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MERCURY

Since the Minamata Convention finalised, the world has been taking serious action to eliminate products and processes that use or contain mercury.



INTERVIEW

Prof. Dov Sydney from USA/Israel and Prof. Mauro Labanca from Italy about the upcoming first World Congress on Controversies in Dentistry.

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TRENDS & APPLICATIONS

The use of all-ceramics and CAD/CAM technology: An ideal combination for optimised aesthetic success in restorative dentistry.

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Study finds varying disinfection protocols of endodontists & GPs

By DTI

MADRID, Spain: A team of researchers from the department of endodontics at Universidad Rey Juan Carlos in Madrid has conducted a study to determine whether there are differences in the disinfection protocols of endodontists and general dentists. The scientists found that endodontists are more likely to keep up to date with protocols published in the literature, whereas general dentists rely on protocols learnt during their dental training.

The study authors sent out an invitation to participate in an online survey to 950 dentists affiliated with the Spanish board of dentistry. The survey consisted of nine questions regarding irrigation protocols and other factors related to disinfection during root canal therapy. It was completed and submitted by 238 (25.05 per



The findings showed that general dentists and endodon tists follow different and sometimes in a dequate disinfection protocols.

cent) of those invited, divided equally between general dentists and endodontists.

The researchers found no statistically significant differences in the respondents' first choice

of an irrigant solution: sodium hypochlorite. However, they noted

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3-D printed MJ implant

In collaboration with medical engineers, oral and maxillofacial surgeons at the University of Melbourne have recently implanted a temporomandibularjointprosthesisinayoung man suffering from a rare congenital jaw deformity. This is the first time a custom-made mandibular joint replacement using 3-D printing technology has been performed in Australia.

The patient, Richard Stratton, was born with condylar aplasia, a developmental defect of the mandibular condyle. He was missing a temporomandibular joint, which resulted in a lack of growth in the left side of his face and a noticeably skew mandible. The conditionalso affected jaw motion, chewing capacity and facial expression.

Stratton's jaw was surgically reconstructed with a new titanium prosthesis. According to the university surgeons, the biomechanical and clinical results look promising. They believe that this technology will help facilitate the research and manufacture of customised high-tech implantable devices in Australia.

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About 300 participants from all over the world attended the second annual Bio-Emulation colloquium in Berlin last month. ► WORLD NEWS Page 3

Better have breakfast

A study in Japan has found that skipping breakfast equally contributes to the development of bad breath as insufficient tongue hygiene. It recommended to advocate proper tongue coating management together with other healthy lifestyle behaviours, and having breakfast in particular, in adolescents' health education.

Straumann prevails

After a significant patent dispute filed at the Delaware District Court in the US, implant component manufacturer nt-trading from Germany has agreed to remove its imitations of Straumann's implant abutments from the US market and to compensate the company for the incurred legal costs.

ICOI World Congress in Berlin

For more than three decades, the International Congress of Oral Implantologists (ICOI) has drawn dental professionals to various places around the globe each year. This year, the ICOI World Congress will be held in the German capital Berlin from 15 to 17 October.

Under the theme "Evidencebased innovations in oral implantology", it will address contemporary concepts and philosophies related to the field. More than 1,000 dental professionals, including general dentists, specialists, laboratory technicians, students and industry representatives, from all over the world are expected to attend. More information about the congress and registration can be found at www.icoiberlin2015.org.



■ Page 1

statistically significant differences in the protocols used by general dentists and by endodontists in relation to various factors.

These factors included the concentration of sodium hypochlorite, the use and type of irrigant applied to remove the smear layer, the use of adjuncts to irrigation, the enlargement of the apical preparation when shaping a

necrotic tooth, and the maintenance of apical patency throughout the debridement and shaping

The study's findings showed that general dentists and endodontists follow different and sometimes inadequate disinfection protocols. "The results of the survey demonstrated that endodontists keep up to date with protocols published in the literature, whereas general dentists

use protocols learnt during their dental training. Both groups of clinicians should be aware of the importance of disinfection techniques and their relationship to treatment outcomes," the researchers stated.

They pointed out that controlling micro-organisms during root canal treatment-especially in cases with necrotic pulp-is essential to improve treatment outcomes. "Clinicians should update

their protocols and also consider referring patients to a specialist when their protocols are based on traditional techniques, especially in those cases with necrotic pulp," they concluded.

The study, titled "Differences in disinfection protocols for root canal treatments between general dentists and endodontists", was published in the July issue of the Journal of the American Dental Association.

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Bio-Emulation movement continues to grow

By DTI

BERLIN, Germany: On 4 and 5 July, the 2015 Bio-Emulation Colloquium was held in Berlin in Germany. The event, which was organised by the Dental Tribune International team in close collaboration with the Bio-Emulation Group, attracted more than twice the number of participants compared with last year. Overall, more than 300 dentists and dental technicians attended the extensive programme on biomimetics in dentistry, including 16 lectures and 13 workshops.

