic possibilities. In the future, the clinical indications for the IPS e.max system will be increased even further.

Acknowledgements: We would like to extend our gratitude to Drs. Hitoyuki Takanashi and Yusuke Yamaguchi, who provided the two patient cases.
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The Silk Road Economic Belt and 21st Century Maritime Silk Road (or Belt and Road Initiative) is a development strategy initiated by the Chinese government. With reference to the historic Silk Road, it focuses on connectivity and cooperation between Eurasian countries. At this year’s HKIDEAS, the Hong Kong Dental Association (HKDA) is hosting the Inaugural Belt and Road Oral Health Summit to foster exchange and cooperation between Hong Kong’s dental professionals and their counterparts from countries along these routes.

Since the success of the first HKIDEAS in 2010, the event has become one of the most important meetings for the dental community in the region. HKIDEAS presents current expertise and knowledge in many dental disciplines and gives attendees the opportunity to deepen and broaden cooperation in many areas of importance to the future of dentistry. It is thus fitting that the theme of this year’s programme is “New horizon in dentistry”. At this year’s event, the exchange of ideas, continuing education and the presentation of new research in various fields of dentistry takes centre stage.

Running concurrently with the scientific programme, the trade exhibition showcases the most advanced technologies and products. With your participation, I am confident that the congress will be a great success. Let’s join hands to ensure the continued advancement and success of the dental profession. We hope all of you will have a meaningful and fruitful meeting in Hong Kong!
Emerging challenges to health care professionals and policymakers

Introduction to Forum on Aging Population at HKIDEAS 2017 by Prof. Li-jian Jin, Hong Kong

The ageing population is increasingly becoming a critical issue in various countries and regions around the world, mainly due to a decreased fertility rate and increased life expectancy. As such, advocacy for healthy ageing and effective care of the elderly are emerging great challenges to all health care professionals and policymakers. According to the United Nations, the current rate of population ageing has exceeded that of the last century. Notably, Hong Kong is becoming an ageing society with a significant increase in the greying population. The World Health Organization has strongly advocated for a life-course approach to healthy ageing, and the FDI World Dental Federation has recently released a global policy statement on the role of oral health care professionals in the promotion of healthy ageing globally.

During this year’s HKIDEAS, three invited medical and dental experts will be jointly addressing this notable issue opportunity at the Forum on Aging Population.

Prof. Jean Woo, Director of the CUHK Jockey Club Institute of Ageing at the Chinese University of Hong Kong, will be highlighting the key issues and challenges of population ageing in Hong Kong, and elaborating on possible strategies to effectively deal with the challenges, via a model of medical social integration and promotion of a self-management scheme.

Dr. Kai Hang Yu, from the Li Ka Shing Faculty of Medicine at the University of Hong Kong, will be discussing the challenges facing dental professionals and emphasizing the importance of health promotion and disease prevention through the collaboration of dental and medical professionals for maintaining natural dentition and contributing to healthy ageing.

Editorial note: The Forum on Aging Population takes place on 4 August from 16:30 to 18:00 in Hall 5G. Read more about the HKIDEAS 2017 scientific programme on page 6.

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Periodontal health in focus at FDI congress 2017

In acknowledgement of the long-standing mutually beneficial relationship between Japanese dental manufacturer GC and the University of Turku in Finland, GC Chairman Makoto Nakao has been awarded an honorary doctorate from the university’s Faculty of Medicine.

“For me, this is the most significant personal recognition that I have received,” Nakao told the audience at the conferment ceremony in Turku. Although it was not the first award given to him, his previous international honours were primarily from the business sector and from science communities and governments, he said.

“The collaboration between GC and the university started in 1999. In cooperation with the Turku Clinical Biomaterials Centre, GC was able to further advance the development of preventive bioactive composites, among other things. In 2013, the fruitful cooperation led to the launch of a dental composite that has since won five different innovation and quality awards,” Nakao said.

Playing a vital role in the partnership between GC and the university, Prof. Pekka Vallittu, director of the centre, said that GC is one of the world’s largest developers, manufacturers and sellers of oral biomaterials. Therefore, the cooperation helps ensure that science and research at the university remain updated on the needs of the dental industry.

