Multiple new solutions presented at IDS 2015 bring Straumann closer to being a total solution provider of choice

At Europe’s leading dental trade fair, the International Dental Show (IDS) in Cologne in Germany, Straumann presented a number of new products and solutions that—together with new partnerships—bring the group closer to its goal of becoming a complete solution provider and, thus, the partner of choice in tooth replacement for both dentists and dental laboratories.

_Further advances in implants_

Since the 2013 IDS, Straumann has launched its fully ceramic implant (Straumann PURE) and has successfully upgraded the majority of its surgical customers to the unique high performance implant material Roxolid, which has been extended throughout the Straumann implant range. Owing to its excellent biocompatibility and strength (greater than pure titanium), Roxolid makes it possible to use smaller implants, which in turn can avoid the need for bone augmentation, reducing treatment invasiveness.

_New-generation Bone Level Tapered Implant_

Roxolid is a key feature of Straumann’s new Bone Level Tapered Implant, which offers high surgical flexibility and primary stability. With the controlled market release having been completed, the new implant is now available in various endosteal diameters (3.3, 4.1 and 4.8 mm) and lengths (8–16 mm), and offers a broad range of prosthetic options. Its design offers high primary stability for immediate or early loading and, with Straumann’s SLActive surface to enhance osseointegration, implant healing time is significantly reduced—making this a new-generation bone level tapered implant.

_A complete family of restorative solutions_

Straumann is placing significant emphasis on enhanced products, technologies and workflows for dental laboratories—from simple Variobase Abutments and milling blanks with original Straumann connections to new high-tech ceramics, state-of-the-art in-laboratory milling machines, scanners, advanced CAD/CAM functionality and centralized milling services. Together with the partners in its technology platform, the group is able to offer total solutions to dental laboratories around the world. More information on these and other new launches was shared at a dedicated Lunch and Learn session for dental laboratory professionals during IDS.

_Straumann Pro Arch, a comprehensive combination_

The Bone Level Tapered Implant is an important component in Straumann’s Pro Arch solution, which was first exhibited at this year’s IDS. Pro Arch is a comprehensive combination of implants, abutments, CAD/CAM frameworks, auxiliary components and educational support that enable clinicians and dental laboratories to provide accelerated fixed full-arch rehabilitation. This approach reduces the number of treatment sessions and thus minimizes disruption to patients’ daily lives. Most importantly, it offers fixed full-arch replacements rather than removable dentures, which many patients view as artificial and inconvenient.

The Pro Arch solution includes a selection of sleek new abutments and auxiliary components that offer a wide range of prosthetic options for screw-retained restorations. The low abutment profile, varied angulations (17 and 30 degrees) and gingival heights give dentists exceptional flexibility to provide individual solutions, including tilted posterior implants.

_CARES Basic and Advanced Fixed Bars_

CARES Visual 9.0, the latest software for Straumann’s CAD/CAM system, adds the functionality for custom-milled bar options and designs to support the final restoration. This means that clinicians can now provide custom-milled frameworks—both at implant and abutment levels. In addition to titanium and coron (the company’s cobalt-chromium alloy) options, Straumann will be introducing zirconium dioxide frameworks this year.

_Straumann Variobase becomes a family_

At the 2013 IDS, Straumann introduced the CARES Variobase Abutment, the basis for a cost-effective hybrid solution consisting of a titanium bonding base and a zirconium dioxide coping. This was to complement its existing range of customized abutments and to offer laboratories the combined benefit of a metal–metal implant–abutment interface with an original Straumann connection and a variety of aesthetic shades. The pop-
ularity of this solution has prompted several developments, which made their debut at this year’s IDS.

_New heights_
For additional flexibility, for example to support larger crowns, the Variobase Abutment now comes with an increased (5.5 mm) chimney height, which can be customized and is available for all Straumann implant platforms.

_Variobase for bridges and bars_
Straumann has also developed a new Variobase Abutment for screw- and cement-retained bridge and bar restorations, offering highly flexible and cost-effective solutions for multiple-tooth restorations. Its conical design features special helix threads and a minimum plateau for long-term stability and passive fit of the bridge or bar.

