A nuanced perspective on periimplantitis

“We see bone remodeling and bone loss for very different reasons,” according to osseointegration pioneer Prof. Tomas Albrektsson. "The frequency of periimplantitis has been grossly exaggerated in the literature. All bone loss that occurs in the first year is definitely not periimplantitis." Prof. Stefan Holst: "Periimplantitis is currently a prominent topic of discussion at various events and congresses. Is the nature of this debate beneficial for the implantology community or could it be a threat to our reputation?"

**by Dr. Stefan Holst, Nobel Biocare**

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According to some widespread, but crude, definitions, periimplantitis can be characterized by a periimplant bone loss of as little as 1 mm in the first year after initial treatment. Since some post-treatment bone loss is in all but inevitable during initial bone remodeling in even the most successful and long-lasting cases, such definitions lead, as a matter of course, to controversy.

One of the most widely quoted scientists in dental implantology, Prof. Tomas Albrektsson worries that periimplantitis is increasingly being used as an alarming label for benign marginal bone loss around implants. On a recent visit to Zurich, Switzerland, he spoke with Dr. Stefan Holst, Nobel Biocare’s Vice President of Implant Systems and Research, on this topic.

Dr. Stefan Holst: Periimplantitis is currently a prominent topic of discussion at various events and congresses. Is the nature of this debate beneficial for the implantology community or could it be a threat to our reputation?

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From the clinician’s standpoint, we should take all types of marginal bone loss seriously—even if the great majority of implants with some bone loss will never develop periimplantitis. The problem is that we do not know which ones this applies to.

For example, one reason for problems with bone loss is cement remnants in the soft tissue. If this is removed in time, the bone loss stops. The implant can then function properly even after without any problems. However, there is also the possibility that if the cement remnants are left in place for ten, 15 or 20 years, periimplantitis affecting the same implant may follow.

A clinician should always take action when he or she sees marginal bone loss or rather the presence of it, which is called mucositis. Mucositis is only the first sign of an immunological reaction; it has nothing to do with anything other than immunology, but this is unfortunately not understood by many of our clinical colleagues.

Recent studies among the Swedish population imply that implant brand plays a role in periimplantitis. Is this not misleading given that so many factors influence treatment outcomes?

Many of the figures that are being quoted, be that in the recent Swedish publication or others, are lamentably unrealistic. They have used the most liberal definitions of what they call a disease when in reality it is no such thing.

Our own studies of long-term follow-up of implants demonstrate very clearly a similar; small percentage of implants that are affected by periimplantitis. This is between 1 and 2 percent—whether one of the major implant systems or another is used, it makes no difference.

However, implant systems that say they are similar to other documented implants and therefore need no documentation of their own are not to be trusted. Clinicians need to choose an implant system that has its own documentation published in peer-reviewed papers. If that does not exist, do not buy it. Buying a cheap implant that is undocumented can prove to be very expensive.

Based on your clinical experience, what are the factors that play a role in bone loss?

Treatment complications cause bone loss. We call it the “triad of poor”: First is the use of poor implant systems. As mentioned, these exist and are sold at a cheap price. Again, these implant systems should be avoided.

Second is poor clinical handling by clinicians without the necessary skills. Third is what we can term poor patients—those patients that are difficult to treat. These are the causes of bone loss that in some instances, although rare, may in the long term lead to periimplantitis, but in most cases do not.

So what can we as dental implant professionals do to prevent the proliferation of misinformation about periimplantitis?

I am increasingly irritated with people calling benign bone loss a disease. Those who are doing so have to read the new research that is out and realize they are wrong.

The profession must unite to protest against alarming reports in a much stronger and united manner than we have done to date. However, we must, of course, continue to take patients very seriously. We cannot ignore bone loss, even if it proves to be benign. We have to be active all the time and work to the best of our knowledge for our patients.

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More to explore!