This year, the medical faculty at the university only awarded one other honorary doctorate, to immunology and stem cell biology expert Prof. Irving Weissman from Stanford University in the US.

The Dental Tribune International magazines

In cooperation with the Turku Clinical Biomaterials Centre, GC was able to further advance the development of preventive bioactive composites, among other things. In 2013, the fruitful cooperation led to the launch of a dental composite that has since won five different innovation and quality awards.

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Ivoclar Vivadent acquires Swiss start-up Kapanu

Ivoclar Vivadent, one of the world’s leading dental manufacturers, has acquired the Swiss start-up company Kapanu, specialized in custom software solutions for desktop, web and mobile applications. Both companies intend to work together on the development of innovative dental applications.

Kapanu is a start-up and spin-off company of ETH Zurich, a science, technology, engineering and mathematics university. The company was founded in 2015 and consists of a team of scientists and developers who produce leading-edge software for the dental industry.

Ivoclar Vivadent and Kapanu plan to work together to develop innovative dental applications that connect real-life processes with the digital world. Their main objective will be to determine how the usage of augmented reality can facilitate dental diagnostics, case analysis and treatment therapies. Ivoclar Vivadent announced in a press release that further details of the acquisition were not disclosed.

Nobel Biocare offers quicker delivery for NobelProcera bridges

Nobel Biocare has announced that customers using the company’s NobelProcera solutions can now receive NobelProcera bridges in zirconia sooner. Estimated delivery times have been cut from four days to three, helping dental professionals significantly reduce treatment times. The time-saving is the result of a concerted effort to further enhance efficiency at the NobelProcera production centres in Mahwah in the US and Chiba in Japan.

Victor Nieto, Vice President of Global Operations at Nobel Biocare, said: “We are pleased that we can now offer our customers high-quality NobelProcera bridges in less time. Time is precious for dental professionals and patients alike. Across Nobel Biocare, we are innovating to offer superior solutions that shorten treatment times. Providing precision-engineered restorations faster is an important part of this.”

Moreover, quality control is a priority for the teams at the NobelProcera production sites, where stringent procedures are in place to help ensure that customers receive only restorations of the highest quality.

In this regard, Belgian master dental technician Luc Rutten, who recently visited the NobelProcera facility in the US, stated: “The plant in Mahwah really impressed me. Quality assurance there is outstanding. After every step in the production process, they carry out a precision review. Rigorous accuracy is maintained at the level of a few microns. The resulting precision of the copings, abutments, bridges and implant bars in titanium and zirconia leaves nothing to chance—which means that I feel nothing but confidence.”

More information can be found at www.nobelbiocare.com/nobelprocera.

World Summit Tour heads to Shanghai

After hosting major events in Tokyo in Japan in February and San Diego in the US in May, and Nice in France in June, the 2017 World Summit Tour will make its final stop in Shanghai on 25 and 26 November.

Once again, attendees can again expect an extensive programme of scientific lectures by international and regional speakers, hands-on workshops on various solutions, as well as a display of Dentsply Sirona’s comprehensive portfolio. The company’s products cover the full range of implant treatment, including imaging systems for diagnostics and treatment planning, computer-assisted surgical procedures and bone regenerative materials, as well as a variety of patient-specific CAD/CAM prosthesis solutions, such as Atlantis and CEREC.

Congress participants will again be invited to view the poster exhibition, for which dental professionals can submit poster abstracts in the categories of clinical application and research until 15 September. The winning entries in the competition in both groups will be awarded €1,500 each.

With the World Summit Tour, Dentsply Sirona brings together current scientific news with the latest clinical and digital developments in implant dentistry. The theme of the tour—“Because inspiration and confidence matters”—is intended to reflect the company’s dedication to improved oral health and enhanced quality of life for implant patients worldwide.

