Dental Tribune

The World's Dental Newspaper · Asia Pacific Edition

Published in Hong Kong | www.dental-tribune.asia | Vol. 16, No. 1+2

IDEM

Presentations, lectures and workshops all set to feature at upcoming anniversary edition in Singapore.

▸ Page 03

INTERVIEW

FDI President Dr Kathryn Kell and Sinéad Kwant, Philips, about the significance of World Oral Health Day and challenges in improving oral health globally.

▸ Page 10

ENDODONTICS

In a guest editorial, DT contributor Aws Alani discusses how to crack the code of fractured teeth.

▸ Page 12

Hundreds of complaints against Singapore dentists in 2017

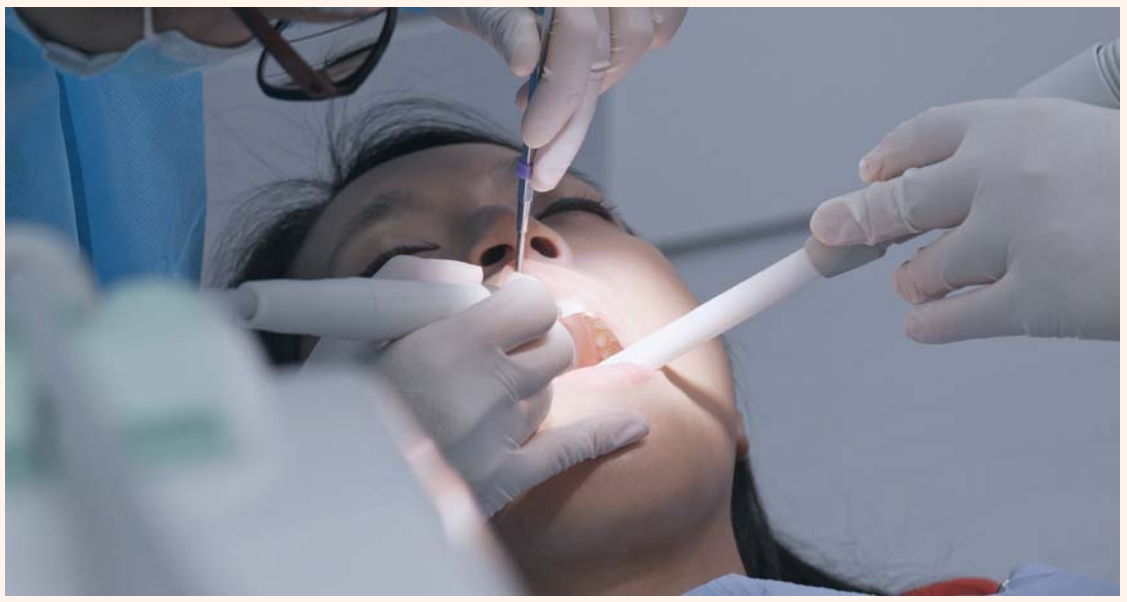
By DTI

SINGAPORE: Despite the high quality of dental work being performed throughout Singapore, there are still occasions when standards are not met. According to the Singapore Dental Association, 270 complaints were lodged against dental practitioners in 2017, including performing of procedures outside of the dentist's scope, long waiting times, overcharging and dissatisfaction with treatment outcomes.

In a recent report with Channel NewsAsia, Singapore Dental Association President Dr Lim Lii said: "The complaints were mainly due to misunderstanding on both the part of the patient and dentist about the treatment rendered."

"Due to a lack of proper communication, patients may not fully comprehend the advice like the limitations of treatment procedures given by the dentists. Similarly, the patients may not have adequately expressed their expectations to the dentists, resulting in apparent unmet expectations from the treatment," she continued.

With misunderstandings often leading to lodging of complaints, some Singapore-based dental professionals believe the problem concerns the lack of awareness of the general public regarding dentistry and dental services provided by various types of dentists. Dr Elaine Tan, a consultant in clinical orthodontics at the National Dental Centre of Singapore, told Channel NewsAsia: "I think people have been thinking that all dentists are the same and that their job is just to extract or fill teeth. But in dentistry, we have different specialties."



Complaints were mainly due to misunderstanding on both the part of the patient and dentist about the treatment rendered, SDA President Dr Lim Lii said.

There are no current restrictions in Singapore on the treatments dentists are allowed to provide, but dentists are expected to practise within their competencies and encouraged by the Singapore Dental Council to refer patients appropriately according to the body's ethical guidelines. It is also illegal for a dentist to state that he or she is a specialist in a particular field if not registered in that field with the Singapore Dental Council.

In a move to help combat misunderstandings between patients and dentists and to minimise complaints lodged, the National Dental Centre of Singapore will be initiating a new awareness campaign. Aimed at informing the wider public about oral health and dentistry in general as well as the provision of dental services, the campaign is set to be launched in March.

