IMPLANT TRIBUNE

The World's Dental Implant Newspaper · U.S. Edition

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Titanium implants may carry risk of corrosion

Titanium was first discovered in England in 1791. Today, it occurs mainly in Australia, North America, Malaysia, Russia and Scandinavia. (Photos/Provided by concept w and Sergey Shcherbakoff, Shutterstock)

By Dental Tribune International

BIRMINGHAM, U.K.: Titanium medical implants used in dental prostheses and bone-anchored hearing aids may be less robust than commonly believed. Researchers have found evidence to suggest that in environments where there is no significant wear process, microscopic particles of titanium can be found in the surrounding tissue, which may have a negative impact on the devices, as this can potentially be pro-inflammatory.

Globally, more than 1,000 tons of titanium are implanted into patients in the form of biomedical devices every year. Metallic prostheses, fixation and anchoring devices are used extensively for dental, orthopedic and craniofacial rehabilitation and their effects on the body are widely perceived to be predictable following initial implantation.

▸ See TITANIUM, page C7

ICOI celebrates its 40th anniversary at World Congress XXIX in Orlando

The ICOI will commemorate 40 years of implant education and camaraderie when it holds its World Congress XXIX in Orlando from Sept. 20–22. The venue for this World Congress will be the World Center Marriott Hotel.

Since its inception in 1972 at its first World Congress in Paris, the ICOI has grown from a fledgling "study club" to more than 13,000 dues-paying members in 2012. Its membership spans to all continents save for Antarctica. Initially, the ICOI office was run out of ICOI co-chair, Dr. Kenneth Judy's office, then from an office in his home. The ICOI now occupies an entire floor of an office building in Upper Montclair, N.J.

To help the ICOI acknowledge its 40th anniversary, leaders from its component and affiliate societies around the world, as well as members of its International Ambassadors' Circle, will be present in Orlando.

Dr. John Russo created and prepared the scientific program for the Orlando World Congress. A diversified and international faculty will honor this World Congress, he said.

The complete scientific program is as follows:

Thursday, September 20

Afternoon session host: Dr. John Russo

12:45 to 1 p.m. – Opening comments, Drs. Kenneth Judy, Jon Suzuki and John Russo

1 to 2 p.m. – Dr. Michael Pikos: "Alveolar Ridge Regenerative Strategies – Autogenous Bone vs. Tissue Engineering"

2 to 3 p.m. – Dr. Richard Kraut: "Predictable Horizontal and Vertical Bone Augmentation of the Alveolar Ridges"

3 to 3:30 p.m. – Break with exhibitors

3:30 p.m. to 4:30 p.m. – Dr. Jon Suzuki: "Clinical Advances in Implant Regeneration Surgery"

4:30 to 5:30 p.m. – Ulrich Hauschild: "The Standardization of Computer-Aided Implantology Process Visualized on Complex Cases"

5:30 to 6:30 p.m. – Dr. Kenneth Hebel: "The Revolutionary Digital Denture: A Game Changer for Implant Dentistry"

6:30 to 8 p.m. – Tabletop and Poster Presentations/Welcome Reception

Friday, Sept. 21

Morning session host: Dr. Thomas Ford

8 to 9 a.m. – Dr. Craig Misch: "Emerging Trends in Methods and Materials for Bone Augmentation"

9 to 10 a.m. – Dr. Edwin McGlumphy: "The Edentulous Maxilla: Questions and Answers to Current Implant Controversies"

10 to 10:30 a.m. – Break with exhibitors

10:30 to 11:30 a.m. – Dr. Robert Marx: "The Effective Use of (rhBMP-2) in Ridge Augmentation Prior to Implant Placement"

11:30 a.m. to 12:30 p.m. – Dr. Bradley McAllister: "Bone Augmentation with Cellular Allograft"

12:30 to 1:30 p.m. – Lunch with exhibitors

Friday, Sept. 21

Afternoon session host: Dr. Thomas Ford

1:30 to 2:30 p.m. – Dr. Carl Misch:

▸ See ICOI, page C2

◂ ICOI, Page C1

"Prosthetic-Related Complications"

2:30 to 3:30 p.m. – Dr. Rick Ferguson: "Bone Grafting – Misconceptions and Strategies for Predictable Success"

3:30 to 4:15 p.m. – Break with exhibitors

4:15 to 5 p.m. – Dr. Shohei Kasugai: "New Approach to Bone Augmentation: Respecting Endogenous Key Players and Providing Space for Regeneration"

5 to 6 p.m. – Dr. John Russo: "Reduce Complications, Increase Confidence, Achieve Excellence"