After the successful première of the Bio-Emulation Colloquium last year in Santorini in Greece, this year's meeting was held under the theme "Bio-Emulation Colloquium 360°". Key opinion leaders in adhesive and restorative dentistry educated the participants on methods and techniques to achieve high aesthetic standards and emulate nature using a histoanatomical approach.

During the sessions, particularly the workshops, attendees had the opportunity to learn more about the mechanical and optical properties of natural teeth and gain knowledge on using existing techniques and materials. A considerable number of workshops were fully booked; for instance, Dr Pascal Magne's session on dental morphology function and aesthetics was among the most requested.

Over 95 per cent of attendees who took part in a representative evaluation survey said that they would definitely recommend the event to others. They were most satisfied with the choice of speakers and topics in particular.

Many of the participants took advantage of the networking opportunities offered on the two evenings of the meeting. Each day, about 200 people attended the social events.

This year's colloquium was held at the European School of Management and Technology, a historical site in the centre of Berlin, next to the office of the German Ministry of Foreign Affairs. The building, which has landmark status today, was once the state council building of the former German Democratic Republic. After a lavish refurbishment in 2004 and 2005, it was transformed into the current private business school.

GC Europe was the main sponsor and SHOFU was the official partner. In addition, the colloquium was sponsored by Ivoclar Vivadent and CROIXTURE, and supported by

American Dental Systems, anaxdent and Velopex International.

At the closing session in Berlin, members of the Bio-Emulation

Group announced that the next colloquium in 2016 will take place in Barcelona in Spain. More Details will be made available in due time at www.bioemulationcampus.com.

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The rise and fall of mercury



By Anita Vazquez Tibau, USA

When most people hear the word "mercury" most think of the planet. There are many products that contain mercury, such as blood pressure cuffs, thermometers, batteries, and CFL light bulbs. There are processes that use mercury and produce mercury pollution, like coal fire plants, artisanal small-scale mining and chloralkali plants. However, the mercury that truly affects the global population is the mercury that is implanted in billions of people's teeth.

Mercury dental fillings commonly referred to as silver fillings or amalgam comprises of about 50 per cent mercury, along with other metals.

It is indisputable that mercury in all its forms is toxic. Mercury exposure has been linked to neurological problems such as Alzheimer's or Parkinson's disease. Mercury can also cross the placenta and reach the central nervous system of the foetus during pregnancy. The element also accumulates in the gastrointestinal tract, oral cavity, lungs, thyroid gland, pituitary gland and other target organs.

Since the United Nations Environmental Programme's Minamata Convention on mercury was finalized, the world has been taking serious action to eliminate products and processes that use or contain mercury. While dental mercury amalgamis listed as a "phase down" product, many countries are taking proactive steps to eradicate its use as soon as possible.

The dentistry industry can no longer ignore the fact that mercury from dental fillings creates an unnecessary risk of exposure, not only to the patients, but also to the dental workers. This can become the litigation in the not too distant future that proves catastrophic for the dental industry, insurance carriers, and governments. Mercury lawsuits can far exceed that of tobacco litigation, or more recently, asbestos legal actions.

Norwegian dental workers who have been injured by mercury due to occupational exposure are now being compensated, in both public and private practices. In fact, the court has reduced the criteria for compensation after the acknowledgement of the original assess-

ment was deemed too strict, therefore allowing for more claims to be considered or re-examined. The legal victory of the dental workers in Norway is being examined in other countries too in order to see what the potential for replicating the case strategy for other dental workers who have been affected by mercury exposure.

A landmark settlement was recently reached in the dental mercury case of long-time activist Freya Koss, who established the Pennsylvania Coalition for Mercury-Free Dentistry. The coalition is a Philadelphia-based consumer advocacy group that aims to educate the public on health, occupational and environmental hazards of dental mercury. Settled quietly in the Supreme Court of the New York State, the dental malpractice suit was based on neurological injuries Koss sustained as a result of the dentist's "Deviation from Standard of Care" during the removal and replacement of an existing mercury amalgam filling. Under court orders, Koss is unable to discuss the terms of the settlement, nor the details of the defendant. However, as the first US case settled in favour

of an injured dental mercury patient, she is hopeful that, on some level, a precedent will be set to compensate others who have been injured too and that the use of mercury in dentistry will be banned worldwide.

According to an article published on 1 May 11, 85 per cent of Europeans voted for the removal of mercury amalgam fillings. Michèle Rivasi (Greens/EFA), a member of the World Alliance for Mercury Free Dentistry and a Member of the European Parliament, with support from the European Environmental Bureau, held a press conference on May 7 to disseminate the results of the consultation that was organized by the European Commission on the implementation of the Minamata Convention on Mercury.