To read more about this and related topics, such as findings about screw versus cement retention, please visit nobelbiocare.com/news

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*“Implant systems that say they are similar to other documented implants and therefore need no documentation of their own are not to be trusted.”*

*Prof. Tomas Albrektsson: “The frequency of periimplantitis has been grossly exaggerated in the literature. All bone loss that occurs in the first year is definitely not periimplantitis.”*
A former champion driver, now a dentist turned implantologist, Dr. Arturo Llobell has established himself as a respected clinician in his native Spain and as a sought-after speaker at major dental events around the world.

A leader of tomorrow
Llobell was named a member of the Emerging Leaders program by the Foundation for Oral Rehabilitation (FORS), which he says helped him develop as a speaker. “Being part of FORS’s Emerging Leaders group was a great experience for me as I had the chance to get in touch with world-renowned clinicians who were more than happy to give me—and the other young clinicians involved—a hand in every aspect of clinical dentistry, as well as lecturing advice.”

With its new Guide to Growth program, Nobel Biocare is hoping to help more aspiring implantologists follow Llobell’s example. Combining advanced clinical training with practice management advice, this development program seeks to help ambitious clinicians fulfill their potential by growing their implant practices.

Llobell is proud that with the appropriate skills, partners and advice, the sky is the limit. He is part of the lineup at the 2016 Nobel Biocare Global Symposium in New York that reads like a who’s who of implant dentistry. “To be sharing the podium with some of Nobel Biocare’s top speakers is an honor. I am really looking forward to it.”

Driving in the fast lane
He has made a place for himself on two different kinds of podiums

by Michael Stuart, Nobel Biocare

Dr. Arturo Llobell likes a challenge. Right from the start of his dental career, one specialty was not enough. He opted to become both a periodontist and a prosthodontist, so no two days would ever be the same. It paid off. Today, Llobell enjoys a busy and varied dental practice in Valencia, Spain.

Though just 28, Llobell’s first career was not dentistry. To say his previous vocation was also fast-paced would be an understatement. As a junior racing driver, Llobell was among the best in the world, having been twice named Spanish national champion and finishing fifth in an international competition.

Many of Llobell’s former opponents became Formula One stars, and he previously tested cars alongside Sebastian Vettel and Lewis Hamilton, both of whom went on to become world champions.

Patient care comes first
Eventually there came a time when Llobell had to choose between a career as a clinician and pursuing the path to Formula One. A bad crash, among other factors, led him to opt for dentistry, and he has not looked back since. Interestingly, he says, the two fields are not as different as one might think.

“In both racing and dental surgery you need a significant amount of preparation,” Llobell explained. “Then, during the task at hand, you need a high level of concentration and attention to detail. You also need to react to changing variables if you are to succeed.”

Today, Llobell has swapped one podium for another. He now speaks at implantology events around the world and has recently accepted faculty positions at the University of Valencia in Spain and the University of Pennsylvania in the U.S.

Dual specialties, one implant provider
At the heart of Llobell’s progression are the positive treatment outcomes he achieves for his patients. A Nobel Biocare customer since the start of his career, Llobell says the company’s products have helped give him the confidence to use increasingly progressive treatment protocols.

“I started working with Nobel Biocare during my residency in both periodontics and periodontal prosthetics. I chose Nobel Biocare because it is both an established and leading implant company that offers products for both specialties,” he explained.

Llobell added: “A number of important clinicians use their products on a daily basis, and that gives me confidence in the brand.”

“Primary stability without surprises”
Llobell is particularly impressed with the new NobelParallel Conical Connection implant. “I find the NobelParallel Conical Connection implant easy to use in multiple clinical scenarios. It has a straightforward drilling sequence, which makes it easy to maintain the direction during insertion, while also giving me the chance to achieve primary stability without surprises.”—“Being able to achieve adequate primary stability permits me to opt for immediate loading protocols more often than before,” he added.

More to explore!
More information about Llobell’s presentation, titled “Emerging technology—Integrated workflow improvements in everyday routine”, which he held yesterday at the Nobel Biocare Global Symposium can be found at www.nobelbiocare.com/global-symposium-2016.
How to optimize the emergence profile

An interview with clinician Dr. Léon Pariente

by Michael Stuart, Nobel Biocare

According to Dr. Léon Pariente, a leading clinician based in Paris, France, the emergence profile matters. In this short interview on the topic, he explains why efforts to optimize the emergence profile should begin at the planning stage.