_Variobase for CEREC®_
Dentists using Sirona Dental Systems’ CEREC chairside workflow to produce implant-retained restorations now have the option of a Straumann Variobase Abutment with an original connection and a concave collar design for an optimized emergence profile. This Variobase Abutment is compatible with available material blocks and two-piece scan bodies.

_CARES X-Stream for bridges and bars_
CARES X-Stream was launched at the 2013 IDS and streamlines the prosthetic workflow so that all the components are manufactured from only one scan and one design procedure. The digital functionality has been developed further and now includes the processing steps for bridges and bars on the new Variobase Abutment.

_Lava Plus High Translucency Zirconia for CARES_
Straumann also announced the availability of CARES restorations in 3M ESPE’s Lava Plus High Translucency Zirconia, a material engineered for excellent translucency with uncompromising strength. It is the only CAD/CAM material system that matches the 16 VITA classical A1–D4 shades and two bleached shades.

_Pre-milled abutment blanks_

To help dental laboratories build their business and maintain implant-abutment precision and reliability, Straumann is now offering titanium blanks with pre-fabricated implant connections. The blanks are compatible with a wide range of milling machines (e.g. Medentika; imes-icore; D5, DATRON; GAMMA 202, Wissner; RXD, Röders; DC5, Dental Concept Systems; COBRA Mill, MB Maschinen; and vhf manufacture) and enable laboratories to fabricate one-piece customized titanium abutments with original Straumann connections in-house.

_Technology platform strengthened_

Straumann heralded the arrival of the CARES M Series in-laboratory milling machine developed by Amann Girrbach to operate with the CARES CAD/CAM system. The new machine will be offered by Straumann together with the latest CARES 3Series and 7Series in-laboratory CAD/CAM scanners, which have been co-developed with Dental Wings and were also launched in Cologne. At Straumann’s press conference, Dental Wings presented the scanners together with its new intra-oral scanner and revolutionary laser ablation in-laboratory milling machine.

Furthermore, Straumann announced its investment in Valoc, a developer and manufacturer of innovative overdenture attachment systems.

Nice developed by Straumann, manufactured by etkon, distributed through Instradent

Straumann has developed an exciting new glass-ceramic material (lithium disilicate-reinforced lithium aluminosilicate) for high-end restorations, including crowns, inlays, onlays and veneers. Under the brand name etkon nice, the new material will be manufactured by etkon and supplied in ready-to-mill blocks in the common C14 format. Its key advantages include high flexural strength, short milling times and easy finishing.

It is available in two stages of crystallization. The partially crystallized version is easy to mill and can be stained and glazed, making it attractive to laboratories. The fully crystallized form requires no firing and can be milled, finished and seated directly, making it the ideal chairside solution. Straumann plans to release nice through its Instradent platform in May in Europe, with other regions and distribution channels to follow.

_Value-adding support_

_Research suggests that every other patient consults the Internet before, after and sometimes even during the consultation._ A patient’s choice of treatment and/or dental professional is based on the information found. Straumann Patient Pro is a new comprehensive platform that provides dental professionals with digital information to educate patients and to promote their practices. It supports them with materials and tools for the Internet and social media, as well as for use in their dental practices.

For more information, please visit the Straumann website.
The crown that rules them all: NobelProcera FCZ Implant Crown

Patients, clinicians and dental laboratories all want restorations they can rely on

Author: Michael Stuart, Nobel Biocare, Switzerland

Fig. 1. Combining strength with restorative flexibility, the NobelProcera FCZ Implant Crown is the ideal solution for the posterior region.

The NobelProcera FCZ [full-contour zirconia] Implant Crown combines full-contour strength that is sufficiently robust for the posterior region with superb restorative flexibility—and all with no cement in sight.

CAD/CAM manufactured using high-strength translucent zirconia—in which angulated screw channels can be created—the NobelProcera FCZ Implant Crown is designed for predictable strength, aesthetics and function.