7 to 8 p.m. – Awards ceremony

Saturday, Sept. 22

Morning session host: Dr. Rick Ferguson

8 to 9 a.m. – Dr. Bach Le: "Management of the Ailing Implant"

9 to 10 a.m. – Dr. Pablo Galindo Moreno: "Bone Level Stability Around Implants Placed in Pristine and Grafted Areas"

10 to 10:30 a.m. – Break with exhibitors

10:30 to 11:30 a.m. – Dr. Maurice Salama: "Contemporary Reconstructive Hard- and Soft-Tissue Surgery: Myths, Realities and Future Trend in Dentistry"

11:30 a.m. to 12:30 p.m. – Dr. Jeremy Mao: "Regenerative Dental Products: Science Fiction or Reality"

12:30 to 1:30 p.m. – Lunch with exhibitors

Saturday, Sept. 22, 2012

Afternoon session host: Dr. Scott Ganz

1:30 to 2:30 p.m. – Dr. Alan Fetner: "Subcrestal Implant Placement to Optimize Soft-Tissue Esthetics – Controversy and Practicality"

2:30 to 3:30 p.m. – Dr. Fred Bergmann: "Current Protocol of Bone and Soft-Tissue Management in the Atrophic Alveolar Ridge for the Long-Term Esthetic and Functional Outcome"

3:30 to 4 p.m. – Break with exhibitors

4 to 4:45 p.m. – Dr. Scott Ganz: "A Comparison of Interactive Software Applications in Assessing the Reality of Anatomy: Diagnostics and Implant Planning Accuracy"

4:45 to 5:30 p.m. – Dr. Ady Palti: "Soft-Tissue Management for Esthetic Results with Modified Abutments. A New Concept for the Daily Practice"

5:30 to 6 p.m. – Dr. Mariano Herrero Climent: "Surgical Decision Making in Esthetic Implant Dentistry"

6 to 6:30 p.m. – Dr. Konstantinos Valavanis: "Perimplant Tissue Design: Parameters and Key Factors for Optimum Esthetics"

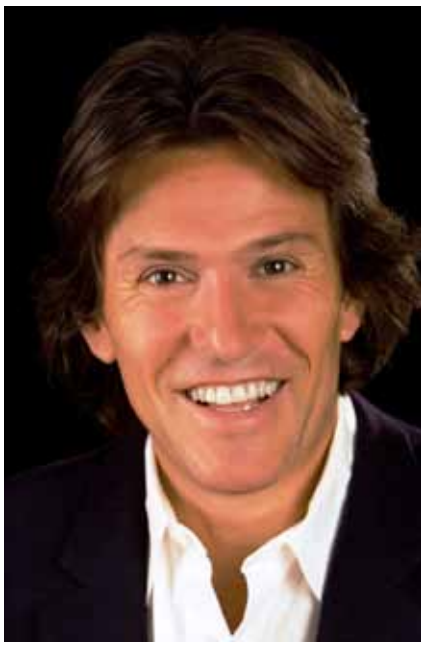
6:30 p.m. – Closing comments, Drs. Jon Suzuki and John Russo

A large number of sponsored pre-congress courses will be offered on Thursday morning, Sept. 20.

The event's Gold Sponsors, DENTSPLY IMPLANTS and MIS, will provide hands-on courses.

Dr. Jin Kim, and his sponsor, DENTSPLY, will wow attendees with his course on "Mastering Clinical Digital Photography," organizers said. Among other things, this course will instruct attendees on mastering the techniques for surgical and cosmetic operative documentation purposes.

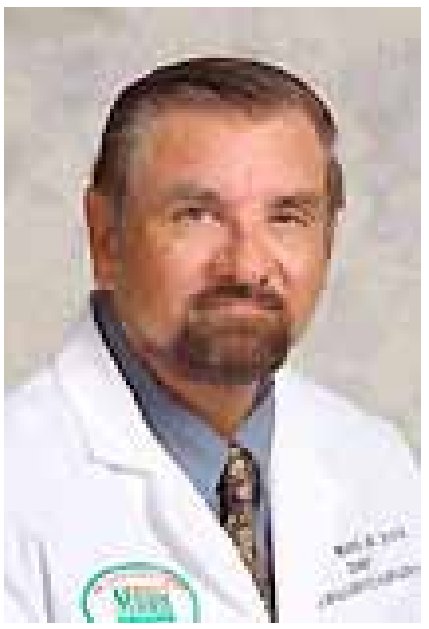
MIS's representative, Dr. Amos Yahav, will cover "Bone Augmentation and Ridge Preservation for Implant Placement," utilizing bone-grafting materials and hard-tissue models for hands-on experience.



