Still lots to see and discover at EAO 2014

Annual scientific meeting of the European Association of Osseointegration continues today

Reduced diameter or length of implants are just two of the topics, which will be discussed this morning when the annual scientific meeting of the European Association of Osseointegration continues here at the Auditorium Parco Della Musica in Rome. Until Saturday, over 30 speakers from Italy and abroad will also present on risk factors, soft tissue recession and bone augmentation dilemmas, among other topics. As a first, there will be a special parallel guest country session this afternoon organised by the Korean Academy of Osseointegration in Seoul. It will present an impressive line-up of clinical experts from one of the largest markets for dental implant rehabilitation in Asia.

Visitors are also invited to attend tomorrow’s Award Ceremony which is going to honour submissions in basic, surgically related and prosthetically oriented clinical research in implant dentistry. According to latest estimates of the EAO, approximately 2,500 professionals are expected to attend this year’s congress in Rome, which is being held for the 23rd time. While the number of expected visitors is most likely to remain steady compared to the last two editions in Denmark and Ireland, participation at the commercial exhibition has increased with over 90 companies and dental institutions to showcase their latest products and solutions this year. On display are new implants, biomaterials and digital treatment solutions, with some of them to be available to European dentists for the first time. Visitors can also learn more about these products during a number of corporate-sponsored satellite symposia and hands-on workshops to take place during all three congress days.

More information about the meeting, scientific sessions and industry exhibition is available on the EAO congress website at www.eao-congress.com. The association also offers an application for mobile devices and tablet computers that is aimed at giving visitors quick access to congress-related information. Daily news updates, interviews and product reviews from the show floor are available on the Dental Tribune website at www.dental-tribune.com. The newsfeed can also be accessed by scanning the QR code below.

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Far East meets Europe in Rome
Clinicians from South Korea to present clinical innovations in dental implantology at parallel guest country session today

For the first time in the history of the EAO meeting, clinical experts from a country outside Europe will jointly participate in a special parallel guest country session organized by the EAO in partnership with the Korean Academy of Osseointegration. As part of this year’s scientific congress programme, clinicians and educators from dental schools in South Korea will present on a wide range of implant-related topics including computer-guided flapless implant surgery or surgical intervention in case of peri-implantitis.

According to Prof. Bu-Kyo Lee, professor of Oral and Maxillofacial Surgery at Asan Medical Center in Seoul and director of International Affairs of the Korean Academy of Oral and Maxillofacial Surgeons, the session will not only discuss innovative methods and clinical techniques but also provide a comprehensive insight into the state of dental implantology in the Western Asian country.

“Expectations have been high since the EAO accepted the proposal by our Chairman Dr Je-Uk Park to host a parallel session at the 2014 congress in Rome,” he told today international in an interview. “I am sure that attendees will enjoy the knowledge that our experts, under the motto ‘Cutting edge of implant dentistry’, will bring to the table.”

Lee said that, while implantology in South Korea was considered inferior compared to Western standards not long ago, the specialty has taken a big leap forward in recent years.

“Most of what we know about implantology today has its roots in developments that began in Europe decades ago,” he said. “Now we have been given the opportunity to give something back by presenting clinical knowledge and methods which have been developed in our country and could benefit implantology worldwide.”

“It is a honour to have been invited by the EAO ahead of other important markets such as Japan or the US. We hope that the presentations will be up to par with what attendees expect in terms of content and clinical skills,” he said Lee added.

According to Lee, eight speakers worldwide. Dental implants have come a long way in South Korea since they were introduced to the country four decades ago. Back then, US and European products wholly dominated the still small market. Now, with 225 implants per 10,000 people, the country has one of the highest rates per capita in the world, ranking among the top 10 worldwide.

The market saturation has recently forced many manufacturers to increasingly pursue sales markets overseas. Owing to their price advantage, implants “Made in Korea” have started to gain more market share overseas. In the Asia Pacific, a recent report by the Millennium Research Group (MRG), a market intelligence provider in Canada, has predicted that manufacturers from South Korea could dominate dental implant markets in that region as early as 2016. By that time, the total regional market is expected to exceed US$800 million.

While exports to Western countries have remained relatively slow, South Korean manufacturers like OSSTEM already rival established implant providers such as Straumann or Zimmer Dental in Asian countries like Pakistan, Malaysia and Hong Kong. Other significant market players in the region include DIO Implants, a company partly owned by DENTSPLY, as well as MegaGen and Shinhung.