Cavitating jets may provide easier removal of oral biofilm

By DTI

SENDAI, Japan: Just like natural teeth, dental implants require proper care and oral hygiene to prevent disease. In a recent study, Japanese researchers looking for better ways for dentists to remove plaque from implant fixtures compared the effects of a cavitating jet with the standardly used water jet. They found that the cavitating jet removed biofilm from the rough surface of an implant fixture more effectively.

Prof. Hitoshi Soyama from Tohoku University and his team from Showa University compared the cleaning ability of a cavitating

The researchers used a certain type of nozzle to create the cavitation bubbles which removed the plaque when they collapsed. (© Hitoshi Soyama/Tohoku University)

jet to that of a water jet. With the former, high-speed fluid is injected by a nozzle through water to create minuscule bubbles of vapour. When these bubbles collapse, they produce strong shock waves with sufficient force to remove surface contaminants.

To test the two different jets, four volunteers performed no oral care for three days to allow biofilm to develop in their mouths. Their fixtures were then cleaned using both methods, and the researchers measured the amount of plaque remaining at several time intervals.

While there was little difference between the amounts of plaque removed by both methods

▸ Page 2

AD

Australian senate support for medical device reforms welcomed

By DTI

CANBERRA, Australia: A senate committee report recommending the passage of legislation that changes the way the Therapeutic Goods Administration (TGA) regulates medicines and medical devices has been welcomed by the Australian Dental Industry Association (ADIA). It delivers a long-standing legislative reform that ADIA has been lobbying politicians of all political persuasions to deliver on for nearly a decade.

"This bill contains important reforms that will cut the red tape associated with introducing into the Australian market new and innovative patient treatment and diagnostic options," said ADIA CEO Troy Williams.

The bill will reportedly also make changes that support amendments to the Therapeutic Goods Act 1989 made in 2017. The reforms will allow the TGA to authorise Australian companies to undertake conformity assessments, a significant departure from past practice where only the TGA could perform such evaluations.

"This legislation, combined with the legislative changes made last year that ADIA also secured, creates a far more efficient system for dental product manufacturers to introduce new products to the Australian market. Whereas previously the TGA was the sole source of authority, the increasing use of overseas regulators and third-party Australian conformity assessment bodies will provide alternatives without compromising patient safety," said Williams.

Williams went on to say that ADIA has been pushing for the changes because they create a regulatory framework for dental products that is based on a risk management approach designed to ensure public health and safety. He added that the reforms will simultaneously free the dental industry from any unnecessary regulatory burden.

The legislation is said to create a far more efficient system for dental manufacturers to introduce new products to the Australian market.

AD

◂ Page 1

after one minute of cleaning, that changed after longer exposure. After three minutes, the cavitating jet had removed about a third more plaque than the water jet had, leaving little plaque on the implant at the end of the experiment. The cavitating jet left less residual plaque on the apex of the fixture than on the crestal part.

"Conventional methods cannot clean plaques on the surface of dental implants very well, so this new method could give dentists a new tool to better manage these fixtures which are becoming more common," said Soyama.

Previous research has shown that water flow exerts shear stress to remove biofilm. In addition to this shear effect, the cavitating jet produces considerable force when the bubbles collapse, allowing the removal of biofilm particles. The researchers suggested that the two processes work in synergy to make the cavitating jet superior to the water jet when cleaning plaque off the irregular surface of dental implants.

The study, titled "Removal of oral biofilm on an implant fixture by a cavitating jet", was published in the December issue of the *Implant Dentistry* journal.

IMPRINT

GROUP EDITOR:
Daniel ZIMMERMANN
newsroom@dental-tribune.com
Tel.: +44 161 223 1830

MANAGING EDITOR AP:
Daniel ZIMMERMANN

EDITOR:
Yvonne BACHMANN

EDITOR/SOCIAL MEDIA MANAGER:
Monique MEHLER

MANAGING EDITOR & HEAD OF DTI COMMUNICATION SERVICES:
Marc CHALUPSKY

TEAM ASSISTANT:
Julia MACIEJEK

COPY EDITORS:
Sabrina RAAFF
Ann-Katrin PAULICK

CLINICAL EDITORS:
Magda WOJTKIEWICZ
Nathalie SCHÜLLER

PUBLISHER/PRESIDENT/CEO:
Torsten R. OEMUS

CHIEF FINANCIAL OFFICER:
Dan WUNDERLICH

BUSINESS DEVELOPMENT MANAGER:
Claudia SALWICZEK-MAJONEK

PROJECT MANAGER ONLINE:
Tom CARVALHO

JUNIOR PROJECT MANAGER ONLINE:
Hannes KUSCHICK

E-LEARNING MANAGER:
Lars HOFFMANN

MARKETING SERVICES:
Nadine DEHMEL

SALES SERVICES:
Nicole ANDRÄ

ACCOUNTING SERVICES:
Anja MAYWALD
Karen HAMATSCHEK
Manuela HUNGER

MEDIA SALES MANAGER:
Antje KAHNT (International)
Barbora SOLAROVA (Eastern Europe)
Hélène CARPENTIER (Western Europe)
Maria KAISER (North America)
Matthias DIESSNER (Key Accounts)
Melissa BROWN (International)
Peter WITTECZEK (Asia Pacific)
Weridiana MAGESWKI (Latin America)

EXECUTIVE PRODUCER:
Gernot MEYER

ADVERTISING DISPOSITION:
Marius MEZGER

DESIGNER:
Matthias ABICHT

Published by DT Asia Pacific Ltd.