No cement, no chipping, no problems

The strength of the FCZ Implant Crown makes it suitable for all tooth positions, ensuring predictability even under the high occlusal forces of the posterior region, which makes it an ideal restoration for molars. There is no need to worry about veneer chipping either, as the full-contour characteristics of the NobelProcera FCZ Implant Crown eliminate the need for veneering.

The biocompatibility of the materials used represents an additional benefit by supporting biological stability in the areas where it matters most. Plus, being screw retained, the FCZ Implant Crown is completely cement free, eliminating the risks associated with excess cement. Even the titanium adapter is mechanically retained.

As it can be placed in the posterior region, the FCZ Implant Crown gives clinicians the opportunity to increase the number of screw-retained restorations they place. This means more patients treated with a restorative solution that is easier to maintain and retrieve—and all without cement.

Fig. 2. The NobelProcera FCZ Implant Crown can incorporate an angulated screw channel. This offers easy access to the restoration and can maintain the occlusal function.

Not veneered, but engineered

With the angulated screw channel option, the screw access hole can be placed anywhere between 0 degrees and 25 degrees within a 360-degree radius. This means that it can be angled towards the front of the mouth for easy access even in tight posterior spaces; it also means that the access channel does not need to be placed on the cusp of the tooth, where it might affect occlusion.

Working on the restoration is further simplified with the associated Omnigrip Screwdriver. Its effective pick-up function and secure grip on the screw help the clinician to work safely and efficiently.

Natural-looking tooth colour is another benefit offered by the FCZ Implant Crown. Whichever of the eight available shades is used, the colour will be uniform throughout the material. This means adjustments can be made without having to worry about discoloration. Furthermore, cut-backs or staining can be used to achieve the desired aesthetic effect.

For patients, clinicians and dental laboratories looking for restorations they can rely on, the NobelProcera FCZ Implant Crown provides extraordinary strength for long-term predictability and delivers restorative flexibility too. As a result, it is well on its way to becoming the crown that rules them all!
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How a modern implant system is developed

A dental implant system consists of hundreds of components. It includes everything from the highly advanced implant to simple tweezers. For an optimal function of a system, all parts must interplay. They must fit together like cogwheels and create a smooth and well-functioning totality. If just one cog is misaligned, the entire system will suffer. And this may cause unnecessary problems for the dental team and ultimately the patient.

Mission started

Per Aringskog, R&D Director at DENTSPLY Implants, and his team were well aware of this. To start their development work, they had one of the most thoroughly documented dental implant systems in the business. Decades of research in areas as diverse as mechanical loading and osseous integration had created a product that functioned perfectly, with minimal bone loss and healthy soft tissue. With this as a foundation, the mission now was to create an implant system that was in every detail intuitive for the users. The set target was that the new ASTRA TECH Implant System EV should be the user-friendliest system on the market. Early on, the team realised that no matter how much they thought and tested on their own, there would always be a gap between what worked well on paper and in the laboratory compared to what worked in the everyday clinical reality. In the real world, one had to add unpredictable situations, users with different knowledge levels and the various needs of patients.

A smart solution

The solution was obvious—let the users take part in the development work. That way you get a product that already at launch is tested and adapted to tackle the unpredictable. A product that has its origin where it will be used—the clinics.

The solution is not unique, but it is smart and it works. The method of letting users take part in the development work exists in other businesses. In the software world they have worked with open source code for a long time. Some software developers even publish their software on the Internet. Users and other interested parties can then suggest improvements and further developments. In earlier development projects at the company, there have been smaller focus groups involved. This time however, the team took the idea to a whole new level—a group of 47 clinicians that work with dental implants on an everyday basis was formed. They became known as ambassadors.

“The response to our initial contacts was very positive. Everyone we asked was enthusiastic about taking part,” says Agneta Broberg Jansson, responsible at Global Product Management for the ASTRA TECH Implant System at DENTSPLY Implants.
A smaller group whose members had long professional experience with dental implants, was contacted first. The R&D and Product Management team had by then developed a system. Now, it was time for their efforts in the laboratory to face reality. The group was asked to evaluate the core system and contribute to the further development and refinement of the system.