Implants from Korea are also catching up in terms of clinical data, the report stated, a fact that will make them increasingly adoptable for implant specialists in that region. Manufacturers now offer seminars focusing on basic and advanced implant placement training and the advancement of restoration skills to dentists. Having recognised the increasing financial limitations provided by dental implants, a growing number of South Korean dentists has also taken part in seminar programmes that focus on how to remain competitive. This led to an increase in the number of dentists who are able to perform implant surgery procedures. Demand for implants has been also driven by a new trend among South Korean dentists to provide aesthetic treatment through dental implants.
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Scientific programme of the 2014 annual scientific congress of the European Association of Osseointegration

Friday, 26 September
08:45–10:15
Oral communication – Basic research

Implantologists of tomorrow – Reduced n. and dimension of implants
- Augmentation prior to implant placement
  Fouad Khouri
- Reduced diameter implants
  Bilal Ali Nawaz
- Reduced length implants
  Daniel Thoma
- Reduced number of implants
  Bjarni Pjetrusson

Extracting teeth in modern dentistry: Change in paradigm?
- What happens after tooth extraction and what do I need to know?
  Daniela Battocchi
- Why do I not like to perform Alveolar ridge preservation and why I let it heal spontaneously?
  Stefan Fickl
- Why I like to perform Alveolar ridge preservation?
  Fabio Vigoletti
- Expert discussion

Oral communication – Clinical research – Surgically related
10:15–10:30
Congress Ceremony

10:45–12:15
Prosthetic alternatives
- All ceramic restorations or low precious alloys
  Christoph Hämerle
- What overdenture type?
  Joëlle Feine
- CAD cam technology where are we?
  Joerg Strub
- Complications of FDPs how do we prevent?
  Dean Mornin

12:15–13:15
General Assembly

13:15–14:45
Oral communication – Prosthetically oriented (part 1)

Implantologists of tomorrow - When do we need to submerge?
- Influence of hardware and insertion protocol on hard and soft tissue healing
  Ryo Jimbo
- Advantages of submerged approach in the aesthetic zone
  Jan Cosyn
- Indications and limitations to the non-submerged approach
  Robert Haase

Full arch restorations: several options or only one protocol?
- How many implants for a fixed restoration?
  Luca Francetti
- Treatment planning for the reconstruction of the atrophic maxilla
  Matteo Chiapasco
- Individualized prosthetic solution for each edentulous patient
  Germain Gallucci
- Rational prosthetic options for the edentulous case
  Nitran Richaco
- Quality of life aspect
  Pernilla Larsson Gran

Oral communication – Basic research
13:15–16:45
Korean Session

Opening remarks
Smart dental implant placement
- Upgrade of Computer Guided Flapless Implant Surgery
  B.H. Choi
- Smart implant placement & Computer guided dentistry
  R. Leesungbok

Novel approaches for alveolar bone regeneration
- Tooth-derived bone matrix
  Demineralized dentin matrix
  T.K. Kim
- Recent advances in application of rhBMP-2 for bone regeneration
  E.W. Jung

Towards natural beauty in implant prosthodontics
- Long term study of alumina touched zirconia abutments in implant restorations
  J.S. Han
- Esthetic approaches to various ridges in anterior maxilla
  J.S. Lee

Comprehensive management of complications following dental implant
- Innovative solution devices for various implant complications
  J.Y. Kim
- Back to basics: Surgical intervention for Periimplantitis
  B.D. Ham

Closing remarks
15:00–16:30
Oral communication – Clinical research – Prosthetically oriented (part 2)

Clinical research – Surgically oriented (part 1)
13:15–16:45

Evaluation of aesthetics and functional long term results
- Objective evaluation of aesthetic outcome: different methods
  Rudolf Farhausen
- Is stable long term aesthetic outcome achievable?
  Udo Reiber
- Could we reduce biological long term complications of implant supported restorations?
  Anne Marie Rose Jansen
- A comparison of smooth and micro rough titanium surface: are we on the right track?
  Maurizio Tonetti

Practice management session
- Economical and demographic situation in European dentistry
  Juan Carlos Llobera
- Leadership and productive teams in dentistry
  Elisabeth Kalenderian
- The management vision: Total success in dentistry
  Primitivo Boig jorne
- Efficient communication within the team and with the patient for the ideal treatment outcome
  Gaelp Gurel

Saturday, 27 September
08:00–10:45

Risk factors in implant dentistry: how to prevent implant failures
- Implants and systemic diseases: current trends
  Carlo Maiorana
- How to prevent surgical complications in oral implantology
  Alessandro Rossi

Preservation of the edentulous case
- Reduced number of implants
  Bilal Al Nawas
- Reduced diameter implants
  Robert Haase
- How to prevent implant aesthetic failures
  Matteo Capelli

Reducing treatment time: Is it always a must?
- Tiziano Testori, Paolo Casentini, Dennis Tarrow

Oral communication – Poster Presentations
- Bone augmentation dilemmas
  - Prosthetic compensation to avoid augmentation procedures
    Eric Van Dooren
  - When do we need autogenous bone
    Andreas Stavrakoudis
  - Current indications to resorbable and non resorbable membranes in GBR
    Mario Bescia
  - Vertical ridge augmentation: limits and indications and long term results
    Prank Renouard, Massimo Simon

What do we need for our patient: When do we need implants and what are the health and social implications?
- What else than implants?
  Alberto FOOT
  - Cost benefit of tooth replacement
  Hugo Pe Brany
  - Implants in the elderly population with reduced financial income
  Frauke Müller

12:15–15:15
Esthetic and functional rehabilitation of the periodontally compromised tooth/dentition: the contribution of periodontal tissue engineering and biomimetic reconstructions.