DENTAL TRIBUNE INTERNATIONAL
Holbeinstr. 29, 04229, Leipzig, Germany
Tel.: +49 341 48474-302
Fax: +49 341 48474-173
info@dental-tribune.com
www.dental-tribune.com

Regional Offices:

DT ASIA PACIFIC LTD.
c/o Yonto Risio Communications Ltd,
Room 1406, Rightful Centre,
12 Tak Hing Street, Jordan,
Kowloon, Hong Kong
Tel.: +852 3113 6177
Fax: +852 3113 6199

UNITED KINGDOM
535, Stillwater Drive 5
Manchester M11 4TF
Tel.: +44 161 223 1830
www.dental-tribune.co.uk

DENTAL TRIBUNE AMERICA, LLC
116 West 23rd Street, Suite 500, New York,
NY 10011, USA
Tel.: +1 212 244 7181
Fax: +1 212 224 7185

© 2018, Dental Tribune International GmbH

DENTAL TRIBUNE
The World's Dental Newspaper · Asia Pacific Edition

All rights reserved. Dental Tribune makes every effort to report clinical information and manufacturer's product news accurately, but cannot assume responsibility for the validity of product claims, or for typographical errors. The publishers also do not assume responsibility for product names or claims, or statements made by advertisers. Opinions expressed by authors are their own and may not reflect those of Dental Tribune International. Scan this code to subscribe our weekly *Dental Tribune AP* e-newsletter.

Presentations, lectures and workshops all set to feature at IDEM 2018

By DTI

SINGAPORE: The 2018 International Dental Exhibition and Meeting (IDEM) Singapore will be held from 13 to 15 April. With lectures presented by dentists, educators and researchers from around the globe, as well as presentations on contemporary clinical advancements, the tenth edition is poised to be as well received as that of previous years.

Furthermore, in addition to the main conference, a number of workshops will be held. According to the IDEM organisers, the workshops will seek to widen attendees' understanding and knowledge on particular topics. One such workshop will be held by Dr Galip Gürel. Based in Istanbul in Turkey, Gürel runs a six-chair practice with an in-house laboratory and presents across the globe. In a preceding session of lectures on 14 April, he will take participants through the process of a personalised smile design, detailing how the concept of Visagismile can be applied to achieve harmony between the patient's personality and the final smile.

The session will begin by detailing the importance of communication when applying a digital workflow, then move on to discussing the importance of a mock-up. Additionally, Gürel will touch on the soft tissue, implants and veneers. The lectures will also explain the differences between applying the 2-D Visagismile concept and using the 3-D REBEL program for smile design.

In the workshop on 15 April that leads on from Gürel's lectures, participants will have the opportunity to see the importance of the mock-up by creating one of their own based on the Visagismile concept. They will perform the entire process, including digital intraoral impression taking, creating the 3-D design in REBEL and 3-D printing in digital wax. In participating in the entire process, attendees will learn how to prepare teeth in a minimally invasive way through the aesthetic pre-evaluative temporaries.

More information on IDEM and the workshops can be obtained at the official event website www.idem-singapore.com.

AD

Fluor Protector N

The protective fluoride varnish

Superior protection against dental caries and erosion

The varnish for an immediate fluoridation of enamel

- Homogeneous solution
- Immediately ready for use
- High-yield delivery form

www.ivoclarvivadent.com
Ivoclar Vivadent AG
Bendererstr. 2 | 9494 Schaan | Liechtenstein | Tel. +423 235 35 35 | Fax +423 235 33 60

ivoclar vivadent®
passion vision innovation

Study shows positive influence on dental caries using a multilevel approach

By DTI

SAN FRANCISCO, US: According to a new study, a multilevel approach that includes a dental caries risk assessment, aggressive preventive measures and conservative restorations can dramatically reduce caries incidence. The findings, which support earlier research demonstrating positive results of the assessment and treatment method in a university setting, show that the protocol has the potential to transform dental care for high-risk patients.

"We put the 2012 UCSF [Caries Management by Risk Assessment] clinical study into the real world and showed it works," said lead author Dr. Peter Rechmann, Professor of Preventive and Restorative Dental Sciences at the University of California, San Francisco (UCSF) School of Dentistry. "The patients at high caries risk who used prescription products went down significantly over time in their risk level. Those in the control group also reduced their risk to a lesser degree, simply by using over-the-counter products that also protect teeth and affect the bacteria."