The results show that Europeans do not want an application of mercury fillings and at least 85 per cent of citizens want to get over with the use of mercury fillings in dentistry as quickly as possible.

Rivasi said: "Citizens have expressed a massive demand for a malgam to be removed. The institutions

cannot exclude such a pressing appeal. The European Commission must now make every effort to ensure that dental amalgam is removed from the market in accordance with the will of the people."

Recently, every dental school in North America that teaches the use of mercury silver fillings was sent a legal notice that they were not permitted to expose any student to the Environmental Protection Agency's (EPSA) maximum mercury air quality standards promulgated to protect the public, since students are not employees. Many of the schools have mistakenly been using Occupational Health and Safety standards to evaluate exposure levels and at the same time, not complying with any of the other numerous requirements this law states. Failure to comply with EPA standards may be considered tortious conduct, which may potentially render these teaching facilities liable for possible injuries of students who are exposed to mercury.

Similar to mercury thermometers being banned in the US and other countries, mercury use in dentistry is declining fast. The question remains, how soon will mercury be banned completely in dentistry?



Anita Vazquez Tibau has travelled the world for over a decade as a speaker, working with various nongovernmental organizations as an international

advocate against the use of mercury in dentistry. She is the Executive Director of Californians for Green Dentistry, a grassroots organization that has successfully garnered resolutions from the city councils of three California cities asking dental professionals to eliminate the use of mercury in their practices. She has testified at city, state, national and international levels on dental mercury.



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"There is a general sense of frustration throughout the world"

An interview with CoDent founders Profs. Dov Sydney, USA, and Mauro Labanca, Italy

With the first World Congress on Controversies in Dentistry (CoDent), Prof. Dov Sydney from USA/Israel and Prof. Mauro Labanca from Italy are aiming to make news by reaching current conclusions to ongoing debates in the field through evidencebased dentistry, as well as expert opinion and speaker—audience discussions. Dental Tribune International had the opportunity to speak with them about their concept, general information overload in dentistry and the upcoming launch of CoDent in Barcelonain Spain in 2016.

Dental Tribune International: Could you briefly introduce your project?

Prof. Dov Sydney: It is called CoDent and it is part of a company called CongressMed, which has developed a model for congresses based on the concept of "Controversies in...".

CongressMed's education is devoted to addressing controversial medical issues in a debate format. Our role is to bring the concept to the dental field, and this involves defining the first topic, finding the moderators and generally advancing the project. We thought it good to start with implants because it is one of the most difficult issues we are faced with as dentists. In this regard, the first congress will address the topic of controversies in dental implantology and will be held in Barcelona from 3 to 5 November 2016.

What distinguishes this congress concept from other meetings?

Prof. Mauro Labanca: We hope to promote real discussions and interaction between practising physicians and researchers on unresolved pressing clinical issues. We do not want to be a substitute for any other existing meeting. For the first congress, we will be discussing implants, but future topics do not have to be surgical ones. Congresses could address adhesive and restorative dentistry or different kinds of treatments in orthodontics. We are not an academy or a scientific society; we already have so many and we do not want to compete with them. We are doing something totally different.

What will the programme cover?

Prof.Labanca: Right now, we have eight topic modules that we feel are very interesting and will foster debate, as well as greater knowledge at the end of the meeting, hopefully. The programmes are designed to provide an effective forum for debate by allowing ample time for speaker–audience discussion. There are not going to be long presentations by one single speaker. Instead, we will have

very short addresses of about 10 to 15 minutes during which the

speakers will seek to answer a specific question. The result will be

that, after approximately 1.5 hours, the audience will have had a sum-

mary by some of the most important speakers on that topic.



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Dental Tribune editors in talks with Prof. Dov Sydney and Prof. Mauro Labanca (from left to right. © Kristin Hübner/DTI)

Prof. Sydney: It will be the first time that dental companies will be on the podium together, presenting their best speakers but without the restrictions of having to identify that they work for the company etc. Afterwards, the companies will be able to debate with each other ona number of points. We also aim

to initiate an interactive exchange between speakers and the audience with questions via microphone and social networks, in order to cover all the questions that may arise. At the end of each small section, the aim is to have achieved a fair and balanced coverage of the respective subject.

What impact do you hope to have with this idea?

Prof. Sydney: We expect to make news. Up to now, dental companies have mostly marketed their products in a way they think is most appealing to their target customers, but the individual dentist who is going to buy the products, quite frankly, does not have all the information to make a decision. And even if he or she does have a sense of direction regarding which implant system to choose, he or she is often not totally sure of the optimum selection. Our concept provides an industry. How can a busy and especially non-academic practitioner properly compare all the information that is available? What we will offer is the scientifically accurate information in order to help them interpret the efficacy and applicability of the message they receive from companies.