Nobel Biocare: Dr. Pariente, what are the most important things to consider in working to establish an optimal emergence profile?

Dr. Léon Pariente: The emergence profile should be considered holistically: It is the portion of the prosthesis that allows the implant to turn into a natural-looking tooth. It is the border between the surgical and prosthetic worlds.

An optimal emergence profile gives a smooth transition from the circular implant platform to the natural shape of the tooth at the gingival level. It should be customized for every restoration.

To be ideal, it should be considered during the implant planning phase, particularly in selecting a suitable implant, both in terms of connection type and platform diameter, as well as in determining the implant positioning in all three dimensions. Clinical factors to take into consideration are the thickness of the gingiva in the area of implant placement, the size of the horizontal cross-section of the future crown at the gingival level, and the position of the future crown relative to the bone.

How does the choice of implant affect the emergence profile?

Firstly, the discrepancy between the diameter of the platform of the implant and the diameter of the cross-section of the future crown at the gingival level needs to be compensated for by the abutment. The contour of the abutment from the platform to the gingival level constitutes the emergence profile. The angle between the platform of the implant and the wall of the abutment should be as wide as possible to avoid creating a bacteria reservoir.

In addition, the connection type (external or internal) and the collar of the implant, whether polished or not, have a direct influence on the depth to which an implant can be placed under the bone level, therefore allow more flexibility when placing the implant. Smaller-platform implants should be placed deeper, leaving more vertical room to compensate for the discrepancy in diameter between the horizontal cross-section of the future crown at the gingival level and the platform itself.

Why is it worth investing time and effort in optimizing the emergence profile?

An optimal emergence profile supports the gingiva around the implant-retained crown. This prevents the formation of proximal or buccolingual food traps and allows the patient to maintain the required level of hygiene around the implant. Furthermore, in anterior cases, an ideal gingival contour must be created with a provisional crown before taking the impression for the final crown. The main challenge in this case can be transferring the soft-tissue contour to the cast accurately.

Finally, what are the main misconceptions about establishing the emergence profile?

Because of the popularity of standard abutments that are cheap and easy to use, people often think that it is very complicated or expensive to create abutments with a customized emergence profile. The accessibility of the NobelProcera solution should make customized abutments the standard of care.
KaVo MASTERsurg LUX Wireless surgical unit

Taking dental surgery to a whole new level

by KaVo Kerr Group

The KaVo MASTERsurg LUX Wireless was designed to redefine surgical standards, offering all dentists and oral surgeons an ideal surgical solution, no matter what their individual needs.

With an eye toward maximizing comfort, the unit features wireless foot control, allowing the user great freedom of movement, and a modern touchscreen with a non-reflecting display to allow optimal viewing from all angles. Valuable for the comfort that comes from peace of mind, the data documentation system features wireless programming to address individual needs.

Another critical feature is the customizable programming to address individual users, a clinician can customize up to ten programs, each with ten individually programmable steps.

These outstanding features are the foundation for the quality and high performance provided by the INTRA LUX S600 LED, one of the world’s lightest surgical motors.

Delivering on the promise of innovation and quality, KaVo users worldwide have come to expect, the KaVo MASTERsurg LUX Wireless is taking dental surgery to a whole new level, providing a feature set that makes a substantial difference in delivering maximum performance on a daily basis.

Treatment planning: Begin with the end in mind

The value of planning for final results before treatment initiation

by Dr. Gary Orentlicher, US

I have frequently remarked that in the last 15 years there has not been a greater practice builder for me, as an oral and maxillofacial surgeon, than my involvement in guided surgery. Using my i-CAT (Imaging Sciences International), in combination with Nobel Clinician Software (Nobel Biocare), has made me a better, more accurate dental implant surgeon, and most importantly, has greatly improved my patients’ case outcomes. It has changed the way I practice daily in all aspects of patient diagnosis, planning and surgery.

i-CAT and NobelClinician allow for treatment planning and surgical predictability with full 3D and restorative outcomes in mind. i-CAT’s high-resolution volumetric images provide complete views for a more thorough analysis of bone volume and structure and of teeth and implant orientation. This means more precise evaluations, minimally invasive procedures, more predictable treatment results, shorter appointment times and happier patients.