Caries Management by Risk Assessment (CAMBRA) is a method that was originally developed in 2003 by a team led by the Dean of the UCSF School of Dentistry Prof. John Featherstone. The method adopts a multilevel approach in which dentists collect patients' dental and medical histories, conduct clinical examinations to assess caries, and utilise behavioural approaches and chemical treatments to optimise protective factors.

For their two-year study, Rechmann and his colleagues recruited 30 dentists to take part, 18 from private practices and three from community clinics. The study involved 460 patients aged between 12 and 65, split into two groups: the CAMBRA group and control group, with 239 and 221 participants, respectively. In the CAMBRA group, high-risk patients received prescription fluoride toothpaste, a chlorhexidine antibacterial rinse, xylitol mints and a fluoride varnish. The control group received regular fluoride toothpaste, an assumed inactive mouthrinse, sorbitol candies and a nonfluoride varnish.

In follow-up visits at six, 12, 18 and 24 months, new carious lesions or changes in caries risk level were recorded. According to the results, a significantly greater percentage of high-risk participants were classified as lower risk after receiving CAMBRA preventive therapies. Dental caries was low in both groups.

Among 242 patients (137 intervention, 105 control) initially identified as high risk for caries, only a quarter of the patients remained at high risk in the CAMBRA group at 24 months, and just over half (54 per cent) in the control group. Of the 192 low-risk participants (93 intervention, 99 control), most participants remained low risk. The researchers believe this points to the assessment correctly identifying those at risk for caries.

The study, titled "Changes in caries risk in a practice-based randomized controlled trial," was published in the February issue of the *Advances in Dental Research* journal.

AD

www.idem-singapore.com

10th Edition

IDEM SINGAPORE

13 - 15 APRIL 2018
SUNTEC SINGAPORE

THE LEADING DENTAL EXHIBITION AND CONFERENCE IN ASIA PACIFIC

THE BUSINESS OF DENTISTRY

BUSINESS MATCHING

Schedule your meetings with buyers, traders and distributors before you step foot into IDEM! With only 3 days of exhibition, every minute counts. Plan your meetings ahead of time to maximise your visit and increase the number of interactions you have with relevant potential business partners with the IDEM business matching platform.

MEET OVER 500 EXHIBITORS

SPREAD OVER 20,000sqm OF EXHIBITION SPACE

REPRESENTING 38 COUNTRIES

SUPPORTED BY 13 NATIONAL PAVILIONS

INTERNATIONAL GUEST PERKS

CHANGI AIRPORT

International Participants to IDEM 2018 will receive a $20 voucher at Changi Airport. Simply register for IDEM to qualify.
(Terms and conditions apply.)

UBER

Promotional fares are available for travel to and from Suntec Singapore during show days.

SINGAPORE AIRLINES

Attractive airfare deals for selected flights are available when booked using IDEM 2018 preferred code: **ME17004**.

FREE ENTRY TO THE EXHIBITION IF YOU REGISTER BEFORE 30 MARCH

Registration
Koelnmesse Pte Ltd
Ms. Cindy Tantarica
T: +65 6500 6700
E: idem-reg@koelnmesse.com.sg

Connect with us
IDEM Singapore
IDEM Singapore
idem.sg

Endorsed by aif Approved International Fair
Supported by Singapore Exhibition & Convention Bureau
Held in Singapore Passion Made Possible
Organised by Singapore Dental Association
koelnmesse we energize your business | since 1924

Owandy
RADIOLOGY

IDEM #6H-08

I·max 3D

- Light & compact: 66kg
- 3D Cone Beam
- Multi FOV: from 9x9 to 5x5 cm
- HD : 87µm
- CAD/CAM ready
- Surgical guides
- Controlled budget

Discover our range of products: www.owandy.com

Owandy
RADIOLOGY

Owandy Radiology
2, rue des Vieilles Vignes
77183 Croissy-Beaubourg - FRANCE
Tel. + 33 (0) 1 64 11 18 18
info@owandy.com - www.owandy.com

Diet not solely to blame for tooth erosion

By DTI

LONDON, UK: Together with dental caries and periodontal disease, dental erosion ranks among the top three most prevalent dental conditions. According to a review paper by researchers in London, the reason some people suffer more from erosive tooth wear than others depends not only on their diet, but also on how they consume acidic beverages and foods.

The researchers, from King's College London Dental Institute, aimed to identify how different behaviours increased the risk of developing severe tooth erosion. Their research drew on a previous study at Guy's Hospital in London that compared the diet of 300 people with severe erosive tooth wear and of 300 people without.

The Dental Institute researchers found that those most affected were not those that simply consumed acidic drinks or food, but those who did so between meals. People who drank acidic drinks like soft drinks or fruit-flavoured teas twice a day were 11 times more likely to have moderate or severe erosion compared with those who did not.

Among the groups with high potential for tooth erosion are wine drinkers, long-distance drivers and video gamers, all of whom continually expose their teeth to acidic drinks by swishing or rinsing the liquid around or holding it in their mouths, the researchers said.