15:15–16:45
- The expanding limits of periodontal regeneration in changing tooth prognosis
  Pierpaolo Cortellini
- Modern perio-prosthetic approaches to the complex rehabilitations of the periodontally compromised patient
  Paolo Francesco Manicone, Luca Landi
- The role of periodontal plastic surgery in enabling ideal esthetics in the complex restorative case
  Francesco Cairo
- Prosthetic reconstruction of the natural dentition and the intermediate papilla
  Emanuele Ruscotti

12:00–13:15
Award Ceremony

13:15–15:15
Soft tissue recessions around implants: Prevention and treatment
- Risk indicators and prevention of mucosal recessions
  Hom Lay Wng
- Surgical treatment of mucosal recessions at implants
  Giovanni Zucchelli
- Prosthetic compensation of mucosal recessions at implants
  David Schneider
- Management of soft tissue recessions at peri-implantitis sites
  Jurgen Becker

15:15–16:20
Closing Ceremony

Presentation dates and topics are subject to change. Last update was 4 September, 2014.
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Cost–benefit and affordability of dental implant restorations

By Prof. Hugo de Bruyn, Belgium

Nowadays, dental implants are well established in daily practice and are well known and accepted by the public. They allow anchorage of removable and fixed dental prostheses in a predictable way. The efforts of scientists in collaboration with the implant industry have led to continuous improvement in clinical outcomes owing to the modification of implant surfaces, implant design and prosthesis connections. Together with a better understanding of biology, these developments yield fewer implant failures despite the usage of implants in compromised or at-risk patients.

In their consensus reports, the European Association for Osseointegration stressed the need for additional research in the field of patient-centred treatment outcomes, including the economic impact of implant restorative treatments.1 Patient-centred outcomes consider a number of parameters that are not always objectively measurable, in contrast to implant survival, bone loss, peri-implant health and incidence of complication, for example. Patient-centred outcome variables include patient satisfaction with a given treatment, improved masticatory ability and aesthetics, the absence of speech problems and the subjective evaluation of oral health-related quality of life.

In light of a growing interest in health economics, greater attention is also being given to the cost–benefit of tooth replacements. In economics, cost–benefit analysis compares the cost of making a product or delivering a service to the direct benefit to the individual or the society, including the revenue the product or service will generate in the long term. Applied to dental or medical care, this analysis would have to consider resource expenditure relative to potential medical benefits, such as longer survival, reduced pain or morbidity, and greater comfort. Such an analysis would seek to determine the best choice considering limited resources, and it would weigh the possibility of undesirable outcomes and side-effects against the potential of a positive treatment outcome.

A cost–benefit analysis would consider these aspects together with the costs involved in terms of chair time, patient-related time, handling complications, and satisfying patients’ expectations and preferences. It has become a part of the process of determining necessity in delivery of qualitative care and it brings the patient to the center of decision-making. In dental science, these aspects are largely uncovered.

In the context of implant treatment, it is well established that edentulousness and wearing of a complete denture have a number of negative physiological, functional and psychosocial consequences. These influence oral function and aesthetics, as well as satisfaction, self-esteem, body image and quality of life. Consequently, improving the retention of a denture by fixation on to two to four implants or the fixation of a fixed complete denture on to four to six implants has a tremendous effect on oral health-related quality of life. However, adaptation to tooth loss varies individually and many patients cope very well with fewer teeth and do not always desire replacements, let alone dental implants.

In Europe, the demand for tooth replacement is increasingly based upon normative and theoretical grounds and not always on patient-specific assessment. Clinicians are often stuck in dogmatic, non-evidence-based thinking. Often, they impose their personal view concerning the suggested treatment option. Some examples to illustrate this are favouring long implants and bone grafting instead of short implants, believing that the more implants the better, favouring overdentures on connected implants, believing that ceramics are better than acrylic teeth, and regarding aesthetics as being of sole importance.

Long-term clinical studies demonstrate that a single implant is the best option for a missing tooth. It has a greater initial cost, but has a survival rate of above 95% and can be considered more cost-effective than a three-unit conventional bridge. Studies have also found that implant-replaced overdentures are worth the price given the increase in quality of life and treatment satisfaction. Furthermore, when patients’ resources are limited, the two-implant solution is a better option from a cost–benefit perspective than a fixed dental prosthesis on to four to six implants.