In a presentation I made this spring, I spoke about what I regard as the indications for guided surgery. They include:

- significant alteration of bony anatomy (e.g., trauma, grafting, distraction and pathology)
- medical problems (e.g., radiation therapy, bleeding dyscrasias, and orthopedic and psychological problems). In each case, there are four primary steps to a successful guided surgery workflow:

1. Step 1: 3-D imaging with a scanning cone beam 3-D unit, which offers many valuable features, including flexible imaging control. This allows me to customize my scans by minimizing the field of view and radiation dosage while maximizing resolution. With i-CAT, I gain greater control over my workflow and the entire scanning process.

2. Step 2: 3-D treatment planning with planning software

3. Step 3: Creation of a computer-generated guide, laboratory and surgery

4. Step 4: Knowledge of the appropriate implant-specific drilling instrumentation.

In my clinical experience, the quality of the products one uses makes a significant difference in the process and final treatment result. I look for quality, ease of use and support that helps me practice with the greatest amount of confidence.

I use the i-CAT cone beam 3D unit, which offers many valuable features, including flexible imaging control. This allows me to customize my scans by minimizing the field of view and radiation dosage while maximizing resolution. With i-CAT, I gain greater control over my workflow and the entire scanning process.

In my clinical experience, the quality of the products one uses makes a significant difference in the process and final treatment result. I look for quality, ease of use and support that helps me practice with the greatest amount of confidence.

About the author

Introducing creos xenografts

Designed by nature, developed for clinicians

by Nobel Biocare

- Sufficient bone quantity and quality are essential for successful dental implant treatment. For that reason, Nobel Biocare introduced cross-regenerative solutions, an extensive array of options for guided bone regeneration and guided tissue regeneration procedures.

The latest addition to the creos range is the creos xenogain bone substitute. Together with the creos xenoprotect resorbable collagen membrane, it now offers clinicians a comprehensive set of xenogenic options for a wide variety of indications and preferences.

A foundation for implant treatment—creos xenogain

This creos xenogain bone substitute has been developed with clinical needs in mind. It has been proven to be biocompatible, and unique processing methods remove the bovine proteins and lipids. The natural bone matrix of creos xenogain is characterized by micro- and interconnected macropore structures. With a calcium phosphate ratio that reflects the composition of human bone and a low crystalline structure, creos xenogain is accepted by the body as a suitable framework for bone formation. Bone substitutes in the creos xenogain range have a slow resorption rate and act as a long-lasting scaffold, maintaining space for bone regeneration.

Easy to handle—creos xenoprotect

For quick and easy application of the graft, creos xenogain is delivered sterile and comes either in a vial or in a bowl ready for mixing. There is also a choice of two granule sizes and up to four volume options, offering a wide variety of alternatives depending on the clinical indication and preference.

The natural barrier—creos xenoprotect

Once the bone substitute has been applied, the resorbable creos xenoprotect membrane can be used to hold it in place and act as a barrier to soft-tissue ingrowth. Manufactured using highly purified collagen and elastin fibers, it possesses outstanding handling properties that make it easy to reposition and unfold. Hydrated in seconds, but with minimal size increase, creos xenoprotect can be trimmed when dry for accurate placement at the graft site.

Once hydrated, creos xenoprotect offers stronger than other non-cross-linked and chemically cross-linked membranes in terms of suture retention. As it is highly resistant to degradation, creos xenoprotect offers prolonged protection of the graft site, while its excellent vascularization behavior and tissue compatibility support fast healing.

Each product in the creos range of xenogeneic solutions has been developed to optimize treatment results. This comprehensive selection offers biocompatibility, easy handling, slow resorption rates and variety. Whichever the clinician chooses, he or she can be confident of building a reliable foundation for implant treatment success.

References:
5. Data on file for clinical, mechanical and material properties of creos xenogain xenogeneic solutions, including articles and cases, available at www.nobelbiocare.com/creos.

More to explore!