Dr. Maurice Salama. (Photos/Provided by ICOI)

Dr. Michael Pikos

Dr. Carl Misch



Dr. Bob Marx

Silver Sponsors will also conduct pre-congress courses, starting with Osteogenics and Dr. Michael Pikos, whose topic will be "Extraction Site Management for Implant Reconstruction: Hands-on Workshop." The hands-on segment will include models for socket grafting, connective tissue grafting and free gingival grafting.

Dr. Dennis Smiler and NUBONE will provide a hands-on workshop on "Solving the Challenges of Bone Graft Success: Successful Grafts with Stem Cells, Stemvie Matrix, Growth Factors." Attendees at this course will receive anatomic take-home models, DVD movies of bone morrow aspiration technique and a sterile sample of StemVie Graft Matrix.

Dr. Carl Misch will discuss "Controversies in Implant Number" for BioHorizons. Attendees at this course will learn the guidelines that determine implant number and the treatment planning for multiple missing teeth. Dr. Louie Al-Faraje will focus on the mini-dental implant phenomenon in his lecture for 3M ESPE on "Small-Diameter Implants for the Modern Implant Practice: Treatment Options and Indication for Fixed and Removable Prostheses."

Dr. Leonard "Lenny" Linkow will provide a historical examination of and a prognosis for the future of the implant field in his course on "Implant Dentistry: What Was, What Is and What Probably Will Be," organizers said. Linkow's course will evaluate where we are today with all materials and techniques, educations processes and programs worldwide.

Drs. Michael Toffler and Barry Zweig and Hiossen will hold a course on "Sinus Augmentation; Crestal and Lateral Approaches; Challenges and Solutions." Objectives of this course include an understanding of new and safer approaches to sinus lifting.

Rounding out this World Congress will be a 2½-day ADIA program for the auxiliary staff members. On Thursday and Friday, the event's main podium will feature Drs. Jon Suzuki, Rick Ferguson, Kathy Ferguson, Carl Misch, Kostas Valavanis and Scott Ganz and Joy Millis, Emily Duross, Seon Jaromillo, Laura Jamison and Lynn Mortilla.

As is customary, the event's last day, Saturday, will be devoted to four simultaneous certification programs for dental hygienists, dental assisting, practice management and implant coordinator training. These courses are always lively and always filled, organizers said, so plan to enroll soon.

For more information on this meeting, visit ICOI's web site at *www.icoi.org*.

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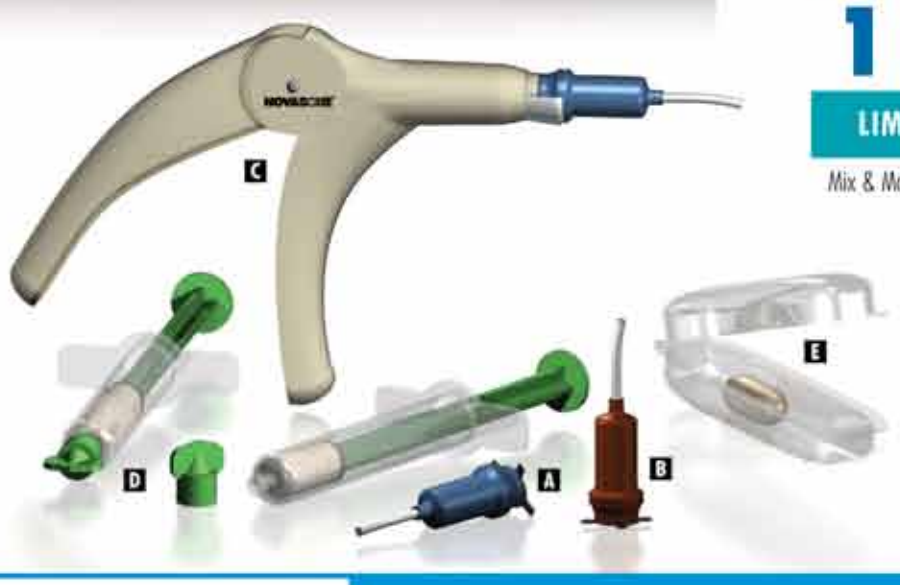

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AAOMS to host 94th annual meeting at San Diego Convention Center

The American Association of Oral and Maxillofacial Surgeons will head to the San Diego Convention Center, left, for its 94th annual meeting from Sept. 10-15.

Photo/Provided by Timothy Hursley

Dr. Peter Moy will speak at the AAOMS annual meeting in September.