Unfortunately, patients’ financial situation imposes a significant barrier to treatment choice. Although dental implants have become a mass product, the price does not reflect normal economic trends in price reduction. On the contrary, prices rise yearly. The high-tech evolution of 3D radiographic analysis, the use of stereolithographic guided surgery, the need for individualized aesthetics, and the increased use of additional regenerative procedures have all further increased the total cost. Although these techniques offer the ability to facilitate surgery and enhance aesthetics, the cost aspect is seldom taken into account.

One can question whether this does not lead to exclusive treatments for the happy few. In Europe alone, every year close to one million patients become completely edentulous. It is unlikely that they can afford dental implants. Research in Austria has found that the average person considers implants too expensive and blames the dentist for the high prices. Additionally, 50% of the patients expected a lifetime longevity. A previous study showed that 23% of the patients would not opt for implants at all. Another study assessing treatment advice given after tooth extraction by Flemish general dentists in Ghent demonstrated that replacement was not recommended in 42% of cases. Of the remaining cases, 54% opted for a removable appliance and only one-fifth received advice for a single implant crown. It appeared that highly educated patients were more likely to receive a single implant, probably on grounds of financial affordability. Hence, despite evidence that a single implant is the best, cost-effective way to replace a missing tooth, it is seldom advised. It is obvious that other patients’ and clinicians’ arguments prevail in the decision-making process.

Given the current economic situation, dental health care expenditure will probably slow down or even be reduced. With budget cuts and savings deemed necessary in the EU for the coming decade, an insecure situation or the perception thereof by many patients will require difficult choices. In many countries, national health or private insurance seldom reimburses patients for implant prosthesis, leading to large groups of patients requiring replacements but being without the means to pay for them. The remaining patients can afford dental implants, but have high and often unrealistic expectations regarding the device and are very critical.

It is a challenge for clinicians to deal with these economic factors and offer good treatment to as many patients as is feasible. The clinician should advise the patient which treatment option is preferable based on individual risk assessment, but the patient’s preferences, including financial affordability, and the long-term cost–benefit aspects are gaining importance and cannot be neglected.
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Physiological healing patterns: What clinicians need to know about tooth extractions

By Dr Daniele Botticelli, Italy

After a tooth has been extracted, a series of processes are set in motion that ultimately results in the healing of the alveolus. As demonstrated in animal and human studies, intra-alveolus healing usually starts with the formation of a coagulum in the alveolus immediately after the tooth has been extracted. This clot is then progressively replaced by a provisional matrix, which functions as a scaffold for the woven bone that will form from the lateral walls and the bottom of the alveolus to fill the extraction socket eventually. Subsequently, the immature bone becomes mature alveolar bone.

In this time, intra-alveolus processes continue. Extra-alveolus healing occurs concomitantly and will result in vertical and horizontal resorption of the walls of the extraction sockets, a process that is more pronounced at the buccal than at the lingual aspects.

A recent systematic review on post-extraction alveolar dimensional changes in hard and soft tissue in humans reported a horizontal dimensional loss of 29–63 % and a vertical dimensional loss of 11–32 % six months after tooth extraction. Moreover, it reported that the reduction of alveolar crest dimensions was faster during the first six months of healing and continued after that. In a clinical study, the width of the alveolar crest at the buccal and lingual aspects was measured in edentulous sites and compared with the dentate contralateral sites in 149 cast models. A reduction of the alveolar crest of about 3.5 to 3.6 mm at the buccal aspect and 1.7 to 2.0 mm at the lingual aspect was observed. Another study found a total reduction of the width of the alveolar crest of about 30 % after 3 months and of 50 % after 12 months.

When an implant is placed immediately into an extraction socket, the physiological healing patterns of the alveolus are different from those described above. In order to better understand these processes, it is important to mention two processes that have been proposed as explanations for osteointegration, namely distance and contact osteogenesis.

An experiment was conducted on animals to test these processes by preparing cylindrical defects in the alveolar bone and implants (smaller in dimension than that of the defects and with a moderately rough surface) placed and stabilised by devices to guarantee their stability despite the absence of primary contacts with the native bone. After implant placement, gaps of ø 0.7 mm were obtained between the implant surface and the bony walls. After three months of healing, very little osteointegration was observed at the defect sites (0.3–5.3 %) compared with the control sites (46.1 %), in which implants were placed in full contact with the native bone. After implant placement, a space of 0.4–0.5 mm in width between the front of the new bone and the implant surface was observed, occupied by connective tissue that surrounded almost the entire body of the implant. Proper osteointegration may be difficult to achieve when there is no primary contact with the native bone.

In order to study this supposition, a series of experiments on animals were conducted. Recipient implant sites of 10 mm in depth were prepared in the alveolar crest according to the usual protocol. The marginal 5 mm of the sites was widened with a drill so that a marginal gap of 5 mm in depth and 1.25 mm in width was obtained between the rough surface implant and the bony walls after implant placement. All of the experimental sites were covered with collagen membranes.