About 1,200 dental professionals were welcomed in each of the cities of the tour, according to the organizers.
Friday, 4 August
9:00–10:30
Endodontics vs Implants
Hall 5F (Parallel Session A)
Speaker: Dr. Patrick Wu

The Various “Ideas” of a Hong Kong Implant Prosthodontist
Hall 5G (Parallel Session B)
Speaker: Dr. Patrick Wu

10:30–11:15
Break

11:15–12:45
Modern Endodontics: Effect of Technological Advances
Hall 5F (Parallel Session A)
Speaker: Dr. Patrick Wu

Mastering the Act of Caries Management in Higher Risk Patients
Hall 5G (Parallel Session B)
Speaker: Prof. Iain Pretty

12:45–14:15
Lunch break

14:15–15:45
Current Challenges of Modern Oral Diagnosis and Imaging using CBCT
Hall 5F (Parallel Session A)
Speaker: Prof. Michael Bornstein

Endodontics: Can We Do Better?
Hall 5G (Parallel Session B)
Speaker: Dr. Alex Chan

Workshop 1: The Use of Diode Lasers in Clinical Dentistry
Meeting Room S423-4
Speaker: Dr. Kenneth Luk

15:45–16:30
Break

16:30–18:00
Zirconia is Not Alike Glass Ceramics
Hall 5F (Parallel Session A)
Speaker: Dr. Peter Pospiech

Workshop 2: Medical Emergency—Improving your Skills and your Teamwork through Practice
Tang Shiu Kim Hospital
Speaker: Dr. Alan Reid

19:00–21:00
Break

Saturday, 5 August
9:00–10:30
Pink and White Esthetics from the Periodontal Point of View
Hall 5G (Parallel Session A)
Speaker: Dr. Jeanette Chua

Genetics for Clinicians, What Dentists Need to Know
Hall 5G (Parallel Session B)
Speaker: Dr. Thomas Hart

10:30–11:15
Break

11:15–12:45
Proactive Periodontal Care in Dental Practice: Challenges, Key Issues for Success and Perspectives
Hall 5F (Parallel Session A)
Speaker: Prof. Li-jian Jin

Complex Oral Rehabilitation Involving Dental Implants and Natural Teeth: Aesthetic Management
Hall 5G (Parallel Session B)
Speaker: Dr. Peng-mun Wong

12:45–14:15
Lunch break

14:15–15:45
Mid-Facial Expansion and Airway Improvement with Micro-Implant (MI) Assisted Maxillary Skeletal Expander (MSE)
Hall 5F (Parallel Session A)
Speaker: Prof. Won Moon

Preparation Rules for CAD-CAM Restorations—Did Something Really Change?
Hall 5F (Parallel Session B)
Speaker: Prof. Won Moon

Workshop 1: The Use of Diode Lasers in Clinical Dentistry
Meeting Room S423-4
Speaker: Dr. Kenneth Luk

15:45–16:30
Break

16:30–18:00
Mid-Facial Expansion and Airway Improvement with Micro-Implant (MI) Assisted Maxillary Skeletal Expander (MSE)
Hall 5F (Parallel Session A)
Speaker: Prof. Won Moon

Traditional Techniques vs CAD-CAM Restorations. Nature vs Machines and Softwares. How Can We Combine both Worlds and Is Any of them Going to Prevail?
Hall 5G (Parallel Session B)
Speaker: Dr. Eduardo Mahn

Workshop 2: Medical Emergency—Improving your Skills and your Teamwork through Practice
Tang Shiu Kim Hospital
Speaker: Dr. Alan Reid

Sunday, 6 August
9:00–10:30
Advancements in Surgical Implant Dentistry: Moving from Freehand to Guided to Navigational Implant Placement
Hall 5F (Parallel Session A)
Speaker: Dr. Peter Moy

A Minimally Invasive Approach to Oral Rehabilitation Challenges in the Dentate Older Adult
Hall 5G (Parallel Session B)
Speaker: Prof. Patrick Allen

Workshop 3: Maxillary Skeletal Expander (MSE)
Meeting Room S426-7
Speaker: Prof. Won Moon

10:30–11:15
Break

10:45–12:45
Summit: Inaugural Belt & Road Oral Health Summit, Hong Kong
Meeting Room S428

11:15–12:45
Use of Growth Factors for Hard and Soft Tissue Augmentation: Status Report
Hall 5F (Parallel Session A)
Speaker: Dr. Peter Moy