For more information about creos regenerative solutions, including articles and cases, visit www.nobelbiocare.com/creos.
For you, your dental practices and the patient, what are the main benefits of the team approach?

Reebye: Implant dentistry is rapidly evolving and its complexities require solid prosthetic and surgical knowledge. Working as a team allows us to make the most of our individual strengths and expertise. Sharing knowledge is essential for making advances in our field. Often, the greatest changes I make to my patients are due to what Tarun has taught me on the restorative side; and conversely, Tarun has changed his treatment and prosthetic planning since he became involved in surgeries.

Aagarwal: What’s more, I now have the confidence to treat complex cases that I would never have even started in the past. The patients truly benefit from our team approach in that they have a seamless treatment experience. Each member of the team is focused on his or her core competency, and this leads to better results. I should also mention that practice productivity has steadily increased. As our mutual caseload has grown, so have referrals and our reputation within the community. It is like a snowball gaining size and momentum going downhill.

Would you say that you each bring different qualities to the partnership?

Aagarwal: Without question. Uday is a dual-degree (M.D. and D.M.D.) board-certified oral/maxillofacial surgeon. His expertise and knowledge of surgery are far ahead of mine. I am an esthetically focused general dentist who has tremendous experience in digital dentistry. By each having an open mind, we are able to blend the digital technologies of restorative dentistry with the surgical world of complex implant dentistry. Over time, we have learned a great deal from each other and now have a greater appreciation for the complexities and issues that the other deals with in the treatment process.

Do you ever have a difference of opinion when it comes to planning the treatment?

Reebye: And it usually works out that whoever wins the argument has thought through the issue at hand a little longer and harder.

Aagarwal: I can give you an example. Uday was hesitant to begin using computer-guided implant surgery. Initially, it was slower than the traditional technique he was used to, but for me, it made the restorative component absolutely more predictable and quicker. After our first case, he became aware that the extra 20–30 minutes of his time saved the patient multiple visits on the restorative side.

Reebye: It was an easy trade-off to make. At the end of the day, we resolve any differences of opinion, guided by a single principle—do what is in the best interests of the patient.

Is the All-on-4 treatment concept especially appropriate for your team approach?

Reebye: Yes, in my opinion, the All-on-4 treatment concept can only be successful as a team effort. It is a beautiful treatment concept that marries surgical and prosthetic philosophies. I have to tell you that teamwork brings a great deal of enjoyment to the clinic. If you are happy when working, patients are happy and assistants are happier; and somehow that combination results in great outcomes.

Aagarwal: It really does! In our team approach, the restorative dentist creates the case blueprint, the surgical specialist serves as an engineer—by verifying the blueprint is surgically feasible—and the anesthesiologist is totally focused on patient comfort. Starting with the end in mind and collaborating to make it possible have routinely led to great outcomes.

Aagarwal: We see many edentulous or about-to-be edentulous patients who need new teeth. Previous treatment modalities were so expensive and difficult that these patients left our clinics depressed, with no hope in sight. The All-on-4 treatment concept allows us to dignanics to give hope to many patients who once had few or no encouraging options. Now we can dramatically change the lives of these patients for the better.

Aagarwal: And because this treatment concept is more affordable for patients, a greater number of patients become implant candidates. For us, the All-on-4 treatment concept has virtually created a new market.

What would you say to clinicians thinking about starting with the All-on-4 treatment concept?

Aagarwal: Go learn about it with an open mind! There are literally millions of patients who can benefit from this treatment. Nobel Biocare has a predictable workflow with a tremendous support system to make you successful.

Reebye: Before I took my first All-on-4 class, all I heard from many clinicians (none of whom had taken a class or performed All-on-4 surgery) was that the concept was flawed and a recipe for disaster. Seven years later, all I can say is that I am so happy we did not listen to them. My advice? Keep an open mind, take a course and see for yourselves what a great service you can provide for your patients.

For any clinicians considering adopting a team approach like yours, is there a secret to a successful partnership?

Aagarwal: You have to let go of your ego. We are all equals to the patient, after all, each bringing a different area of expertise to the team.