You are both dentists. Have you experienced this problem yourselves?

Prof. Labanca: Exactly. When I started with implants many years ago, I had this idea to bring the most important companies together to

"In many countries, dentistry is generally a private practice industry."



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opportunity to cut through the indecision and doubt. All the companies sitting up on the podium will have the opportunity to ex $plain\,why\,their\,implant\,is\,great\,and$ the other companies will be able to join in and explain to the audience about their product's features. The dentist in the audience will then be able to participate as well to obtain the answers that they are really interested in, bottom line—what's best for me?

Prof. Labanca: In the long term, we hope to initiate an annual meeting that will cover different topics in dentistry. There are many issues that are not so clear and dentists wish to become more informed about these.

So this is an opportunity for dentists to obtain a market-independent view of a certain product or topic in general?

Prof. Sydney: Right. Moderators will monitor the scientific level of speakers and the information they provide. Among the criteria for selecting moderators are that they be well respected in their fields and well known in the academic world. In particular, they should not be connected in any significant manner with a particular company. That is the way we qualify them and that is also what draws the companies in. We represent a programme of a uniquely remarkably high level, and this means that when speakers present and say something that might not be evidence based or may leave some questions,the moderators, in a polite and non-offensive manner, will be step in. I believe this will make the audience extremely receptive to the results.

Prof. Labanca: We would define ourselves as a sort of supervisor in this project. In many countries, dentistry is generally a private practice initiate open and honest debate between them. At that time I probably didn't have enough cards to play, but now it is the time! The reality dentists are facing today is that companies are approaching them and claiming to have something special and something new. This could be true, but you do not have the means to compare or to confirm whether it is. You could try the products on your patients, but that would not be the right thing to do.

Prof. Sydney: Both of us travel quite a bit. Mauro and I have a global understanding of dentists' concerns in many parts of the world. There is universally a common sense of frustration regarding the different implant systems. I regard our role as providing a safe, scientifically enabled and controlled environment for implant companies to proactively present the advantages of their systems directly to the end users.

Will there be follow-up documentation after the meeting?

Prof. Sydney: The existing congress model involves a journal issue that is published afterwards and compiled in such a way that it is relevant not only to the event, but also to anybody interested in reading about what was discussed and summarised by creating a permanent and easily-referenced resource.

Prof. Labanca: We are not just trying to look for something different; we have seen that there is a need for this congress. We want to achieve a high level of academic acceptability, as well as accessibility for the general dentist population. That is the balance that we hope will lead to success.

Thank you very much for this inter-

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Crowdfunding campaign for no-drill repair tech

Reminova aims to raise £0.5 million for advanced remineralisation device

By DTI

LONDON, UK: Teeth restored without drilling is the dream of almost every dental patient. A new approach developed in the UK that utilises an electrical current to remineralise the tooth promises exactly that. Reminova, the developer of the technology, has now announced the start of an equity crowdfunding campaign for the UK and the US in an effort to raise £0.5 million to bring it to market.

It will be the first fundraising campaign of its kind to target shareholders in both countries simultaneously. If reached, the sum will be used to expand the company's development and operational team and to seek strategic partnerships with dental companies interested in selling the technology, Reminova executives said

Initial clinical studies are also planned.

Reminova expects a potential market for the device of 700,000 dentists worldwide. In a press note released, the company said that individuals who are interested in becoming shareholders will have 60 days to contribute to the project. The minimum investment is £1,000 for those from the UK or Europe and US\$5,000 for Americans.

In return, they will help to get rid of drilling in dentistry and transform global dental health.

"With their help and investment, our tooth rebuilding treatment could be available to patients within three years," predicted Reminova CEO Dr Jeff Wright.

According to Reminova, its technology, first released in 2014, prepares damaged tooth enamel in such a way that the ions of minerals required to remineralise the tooth, such as calcium and phosphate, can be pushed to the deepest parts of lesions faster. This remineralisation process is stimulated by short electronic pulses emitted by a specially developed instrument, which is estimated to cost less than £10,000 once it enters the market.

"With our treatment you can top-up your natural teeth enamel whenever you need, just as you'd service your car when it needs a bit of loving care," Wright said.

Reminova claims to currently hold or to have applied for 17 patents for the technology, which was first presented to the public in 2014. A King's College London spin-out, the company is based in Perth in Scotland and managed

by tooth decay experts, including Prof. Nigel Pitts and dentist Dr Chris Longbottom.



(From left to right) Reminova founders Prof. Nigel Pitts, Dr Chris Longbottom and Dr Jeff Wright. (Photo David N. Anderson, UK)