"It is well known that an acidic diet is associated with erosive tooth wear; however, our study has shown the impact of the way in which acidic food and drinks are consumed," said lead author of the study Dr Saoirse O'Toole, clinical lecturer in prosthodontics.

She continued that, with the prevalence of erosive tooth wear increasing, the preventable aspects, such as reducing dietary acid intake for the purpose of delaying progression of tooth erosion, have to be addressed. The risk from soft drinks, for example, can be halved when such beverages are consumed during meals.

"While behaviour change can be difficult to achieve, specific, targeted behavioural interventions may prove successful," O'Toole added.

In countries like the UK, currently over 30 per cent of adults are estimated to suffer from tooth erosion, which can lead to severe loss of enamel and dentine over time.

The study, titled "The role of the diet in tooth wear", was published online in the *British Dental Journal* on 23 February 2018.

AD

– regular e-news delivered to your inbox
– individualized content according to your specialty & region
– latest industry developments
– event specials
– exclusive interviews with key opinion leaders
– product information
– clinical cases
– job adverts

Sign up to the finest e-read in dentistry

www.dental-tribune.com

dti Dental Tribune International

New W&H image campaign to support everyday heroes

By DTI

With its new image campaign "From a patient to a fan", W&H is directing the spotlight on dentists and dental professionals. These everyday heroes ensure their patients are in safe and reliable hands in every treatment situation. They always show great dedication to their work and continuously manage to put a smile on their patients' faces, simply because they care. Even the smallest of their patients' difficulties is a major concern. That is why they are always gaining new "fans" and succeed again in making their patients happy.

The new W&H image campaign gives these heroes the recognition they deserve. With a perfect balance of know-how, empathy and technology, they can achieve optimal results. W&H supports the practice team with its daily tasks and is a cornerstone of its success with its innovative product portfolio.

"The daily challenges faced by the practice team are our motivation. As a solutions provider, our products help ensure that the workflow in the dental practice is as smooth as possible," states W&H Managing Director Peter Malata. "With innovative dental technology that is ideally suited to the users' needs, the team can give their full and undivided attention to what really matters: the patient. We play an important role in our customers' success and assist them in turning patients into fans."

The new campaign aims to portray W&H in an eye-catching manner and differentiate it from the competition, all with the customary twinkle in the eye. In the eyes of their patients, dentists become Dr Phil Good, Dr X. Pert or Dr Sue Perstar, and thus the living embodiment of well-being, expertise, innovative spirit and trust. The result is a modern, internationally adaptable campaign format with emotive images from dental practice. A striking nameplate has been developed as an overarching key visual, clearly communicating the respective names such as Dr Phil Good or Dr X. Pert.

W&H Managing Director Peter Malata

The new W&H image campaign was launched across all W&H media channels beginning March 2018.

AD

APOC
BORACAY ISLAND
2018
PHILIPPINES

THE 11TH ASIAN PACIFIC ORTHODONTIC CONFERENCE

Earn up to 15 CPD points!

Asia Pacific's Premier Event for Orthodontic Practice & Technology

Culture of Smiles

The **11th Asian Pacific Orthodontic Conference APOC2018** with the theme, **Culture of Smiles** will be held from 5-7 March 2018 in the beautiful island of Boracay! Proudly hosted by the **Association of Philippine Orthodontists (APO)**, this biennial event will draw in at least 500 key leader-delegates from the 18 member countries of the Asian Pacific Orthodontic Society (APOS) to attend.

The APOS's 18 member-countries represent the fasting growing region with 49% of the total world's population and 33% of the global GDP whose many countries enjoy unprecedented powerful growth rates as seen in the availability and delivery of orthodontic care.

APOS is diverse in culture and disparate geographically but drawn together to this key regional orthodontic conference that showcases Clinical Excellence with the Latest of the Best through the wide array of exhibits and the 16 renowned speakers from around the world.

Visit www.apoc2018.org NOW!

For more information, please contact:
Ms Cecelia Calzada
Industry Liaison and Sales Specialist
Email: ccalzada@kenes.com
DID: +65 6292 4706

HIGHLIGHTS

- Meet and network with like-minded professionals coming from the region and beyond which includes group delegations from the 18 member countries of the Asian Pacific Orthodontic Society
- Widen your horizon at the 3-days scientific program by 16 international renowned speakers and attend The 2nd APOS Residents' Forum, the pre-conference event to hear the latest clinical research and developments from the graduate programs regionally
- The Opportunity to Make a Poster or Oral Presentation to strike an impact on your professional development
- Claim up to 15 PRC Points for Professional Development requirements
- What's a better place but Boracay? Unwind at the beachfront gala dinner and other social programs for more networking opportunities
- Discover new orthodontic products and get close with the suppliers

PRIME SPONSORSHIP & EXHIBITION OPPORTUNITIES

APOC 2018 offers unparalleled opportunities for you to stay at the forefront. Meet high quality buyers and network with your target audience from the region and beyond with our holistic suite of high-level conferences and social programmes finely implemented to drive your business to further heights.