The fully submerged and histological outcomes were evaluated after one, two and four months. It was observed that the defects had filled with newly formed bone after one month (Fig. 2). However, the bone was separated from the implant surface by a 0.4 mm wide layer of connective tissue, similar to that described in the previously mentioned study. In the apical 1.8 mm of the defects was new bone integrated on to the implant surface, leaving the coronal 3.2 mm occupied by connective tissue attached to the implant surface.

Another important factor to be considered is osteoconduction, which can be defined as the process during which bone grows on to a surface. It is a well established that moderately rough surfaces provide higher osteoconductivity and induce a higher degree of osteointegration compared with turned surfaces. While this difference in osteoconductivity may have limited clinical significance, more attention should be paid to marginal defects present at implant placement. In fact, experimental studies have demonstrated incomplete healing of marginal defects with implants with turned surfaces. This may be related to the lower osteoconductive potential and capacity of turned surfaces to maintain this property over time compared with rough surfaces. This may be relevant when implants with a turned surface are placed into extraction sockets or placed at the same surgical stage of sinus floor elevation, for example.

Editorial note: A complete list of references is available from the publisher.
The use of dental implants to replace missing teeth has become a routine treatment modality for patients missing teeth. With the acceptance of this form of treatment, patient demands have increased for sooner completion of their treatment and long-term predictability. The clinician must be able to meet the demands from their patients for quicker loading protocols and higher predictability. Unfortunately, with quicker loading protocols, this introduces some uncertainty whether an implant may be at risk for failure if loading forces are applied to the healing implant.

The Osstell Resonance Frequency Analyzer (RFA) unit is a device that measures the resonance frequency of a rod (SmartPeg) connected to the implant. Dependent on the value of the resonance frequency, the Osstell calculates a number (Implant Stability Quotient or ISQ, Fig. 2) indicating how stable the implant is. The higher the number, the more stable the implant.

The advancements and improvements made to the Osstell unit have made it possible for the clinician to determine the primary stability established at the time of implant placement by using the Osstell. Once the initial stability of an implant (ISQ) is measured this baseline reading can be used to compare additional and successive ISQ measurements enabling the clinician to determine how the biologic process of Osseointegration is progressing. This method of assessing implant stability can provide the clinician with information that can be used to determine that the implant is ready to take prosthetic loading and more importantly, the implant will provide long-term support for a definitive prosthesis. There are several advantages to comparing successive ISQ measurements to a baseline initial recording. These advantages include permitting the clinician to determine proper healing protocol for an implant that was placed (delayed, early or immediate loading), determine when the implant, when an implant may be losing integration or the implant failing to integrate.

The use of Osstell and obtaining successive ISQ measurements in implant dentistry is well documented. There are well over six hundred articles published in refereed journals (available at www.osstell.com) that illustrate the science and benefits behind the use of ISQ measurements. This is one data generating device that an implant dentist must have and use on a daily basis to ensure optimising clinical outcomes of implant treatment for their patients.

Editorial note: A complete list of references is available from the publisher.
Yesterday at the Straumann Corporate Forum, Prof. Stephen Chen showed in his presentation (“Scientific evidence and clinical benefits of Roxolid implants”) the impressive evidence for Roxolid, Straumann’s high-strength implant material, and its clinical benefits. Roxolid SLActive is Straumann’s answer to the demand for long-lasting products, that can help to reduce treatment complexity and the need for invasive grafting procedures. With this unique material surface combination, Straumann (Booth D01) is setting new standards, contributes to reducing the invasiveness of implant treatments and can offer clinicians the possibility to broaden their treatment options.

With Roxolid, Straumann has developed a unique material for dental implants that offers even more strength than titanium implants. As a result, Straumann implants made from Roxolid can be used when smaller implants are necessary due to insufficient bone—bone augmentation procedures can be avoided and treatment time may be reduced as the surgery requires fewer steps. By using smaller implants, this leaves more vital bone, better blood flow, and more soft tissue around the implant. These conditions are vital for the successful integration of the implant and its longevity.

Straumann has researched the possibilities of reducing healing time after insertion and enhancing predictability of the outcome, without risk to the implant integration. The result: Straumann SLActive, the clinically proven, true hydrophilic implant surface. SLActive reduces the risk during the critical early treatment by accelerating and optimizing implant integration. The bone formation process is initiated at an earlier stage, resulting in improved implant stability. With conventional surfaces, implants are exposed to a higher risk of failure due to an overall stability dip within the first weeks of healing. This risk is greatly reduced with SLActive technology.

The benefits Roxolid SLActive implants have to offer are numerous: by supporting the elimination of invasive grafting procedures, clinicians can reduce the treatment time, preserve vital peri-implant structures, and decrease postsurgical complications. Furthermore, the avoidance of GBR procedures can help to increase patient acceptance of dental implant treatments resulting in an increasing number of patients that are willing to undergo implant treatment. Patients who can be treated with Roxolid SLActive implants without grafting can benefit from a less traumatic, less expensive and shorter treatment with a lifelong implant solution—all Straumann implants are covered by a lifelong warranty.