Rousing topics, a scenic locale and a visit to the ballfield are on tap for this September event

By Sierra Rendon, Managing Editor

The American Association of Oral and Maxillofacial Surgeons will host its 94th annual meeting, scientific sessions and exhibition from Sept. 10-15 at the San Diego Convention Center.

The AAOMS annual meeting attracts more than 3,200 members and more than 5,500 registrants.

Speakers and sessions include Dr. Lyndon F. Cooper speaking on "Graft Solutions for Fixed Prosthetics;" Dr. Edwin A. McGlumphy speaking on "Graftless Solutions With Angled Implants With Hybrid Prostheses;" Dr. Peter Moy on "Graftless Solutions With Angled Implants With Hybrid Prostheses;" and many more.

Educational sessions and the exhibition will take place at the San Diego Convention Center, unless otherwise noted. Business sessions, opening ceremony, welcome reception, some educational sessions and other social functions will take place at the headquarters hotel, the Hilton San Diego Bayfront, unless otherwise specified.

Exhibition hall hours

The AAOMS exhibition hall will be filled with hundreds of exhibitors providing the latest and greatest in implants and related technology.

The schedule for the exhibition hall:

- *Thursday, Sept. 13:*

9 a.m. – 5 p.m.

- *Friday, Sept. 14:*

9 a.m. - 5 p.m.

- *Saturday, Sept. 15:*

9 a.m. - 1 p.m.

President's event

For one memorable night, Petco Park, home of the San Diego Padres, will be transformed in celebration of the 2012 AAOMS Annual Meeting President's Event honoring President Arthur C. Jee, DMD, and his wife, Martha. During this event, from 7-10 p.m. Thursday, Sept. 13, at what has been called "the world's best ballpark in America's finest city," you and your guests will party where the players play.

You'll be able to roam the outfield, take batting practice — even sit in the dugout. Try your hand at inflatable speed pitch, inflatable basketball, or fantasy baseball, which includes batting cage, pitchers, ball shaggers, batting helmets, bats and balls. After working up an appetite, attendees can visit the lavish buffet for which AAOMS President's Events are justifiably renowned.

Information and registration

For more information on the AAOMS annual session and events, visit *www.aaoms.org/annual_meeting/2012/.*

AD

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Report: Selective use of CBCT offers advanced imaging modality

In the August issue of The Journal of the American Dental Association, the American Dental Association's (ADA) Council on Scientific Affairs (CSA) presents an ADA report with recommendations for the safe use of cone-beam computed tomography (CBCT) in dental practice. This imaging method provides three-dimensional detail of oral and maxillofacial structures, which can help clinicians, provide improved treatment and lead to better patient outcomes.

The published recommendations provide essential principles for consideration in the selection of CBCT imaging for individual patient care. Importantly, clinicians should perform radiographic imaging, including CBCT, only after professional justification that the potential clinical benefits will outweigh the risks associated with exposure to ionizing radiation. However, CBCT may supplement or replace conventional dental X-rays when the conventional images will not adequately capture the needed information.

The statement emphasizes the application of professional judgment in clinical decision-making that is informed by the latest scientific evidence and professional guidance. A guiding principle for use of all X-rays, including CBCT, is to keep radiation exposure as low as reasonably achievable ("ALARA"). The new statement incorporates the ALARA principle while also recognizing the need to expand pre-doctoral and continuing dental education on CBCT use and image interpretation. Actions recommended to help achieve this principle include: consulting with a medical physicist or other qualified expert to perform equipment evaluations at installation; confirming compliance with local, state and federal requirements at least annually; and establishing a facility quality control program.

CBCT technologies offer an advanced point-of-care imaging modality that has developed into an important adjunct to conventional radiography. As a science-based organization, the ADA supports ongoing research on CBCT and all aspects of dentistry that will help to ensure patient safety, enhance preventive care and facilitate the management and treatment of oral diseases. The ADA encourages patients to talk with their dentists about the use of CBCT imaging and all aspects of their dental care.

About the ADA

The not-for-profit ADA is the nation's largest dental association, representing more than 156,000 dentist members. For more information about the ADA, visit the association's website at *www.ada.org.*

◂ TITANIUM, Page C1

For this study, Dr Owen Addison in the biomaterials unit of the University of Birmingham's School of Dentistry and his team obtained tissue from patients undergoing scheduled revision surgery associated with bone-anchored hearing aids (BAHA) at University Hospitals Birmingham NHS Foundation Trust. Soft tissue surrounding commercially pure titanium anchorage devices was examined using micro-focus synchrotron X-ray spectroscopy at the Diamond Light Source, Oxford, U.K.