Accelerate your **Business Growth** and be at the **Global Spotlight** with us **Now!**

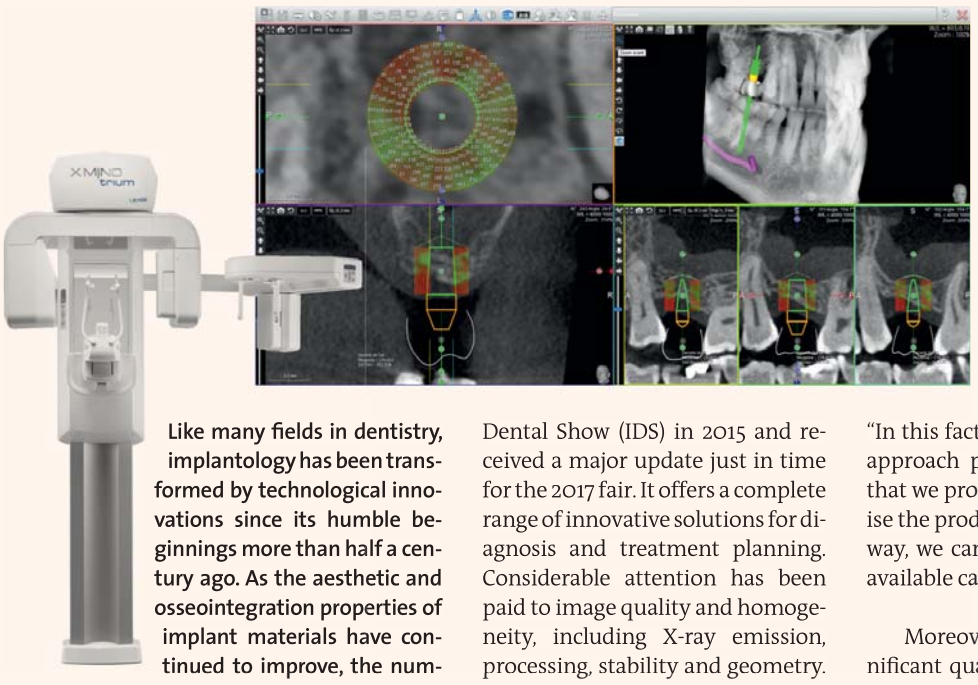
FIRST 500 BOOKINGS WILL RECEIVE A COMPLIMENTARY SOUVENIR FROM PHILIPPINE AIRLINES!

Official participants of **APOC 2018** is entitled to **Less 10%** on International Web Fares and Less 5% on Domestic Web Fares. (Terms & Conditions Apply)

Organized By: KENES GROUP SINGAPORE
ASSOCIATION OF PHILIPPINE ORTHODONTISTS (APO) APOS ASIAN PACIFIC ORTHODONTIC SOCIETY
AN ASIAN PACIFIC ORTHODONTIC SOCIETY (APOS) EVENT
Official Hotels: CRIMSON RESORT & SPA BORACAY · MÖVENPICK RESORT & SPA BORACAY · SAVOY HOTEL
Official Airline: Philippine Airlines The Heart of the Filipino

A whole new dimension of imaging precision

By Julia Maciejek, DTI



Like many fields in dentistry, implantology has been transformed by technological innovations since its humble beginnings more than half a century ago. As the aesthetic and osseointegration properties of implant materials have continued to improve, the number of dental patients opting for implants has risen steadily. With this increase in procedures has come a demand for atraumatic and safe surgery with fewer postsurgical complications. Since 2005, French company ACTEON has established itself as a leader in digital medical imaging and high-frequency ultrasonic devices. Supported by its excellent clinical results, ACTEON continues to push the boundaries of what is possible in implantology as it seeks to provide products that optimise both the patient's and the dentist's experience.

With an emphasis on research and development in dentistry and medicine, ACTEON has successfully expanded its offering and introduced several new products earlier this year. Its two multidisciplinary research and development teams and four manufacturing plants are all located in western Europe: in Mérignac (equipment and pharmaceuticals) and La Ciotat in France (dental imaging), Tuttlingen in Germany (medical imaging) and Milan in Italy (dental imaging). These teams work very closely together and production processes are highly controlled owing to their geographical proximity. This is further enhanced through collaboration with international dental surgeons, leading to the manufacture of devices that, according to ACTEON, deliver the best results for patients through minimally invasive and less traumatic treatments.

ACTEON granted *Dental Tribune International* an exclusive look behind the scenes of its 3,200 m² manufacturing plant in Milan, where many of the company's intraoral and extraoral imaging devices are produced. The team was proud to introduce its flagship model: X-Mind trium. This extraoral radiographic unit was first introduced at the International Dental Show (IDS) in 2015 and received a major update just in time for the 2017 fair. It offers a complete range of innovative solutions for diagnosis and treatment planning. Considerable attention has been paid to image quality and homogeneity, including X-ray emission, processing, stability and geometry. "X-Mind trium combines CBCT, panoramic and cephalometric imaging, which is why it is called a three-in-one device," explained Claudio Giani, director of imaging research and development at the Milan site. He demonstrated that CBCT imaging is accomplished using a rotating gantry with a fixed X-ray source and a detector. Giani told us that, during the rotation, multiple sequential projection images, ranging from 150 to 450, are acquired to complete the arc. This procedure varies from a conventional medical CT scan, which uses a fan-shaped X-ray beam in a helical progression to acquire individual image slices of the field of view (FOV) and then stacks the slices to obtain a 3-D representation.