Straumann caused quite a bit of excitement at the beginning of the year with a major reorientation of its product and pricing strategies. Implantologists worldwide can now access these innovative benefits because all soft tissue and bone level implants from Straumann are sold with Roxolid at no extra cost. These new Straumann Roxolid SLActive implants are offered for the same price as the existing titanium implants. In this context, because Roxolid has been regarded as a significant milestone in modern implantology by renowned clinicians, some even expect to see Roxolid replace titanium as the material of choice over time.
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Planmeca's open interface-based CAD/CAM solutions introduce, above all, quality, cost-efficiency and precision to the daily workflow at dental clinics or laboratories. Petri Kajander, Product Manager for Planmeca's CAD/CAM solutions, explains the revolutionary features of these new products.

Planmeca PlanScan—super fast intraoral scanner

The new Planmeca PlanScan is a digital and powder-free intraoral scanner that scans the patient's dentition quickly and accurately. The scanner produces real-time digital impressions from one-tooth to full-arch scans. Thanks to the open STL data, the scanned files can be sent to any dental laboratory for design work. This is the world's first dental unit integrated intraoral scanner that can also be connected to a laptop.

The scanner has only one cable, so it is extremely easy to move from one place to another, for example between different treatment rooms or clinics”, says Product Manager Petri Kajander. “In addition, the scanner is delivered with a laptop, so the device can be flexibly shared between different users. In other words, Planmeca PlanScan offers value for your investment: it is not a device for just one dentist but can be used by the entire clinic.”

The scanner utilizes blue laser technique. It projects a pattern on the surface of the teeth and then analyses it from different directions while calculating distances. In this way, the device is able to calculate a model that is extremely accurate. “You can view the result as a real-time video image. The video recording and the dental surface identification algorithm make the device extremely flexible to use. Thanks to these features, you can pause the scanning at any time and continue later on at any point from where data is already available.”

The scanner includes a range of exchangeable tips in various sizes, so the smallest of these facilitating access to the posterior parts, particularly with small children and trauma patients. The tips can be autoclaved for efficient infection control. In addition, the scanner is extremely durable since it has no other moving parts inside except for a fan that removes warm air. “Thus, the device stays calibrated and is not subject to mechanical wear”, explains Kajander.

Planmeca PlanCAD Easy—efficient design tool for prosthetics

Planmeca also offers dentists a new kind of open software solution for 3-D design. Planmeca PlanCAD Easy is seamlessly integrated in Planmeca Romexis software and it is a user-friendly design tool for the design of inlays, onlays, veneers, crowns and bridges.

“The software runs on the so-called floating licence basis. This means that it is not tied to just one computer or workstation, but the work is saved on the Planmeca Romexis server. In this way, the scanning station can be used only for scanning, while another workstation is used for the actual design work. This is a truly unique feature, which allows work to be continued straight away on another computer, while the scanner is freed for more productive operation”, says Kajander.

Every dentist designing his or her own prosthetic works will also face cases that require assistance from a dental laboratory. For this reason, Planmeca's system utilises an open STL file format that allows the work to be sent immediately to a partner via the Planmeca Romexis cloud service.

Since Planmeca PlanCAD Easy is integrated in Planmeca Romexis software, soft tissue scans can also be conveniently paired with the patient's CBCT image. This combined data provides valuable information for implant planning, for example, because in addition to the soft tissues, it visualizes the crown that is designed for the occlusion. This facilitates the planning of the implant screw's location.

The Planmeca PlanCAD Easy workflow from preparation to the finished result includes just five easy stages: work description, scanning, marking of the margin line, automatic design, and sending the work to the mill. “Once the work has been sent to the mill, it is transferred there in its entirety and the mill’s computer finishes the work. In this way, the software and scanner are immediately freed for a new assignment.”

The software is very user-friendly. All design phases are saved automatically, and if further impressions are needed, previous phases can be returned to flexibly. The automatic design software automatically takes into account the adjacent teeth’s cusps and marginal ridge in addition to the contact strengths defined by the user. This creates a design that always fits its surroundings.

Planmeca PlanMill 40—fast and precise milling unit for dental clinics

Planmeca PlanMill 40 is an extremely precise four-axis milling unit operating under the control of its own computer. The device is suitable for all indications of a single tooth, in other words for the milling of crowns, onlays, inlays and veneers. The mill can manage bridges of up to five units to the posterior and three units to the anterior area.

Since the mill handles the milled pieces completely independently, as many as dozens of pieces can be sent to the mill at a time. In addition, the device tells which block size, colour and material should be used, so any member of the staff can place the block in the mill. “This saves everyone’s work. The dentist does not need add the block himself, but anyone can do it”, says Kajander.