A Comprehensive Review of Current Composite Technologies: How to Interpret the Scientific Data in order to Find your Ideal Material and Achieve Optimal Restorations?
Hall 5G (Parallel Session B)
Speaker: Dr. Peter Moy

Workshop 3: Maxillary Skeletal Expander (MSE)
Meeting Room S426-7
Speaker: Prof. Won Moon

12:45–14:15
Lunch break

14:15–15:45
oral Health Educational Talk
Chair: Dr. Andrew Chan & Century Tsang

14:15–15:45
Management of the Unwell or Deteriorating Patient—A Practical Approach
Hall 5F (Parallel Session A)
Speaker: Dr. Alan Reid

Professionalism in 21st Century Dentistry—Balancing the Risks; Delivering Oral Health Care
Hall 5G (Parallel Session B)
Speaker: Dr. Stephen Henderson
What’s on in Hong Kong 4–6 August

Chinese Opera Festival: Battle of the Throne
Date: 4–6 August
Starting times: 19:30 Friday and Saturday | 15:00 Sunday
Venue: Friday and Saturday: Ko Shan Theatre, 77 Ko Shan Rd; Sunday: Yuen Long Theatre, 9 Yuen Long Tai Yuk Rd
www.cot.gov.hk

Established in 2010, the Chinese Opera Festival annually captivates audiences with a compelling mix of productions featuring opera genres from various parts of China, such as Beijing, Guangdong and Jiangsu. This year’s event will be even more festive, as it celebrates the 20th anniversary of Britain’s handover of Hong Kong to China. In addition to alternating shows, the festival will feature lectures, podium discussions, exhibitions and operatic film screenings aimed at providing an even deeper understanding of this beautiful opera feast.

On the programme this weekend is the opera Battle of the Throne, set in the Wanli period under Ming Emperor Shenzong. Blending old and new artistic elements, the palace drama follows two brothers that become enemies in their fight over the throne—a contemporary new classic performed in the format of traditional Cantonese opera.

Yesterday Once More—sky100 Observation Deck
Date: daily
Opening times: 10:00–22:30 Friday and Saturday | 10:00–21:00 Sunday
Venue: International Commerce Centre, West Kowloon
www.sky100.com.hk

The sky100 Observation Deck, located on the 100th floor of the International Commerce Centre—the tallest building in Hong Kong—is one of the city’s must-see attractions. This summer, however, visitors will not only be able to enjoy panoramic views of Hong Kong from 393m above ground, but also be able to revisit the colourful story of the city with sky100’s summer installation Yester-day Once More.

Take a trip down memory lane on Hong Kong’s old shopping street and see long-gone tenement buildings, retro signs and even an egg waffle cart to bring the golden seventies back to mind. In the installation Our Estate, Our Home, visitors can wander through a reimagined public housing estate, including a typical home setting, an old-time photo studio and a barbershop. This is a unique opportunity to experience the life-style of a bygone era and at the same time enjoy breathtaking 360 degree views of modern Hong Kong’s skyline.

Hong Kong International Drummer Festival
Date: 4 August
Starting time: 20:00
Venue: Kwai Tsing Theatre, Hing Ning Rd
www.hkdrumfest.com

From the classical perspective, drums are seldom viewed as a solo instrument in the performance setting. The Hong Kong International Drummer Festival—a change to that. Featuring acclaimed national and international drummers in concerts and drum competitions, the festival—being held for the second time—aims to foster exchange between drummers from different music cultures, such as drum set, marching snare drum, timpani and Chinese drum, to nourish a unique Hong Kong drum culture.

One of the highlights of this year’s event is award-winning German drummer Benny Greb, who will take centre stage at the Kwai Tsing Theatre on Friday night. For the festival, the world-famous drummer and composer will be accompanied by his band Moving Parts, featuring British musicians Kit Downes on the keyboard and Chris Montague on the guitar. With the combination of jazzy improvisations with electronic lucidity and snotty indie sounds, concertgoers will be left in no doubt about the musical diversity of drumming.

What's on in Hong Kong 4–6 August
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