When we first approached X-Mind trium, we noticed right away the distinctive ergonomics of the radiographic unit. The device has an extremely short U-arm, which moves around the patient during the image acquisition phase. This is supported by the patented kinematics and collimation and aids comfortable positioning of the patient's jaw. The entire system is designed with ergonomic efficiency in mind and takes up very little space in the practice room. With a secondary collimator (X-ray tube assembly) installed, the patient is not exposed to additional collimator movements.

Excellent quality assurance

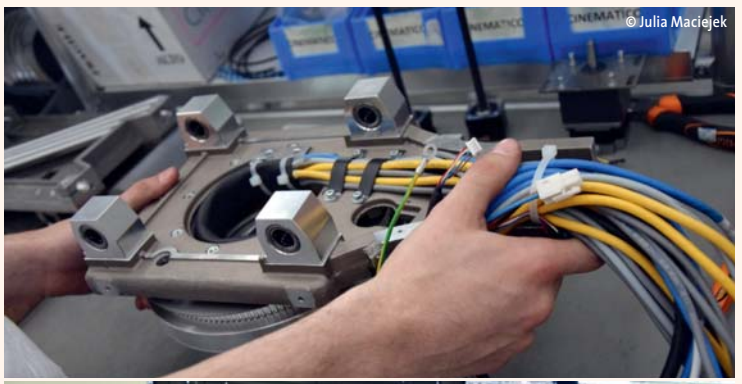
ACTEON produces high-end quality products that undergo a tried-and-tested quality control process. "The production of X-Mind trium has risen month after month, especially since we obtained U.S. Food and Drug Administration approval and then launched X-Mind trium in the US," stated Alvise Reither, the Milan factory manager. He explained that, by changing the factory's layout and the flow of materials, new workflow processes were established. The manufacturing plant is continuously expanding, and with additional operators, it is able to meet the demands of the market. "In this factory, we use the Kanban approach principle, which means that we produce on stock, but finalise the product based on order. This way, we can balance demand with available capacity," added Reither.

Moreover, ACTEON applies significant quality controls during all processes, from the assembly of the core of the machine to final testing, which includes checking of the components and the configuration of the workstation. According to the factory manager, this procedure has been streamlined significantly in comparison to last year. Reither showed us a large number of testing cabinets containing devices being checked. With complete concentration, employees in front of computers verify the correctness of every step before the X-Mind trium units are distributed. It is in this context that a large quantity of X-Mind trium devices are manufactured, tested and shipped each week.

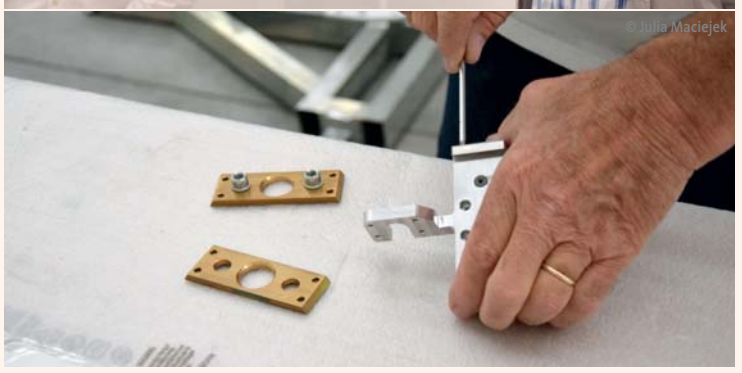
"We have an excellent product quality. We want to ensure a high-quality standard, so employees take turns at the workstations. We also want to make sure that each employee knows and understands all the processes leading up to the finalisation of the product, establishing an appreciation of the importance of each step in the assembly. We further want our employees to respect ACTEON's standard of quality. This follows the two steps of the quality control: (1) checking that all cables and parts are well assembled and (2) testing the machine's functionality in the testing cabinets. Our quality manager also inspects the components when they are sent to us and before we put them into stock. No parts are assembled externally. A mix of components, cables, mechanical parts, motors and sensors are assembled by hand. That is also part of our quality management," Reither detailed.