The mill has a six-tool exchange mechanism, and it changes tools independently according to different job requirements. In addition, the device mills different materials according to their properties. For example, it knows how to gently handle delicate ceramics in work phases that require precision. “If you force the material, it may break prematurely. Even the smallest hairline crack in the material can lead to a cemented piece breaking when pressure is applied on it.”

Also, the maintenance of the device is care-free. The mill’s own computer calculates the service life of the tools, monitors wear and reports on them via the user interface. It also calculates the time that milling will take and lets the user know when the tools or water should be replaced. “Similar to a car, a mill requires maintenance at certain intervals and notifies the user of this.”

An ideal solution also for laboratories

For dental laboratories, Planmeca offers a comprehensive solution utilising the open STL file format. Planmeca PlanScan Lab scanner is an accurate desktop scanner utilising blue light for scanning gypsum models and impressions. The device scans gypsum models fast and effortlessly with an accuracy of 15 micrometres.

Designing takes place in the open Planmeca PlanCAD Premium laboratory software, which can be used for the design of all prosthetic pieces, ranging from one-tooth units to full-arch structures. The software can also be used to design individual abutments, implant bridges and bars for cemented and screwed solutions.

Designing begins with defining the margin line, after which the path of insertion is selected and the structure designed. Several automatic functions assist in the design work, and as the design progresses, the software shows the contact areas, material thickness and distance to the antagonist or adjacent tooth. A diagnostic wax-up made in the laboratory or anatomical models saved in the software can be utilised in the design work.

The software has an Order Manager page that brings efficiency to the workflow by reporting the stage of each work. In this way, several work orders can be entered in the software in one go. The last phases always saved in memory so working can be continued freely at the most suitable time. In addition, precise values can be set to each work for the cement gap and milling unit’s blade.

An open STL file is created as a result of the design work, and it can be manufactured with all milling units supporting the open file format, including the Planmeca PlanMill 50. This milling unit can be used for the milling of all most common materials, excluding metals. In addition, the open file can be sent to a milling centre for manufacturing, such as Plandent’s own PlanEasyMill milling centre.
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*This list is subject to change. Last update was 8 September, 2014.*
With Nobel Biocare’s new NobelProcera Angulated Screw Channel (ASC) abutment and Omnimigrip tooling, another true innovation is on display at the EAO annual scientific congress in Rome. According to the Swiss implant manufacturer, these products will allow clinicians to offer screw-retained restorations in a practical and aesthetic way, where previously it had only been achievable to achieve in some cases.

Screw channels can be placed with an angle of up to 25 degrees from the axis of the implant, anywhere within a 360-degree radius. This makes it possible to use screw-retained restorations in the anterior aesthetic region where a buccal screw access point would previously have ruled out. When designing the ASC abutment in the NobelProcera Software, the screw access hole can instead be positioned on the lingual side of the restoration. This way, patients benefit from an optimally aesthetic result without any risks related to excess cement. Using a screw-retained rather than a cement-retained solution also makes the restoration easier to retrieve, the company said.

When used on molars or premolars, the ability to tilt the screw channel into the most convenient position makes it easier for the clinician to access and place the restoration. As a one-piece restoration the NobelProcera ASC abutment requires less involvement from the dental lab for quicker and more cost-effective production. Combined with improved aesthetics and easier maintenance, patient acceptance can be improved significantly. Moreover, once the patient is in the chair, placing just a single piece makes the overall procedure more comfortable.

The angulated screw channel option is available for zirconia abutments on narrow platform and regular platform implants with Nobel Biocare’s internal conical connection. This advanced connection is available for Nobel Biocare’s award-winning NobelActive family, as well as on NobelReplace Conical Connection and NobelReplace Conical Connection PMC (Partially Machined Collar) implants. It offers a hexagonal internal locking mechanism for a tight seal and high mechanical strength.

The conical connection also allows for platform shifting. This ‘shift’ moves the implant-abutment junction onto the implant platform, making room for maximum soft tissue volume to safely come up onto the platform edge. Platform shifting therefore adds to more natural-looking gums for an even better aesthetic result. Moving the junction further away from the bone has also been shown to reduce radiographically detectable crestal bone loss, according to Nobel Biocare.

Given that individualised abutments from NobelProcera allow the custom emergence profile to be defined, the combined effect is designed to give an unrivalled soft tissue result. Owing to a titanium adapter, this zirconia option can also be utilised in the posterior area, providing the clinician with an entirely new option for delivering the best possible restoration.

The benefits of the ASC abutment are only possible thanks to the introduction of the associated Omnimigrip tooling. The unique tip of the screwdriver allows the screw to be tightened and loosened within the angled channel with the same accessibility and torque compared to when the channel was straight, providing easy handling from multiple angles, even in the posterior. The pick up feature of the tip allows the Omnimigrip screwdriver to grip and hold the screw equally tightly at any angle within the available range. Omnimigrip is designed to hold the screw firmly when it matters most—when the clinician is working in the patient’s mouth.