“The input given at this stage contributed to changes in parts of the system. Some designs were improved in ways we could never have imagined if we had not been open about our work,” says Per Aringskog.

Even if openness and participation turned out to be the key to success, the contents of the project had to be kept secret. The company operates in a highly competitive market where many smaller players are very interested in using smart solutions, preferably without having to invest in the development work. Secrecy was of the utmost importance for this and similar future projects if they were to bear the expenses. Investing in research and development and constantly challenging and improving is part of the company philosophy.

_One big project_

Following the initial phase, the more basic parts started to fall into place. Now it was time to expand the group of ambassadors and to gather broader and more detailed feedback. But, allowing the group to grow was risky seen from a secrecy perspective. From the initial single-digit group of clinicians, the group now grew to almost 50 ambassadors on three continents. But, the saying “Confide in one, never in two; confide in three and the whole world knows” was refuted once and for all.

“It is amazing that we managed to keep the contents of the project secret. But, the participants were so dedicated that they saw this as their own project. We became one big project team with a great internal loyalty,” says Per Aringskog.

By now, the work intensified. Six employees visited the ambassadors in their everyday business and held concept handling sessions. The ambassadors also gathered a few times to exchange experiences and thoughts in the early project phase, and the feedback kept coming in.

As the project progressed, Per Aringskog and his colleagues adjusted the system and new tests took place. After five years of work, only fine-tuning of details remained and eventually everything was ready to be launched.

“Each individual point of view might seem tiny, but put together everyone has contributed to the final result,” says Agneta Broberg Jansson, one of those who worked closest to the ambassadors._

**Contact**

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MIS implants stand out in comparative implant surface study

Left: Residue-free surface of a MIS SEVEN implant (500x magnification).
Right: MIS SEVEN implant surface with micro-/nano-structure (2,500x magnification).
(Images courtesy of Dr Dirk Duddeck and Dr Jörg Neugebauer, University of Cologne)

**_Israeli manufacturer MIS_** Implants Technologies has announced that its products have achieved favourable results in an extensive qualitative and quantitative elemental analysis using scanning electron microscopy. The study was conducted on behalf of the Quality and Research Committee of the European Association of Dental Implantologists. It included 65 systems of sterile-packaged implants from 37 manufacturers and ten countries.

According to the intermediate study report, the C1 implant and the SEVEN implant manufactured by MIS achieved noteworthy results. Although the SEVEN implant exhibited blasting material on up to 7 per cent of the surface in earlier studies by the committee in 2011 and 2012, the researchers did not find even isolated spots with residue on the two MIS implant types of Grade 23 titanium in the current study.

MIS Materials Discipline Manager Dr Tal Reiner explained the surface treatment processes applied by MIS that led to the results: “We monitor the surface roughness, uniformity and purity of our implants on a daily basis, taking samples from selected batches, and using our own in-house scanning electron microscope. Because the analysis is done in our own labs, on-site, there’s no holding up production for repairs.”

“MIS adheres to strict procedures, adding any steps necessary to ensure the lowest percentage of contaminants, including blasting residue or remnants from various stages of production,” Reiner added. “Because the scanning electron microscope analysis is done on samples only, a trained technician also does a 100 per cent visual inspection on each and every implant. Any flawed implants are unconditionally rejected.”

The intermediate report, titled “Surface analysis of sterile-packaged implants”, was published in the 01/2015 issue of the European Journal for Dental Implantologists.

This is the second time within the past 12 months that a study has verified MIS’s implant quality claims. The first study, titled "Identification card and codification of the chemical and morphological characteristics of 62 dental implant surfaces. Part 3: Sand-blasted/acid-etched (SLA type) and related surfaces (Group 2A, main subtractive process)" was published in the June 2014 issue of the POSEIDON journal. According to the study, which included 18 different implants, MIS’s SEVEN implant was among the three implants that showed no pollution and no chemical modification of the surface._

**_contact_**

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