"The results showed, for the first time, a scattered and heterogeneous distribution of titanium in inflamed tissue taken from around failing skin-penetrating titanium implants," the authors reported. "Wear processes and implant debris were unlikely to be major contributors to the problem. In the absence of obvious macroscopic wear or loading processes, we propose that the titanium in the tissue results from micro-motion and localized corrosion in surface crevices."

The development of peri-implant inflammation may result in the premature loss of the implanted device or the requirement for revision/rescue surgery, which are scenarios that can "impact on patients' well-being and economically on the health service provider," the authors concluded in the study.

"Our results emphasise the need to understand further both the physical and chemical mechanisms leading to the dispersal of titanium species in tissue around implants and their potential to exacerbate inflammation. Similar processes are likely to contribute to the failure of other metal implants in soft tissues, where macroscopic wear is not considered to be a risk."

Addison commented: "Titanium is still the most appropriate material to put into bone and to be used in these devices. It is the gold standard. However, these interesting findings demonstrate that improvements in these materials can be sought.

"Research at Birmingham is currently being conducted to look at the biological consequences of these findings and to understand the mechanisms by which the debris is produced. This should in no way alarm those with BAHA implants or similar devices."

The study "Do 'passive' medical titanium surfaces deteriorate in service in the absence of wear?" was published online during July in the Journal of the Royal Society Interface.

AD

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Courtesy of Dr. Stuart Froum, 2001

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* Artzi Z, Nemcovsky CE, Dayan D. Nonceramic hydroxyapatite bone derivatives in sinus augmentation procedures: Clinical and histomorphometric observations in 10 consecutive cases. Int J Periodontics Restorative Dent 2001; 21:381-389 Fugazzotto PA, Vlassis J. Int J Oral Maxillofacial Implants 1998; 13:155-58

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3Shape TRIOS digital impression solution now with implant scanning

TRIOS captures implant positions and soft-tissue emergence profile in unique dual-step workflow

3Shape, a technology leader in 3-D scanning and CAD/CAM software for dental applications, announces its latest breakthrough innovations for implant work. With 3Shape TRIOS®, dentists can now capture single implant positions using autoclavable scan bodies supporting a wide range of implant systems.

Implant cases made easy for dentists

For dentists, digital impression-taking with 3Shape TRIOS represents many advantages. The straightforward workflow replaces conventional implant impression-taking which traditionally can be time-consuming, error-prone and cumbersome. Furthermore, with TRIOS digital impressions, dentists can save time and money by skipping the extra steps involving custom tray production, shipping and handling by the lab.

"Scanning with 3Shape TRIOS makes implant cases easy. It allows me to capture not only the implant positions, but also the soft tissue," said Dr. Simon Kold of Herning Implant Center. "By adding scans of the soft-tissue emergence profile, I can give my lab detailed information that allows it to optimize the fit and esthetic qualities of the customized abutment and final restoration. This is great for clinical and esthetic results while boosting patient satisfaction."

New implant service opportunities for labs

With TRIOS, labs can receive the digital impression minutes after scanning and can immediately start designing the digital implant model, the customized abutment and the crown. The TRIOS digital implant impression, 3Shape's Model Builder™ and its Abutment Designer™ software come together in a fully integrated workflow.

3Shape's Model Builder CAD/CAM software allows labs to design digital models for implant cases. Based on the software's implant position detection, users can virtually add interfaces for implant analogs, including glue-in analogs, directly in the model design.

3Shape TRIOS is currently available in Europe and is expected to be launched in North America and other selected markets in Q3 2012. TRIOS implant scanning is available with TRIOS software version 1.1.2.0.

About 3Shape A/S

3Shape A/S is a Danish company specializing in the development and marketing of 3-D scanners and CAD/CAM software solutions designed for the creation, processing, analysis and management of high-quality 3-D data for application in complex manufacturing processes. 3Shape envisions the age of the "full digital dental lab," and its more than 130 developers provide innovation power toward reaching this goal.

3Shape's flexible solutions empower dental professionals through automation of real workflows, and its systems are applied in thousands of labs in more than 85 countries worldwide, putting 3Shape technologies at the peak of the market in relation to units produced per day by dental technicians. 3Shape boosts its first-line distributor support network with a second-line support force of more than 30 in-house experts placed in five support and service centers strategically placed around the globe. 3Shape is a privately-held company headquartered in Copenhagen, with the market's largest team dedicated to scanner and software development for the dental segment based in Denmark and Ukraine, production facilities in Poland, and business development and support offices in New Jersey and Asia.

For further information regarding 3Shape, please refer to *www.3shapedental.com*.

3Shape TRIOS. (Photos/Provided by 3Shape)

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