**Fig. 1** A new angle for esthetics: The ASC abutment from NobelProcera allows the screw channel to be set at an angle between 0 and 25 degrees within a full 360-degree radius. In the anterior this makes screw-retained restorations possible where otherwise restorations would previously have ruled out.

**Fig. 2** The new pick-up function of the Omnimigrip screwdriver must be experienced to be fully appreciated. The extraordinary level of grip, improved handling and is designed to reduce the risk of the screw detaching in the patient’s mouth.

**Fig. 3** Omnimigrip is graphically detectable from other tooling by blue markings on both the screwdrivers and screws.

**Fig. 4** Angulation in action. With the screw access hole pointed mesially, working with a screw-retained restoration in the posterior becomes much easier. 

**Fig. 5** When used on molars or premolars, the ability to tilt the screw channel into the most convenient position makes it easier for the clinician to access and place the restoration. As a one-piece restoration the NobelProcera ASC abutment requires less involvement from the dental lab for quicker and more cost-effective production. Combined with improved aesthetics and easier maintenance, patient acceptance can be improved significantly. Moreover, once the patient is in the chair, placing just a single piece makes the overall procedure more comfortable.

**Fig. 6** The benefits of the ASC abutment are only possible thanks to the introduction of the associated Omnimigrip tooling. The unique tip of the screwdriver allows the screw to be tightened and loosened within the angled channel with the same accessibility and torque compared to when the channel was straight, providing easy handling from multiple angles, even in the posterior. The pick up feature of the tip allows the Omnimigrip screwdriver to grip and hold the screw equally tightly at any angle within the available range. Omnimigrip is designed to hold the screw firmly when it matters most—when the clinician is working in the patient’s mouth.

**Optimising the digital workflow with Connect Dental**

Dental digitalisation provides unprecedented possibilities to implant dentistry, leading to improved aesthetic quality for the patient and higher efficiency for the implant specialist. Henry Schein, a leading provider of dental digitalisation in Europe, has launched ConnectDental in 2013.

Henry Schein digitalises the entire dental practice that runs on business as cooperation between the laboratory and the dental practice. The company said. According to Henry Schein, one of the outstanding strengths of ConnectDental is that specialists are familiar with the requirements and work processes of laboratories and dental practices.

DDX, an open software platform between the laboratory and the dental practice that runs on standard browsers, is designed to allow an even smoother data exchange. The platform has already been launched in the US, Canada and the UK with other European countries to follow.

In Italy, ConnectDental was launched for Henry Schein Krugg customers earlier this year. This offering includes intra-oral scanners Apollon DI and Omnicam from Sirona for the dentists to capture the digital impact. On the laboratory side, CAD/CAM milling systems from YHF for the laboratory and two new model-scanners for Open Technology, an Italian high-tech company, have been added to the offering.

In order to guarantee its clients high-level service, training and up-coming programmes, Henry Schein Krugg started a collaboration with Cabolipol, an Italian company specialising in CAM systems for laboratories. Henry Schein Krugg is already present in dental practices with a full assortment of market-leading High Tech 3-D conebeam CBCT systems, lasers, microscopy and CAD/CAM systems, where it is the market leader in the distribution of CEREC chair side systems by Sirona. Through this and in combination with the newly added assortment on the laboratory side, the company is now able to propose a comprehensive solution to support customers in Italy with solutions that increase efficiency, with support and to optimise the implant planning and prosthetic implant process like custom abutments etc.

Since IDS 2013, Henry Schein has launched ConnectDental in all major European markets. While the product offering varies from country to country, the general commitment of Henry Schein to provide excellent products and services transcends borders. Through the ConnectDental service and support is covered by a group of 190 specially trained and experienced sales and integration specialists for digital dentistry and digital restorations and is backed up by 460 Henry Schein service technicians. The specialists build a close network with the regional branches and local field representatives.
Achieve high esthetics

Create natural-looking esthetics
Built-in platform shifting is designed to increase soft tissue volume. Allow for maximum bone with NobelActive’s back-tapered coronal design.

Maximize bone preservation
Enable smaller osteotomy thanks to an apex with drilling blades.

NobelActive®
Rely on exceptionally high initial stability and soft and hard tissue preservation – ideal in soft bone, the esthetic area and in extraction sockets with Immediate Function or delayed loading.

Use a strong sealed connection
Benefit from a tight seal and high mechanical strength. The advanced internal conical connection with hexagonal interlocking offers both.

NobelReplace® Conical Connection
Broaden your restorative options while keeping the benefits of the clinically proven NobelReplace Tapered implant. Color-coded components help ensure standardized step-by-step drill protocol for ease-of-use and predictable outcomes.

Choose from a broad range of restorative solutions
There are prefabricated and CAD/CAM NobelProcera restorations to support all temporary and final solutions.

Work with an efficient treatment flow
Ensure predictable outcomes in all indications with a step-by-step drilling protocol that simplifies site preparation.

Visit us at Booth B and our Hospitality Suite

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