Sharp images

Excellent image quality is essential for treatment planning and diagnosis. In CBCT, exposure is incorporated in the FOV. This means that only one rotational sequence of the gantry is necessary to acquire enough data for image reconstruction. "In implantology, a CBCT image is indispensable for planning simulation and determining the exact nerve location. With only one image, the entire dental arch can be visualised, which allows for optimal diagnostic planning possibilities. X-Mind trium has a range of FOV options displayed in detail and without movement artefacts. He emphasised that the exposure time is very low and the reconstruction time is three seconds. We saw that, with a cephalometric image, the entire maxillofacial area is shown, making it highly suitable for oral and maxillofacial surgeons. Furthermore, it has a small voxel size of only 75 µm and a fast reconstruction time of 29 seconds. X-Mind trium can be equipped with one or two sensors for an efficient workflow.


© Julia Maciejek

© Julia Maciejek


© Julia Maciejek

With ACTEON's expertise in medical imaging, a dedicated analytical algorithm has been implemented for X-Mind trium. "We have achieved exceptional results, which are able to provide advanced clinical indicators that will be helpful for practitioners in the future," stated Giani proudly. "The analytical algorithm has been developed in terms of the graphics processing unit (GPU) and a specific type of GPU is installed inside the workstation of X-Mind trium when the CBCT function is configured," explained Giani.

This algorithm is used to determine the apparent image definition and bone density to facilitate clinical decision-making. The filters ensure detailed recording of the image acquisition by low-noise microstepping motors.

Low radiation dose

With X-Mind trium, high radiation exposure is a thing of the past. The low-radiation protocol decreases the required amount of X-ray emissions by a third using the algebraic reconstruction technique. This means that the radiation dose for the patient can be reduced by 50 to 70 per cent. This low-dose imaging guarantees a maximum FOV with minimal radiation exposure to the patient. "This is essential because we do not care only about good images but also about the well-being of the patients," stated Reither. Furthermore, the software of X-Mind trium monitors radia-

tion and ensures that the levels of exposure are kept low.

User-friendly software

Computer scientists would say the software is as important as the hardware. ACTEON provides intuitive and ergonomic imaging software that has all the required functions—scanning, measuring, editing, commenting. In the factory cellar, Reither explained the special features of the ACTEON Imaging Suite software and stated that it can be linked to most practice management software and all ACTEON imaging products, such as the X-Mind trium, CBCT and panoramic devices, and intraoral scanners. It is compatible with both macOS (and soon iOS) and Windows and has a TWAIN driver for full compatibility with all imaging software. This gives practitioners the ability to move around and interact directly with their patients.

The radiographic unit is in continual operation at most dental practices. It is clearly imperative then to ensure that dental professionals have the skills to adequately handle the devices and take high-quality images with the correct settings. "The user-friendly software enables the customer to either use the workstation provided or use their own. However, with the workstation provided, our professional and efficient team of service technicians can perform remote connections to solve problems of configuration or calibration. We want our customers to choose the software option that is best for them," explained Reither.

Safe surgery

X-Mind trium offers extraordinary functionality in the field of implantology, making it suitable for more demanding treatments. Misleading or insufficient information obtained from a radiograph can lead to the loss of an implant, one of the worst scenarios for both the patient and the dentist. "In pre-implant procedures, accurate measurements of the bone density and volume are essential to guarantee a higher success rate in implantology. The 3-D capability of X-Mind trium also facilitates safer osseointegration," said Giani. Clinical decision-making has seemingly become easier than ever with X-Mind trium.

Certainly, our tour would not have been complete without a look at ACTEON's well-known Piezotome ultrasonic brand. Thousands of dentists worldwide have adopted the company's celebrated Piezotome devices as their choice for pre-implant surgery, with Piezotome Cube representing ACTEON's new standard. It is a powerful ultrasonic device with a rotary motor, as well as a handpiece and a tip, ensuring optimum performance. Leading oral surgeon and implantologist Dr Angelo Trödhan successfully uses Piezotome Cube in his everyday treatment procedures. "The Piezotome's ergonomics makes the device naturally intuitive and reliable. Furthermore, it enables surgeons with less experience to perform a variety of treatments. In accordance with the cutting selectivity, soft tissue (membranes and nerves) is preserved. During piezoelectric surgery, fine and precise cuts minimise bone loss. In 98 per cent of cases, patients do not need to use analgesics postoperatively and barely any swelling is observed. Surgery with Piezotome Cube maintains the patient's quality of life," said Trödhan.

In implantology, bone grafting materials may be necessary for the implant to succeed. For this reason, QUALIOS was developed, and it was first introduced at IDS 2017. The material has a unique bone-supporting structure and high level of mechanical resistance. Its large interconnected pores make it particularly suited to bone colonisation, and it is completely resorbable, ensuring high-quality bone regeneration. Being entirely synthetic, it is free of any contamination risk that comes with products of animal or human origin. It is clear from this that QUALIOS complements ACTEON's implantology product line.

In ACTEON's continuous product expansion, patients' well-being continues to be the top priority. We felt the passion employees put into their daily work to support ACTEON's innovative portfolio for imaging and piezoelectric surgery. These products have positioned the company as a pioneer in oral surgery and dentistry. They are less invasive, safer and faster to operate, and provide patients and practitioners with the best treatment options available.

AD