Reebye: Let me add this: Listen to your patients. Be willing to talk to other clinicians, to share ideas and never be afraid to reach out when you need help. Most of us love to share what we know with each other—to be of help and to learn more in the same time. And finally, enjoy it! It is a wonderful journey!

For more information on the All-on-4 treatment concept, please visit www.nobelbiocare.com/all-on-4.
Nobel Biocare does not develop individual products but entire solutions that provide fully functional, natural looking, long-lasting results. In order to ensure long-term clinical performance, safety and cost-efficiency for everyone involved in the treatment process, each Nobel Biocare component has been designed to fit and function perfectly with its related components. Together, they produce a finely tuned system.

We at Nobel Biocare study systems from their initial design to long after delivery to the end-user, the patient. We develop and scrutinize engineering and manufacturing processes, and we carry out quality assurance, clinical research and post-market surveillance. Only with this approach can we be certain that the system will function safely and reliably for many years to come.

When assessing any implant-supported restorative solution for a patient, one has to keep in mind that the entire system under consideration is only as strong as its weakest link. The performance of each specific component depends not only on the quality and design of the component itself but also on its interface with the rest of the restorative system. Consequently, each component should not be evaluated on its own. Clinically relevant conclusions can only be reached when a component is tested within the system it is a part of. Nobel Biocare therefore conducts testing and research on both individual components, such as implants, abutments and screws—and how they work together—as well as the entire system that they constitute.

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The very definition of synergy

The whole is greater than the sum of its parts

Parameters that influence long-term performance

Computerized simulation tools, such as finite element analysis, and biomechanical testing in the laboratory have served to identify parameters that can impact the performance of an implant system. These parameters include joint compression (the force that acts at the implant-abutment interface under loading conditions), preload (the tensile force keeping the components together) and the friction coefficient (which depends on the surface materials that are in contact with each other).

Other significant parameters include the force that the patient exerts on the system by chewing (masticatory force), as well as the length of the contact between the abutment and the implant, as well as—when using a clinical connection implant—the angle of the abutment. A small change in any of these parameters—even one not visible to the eye—can lead to extreme load and stress conditions that result in system failure.

Precise fit for joint stability

The interface between the implant and abutment is critical for joint stability. Manual adjustment of a cast or the use of a substitute abutment can alter the contact angle and contact length. Such an undefined contact situation on the implant steel, but may also have an impact on performance-relevant parameters.

Preload, the force that holds the components together

Preload is defined as the tensile force created in the clinical screw as a result of screw tightening. It is generated by the application of torque to the screw, although only a fraction of the torque force is stored as preload values that are too high can result in component fracture. To account for this major loss of torque, and to ensure that the system is sufficiently held together, the screw has to be inserted at the recommended torque. Fully manual screw insertion is likely to result in lower torque and, consequently, suboptimal preload. Insufficient preload leads to increased relative motion between the system components, and this can contribute to screw loosening and/or component failure. Conversely, preload values that are too high can result in component fracture.

Optimized to the last detail

Nobel Biocare abutments are delivered with a dedicated clinical screw that has been optimized for the implant-abutment system. The interface between the implant collar can bear—as an example—a diamond-like carbon coating, screws marketed under the Torque brand show higher peak forces have to be distributed in a controlled way. This can only be achieved by using high-quality, precision-manufactured components that have been designed and tested both individually and as part of the system for which they have been designed.

Avoid substitutes, minimize patient risk

If substitute components are used, the parameters governing system performance are no longer controlled. Consider maximum joint compression—which defines the load that the implant collar can bear—as an example. A substitute may result in a force that is higher than the allowed maximum, causing the implant to fracture.

To prevent such catastrophic results, the peak forces have to be distributed in a controlled way. This can only be achieved by using high-quality, precision-manufactured components that have been designed and tested both individually and as part of the system for which they have been designed.
Why NobelProcera CAD/CAM bars?
For the sake of quality, function, esthetics and good business

by Michael Stuart, Nobel Biocare

Certified dental technician Thomas Wade is the owner of New Horizons Dental Laboratory on the outskirts of Denver, Colorado, U.S. According to him, the quality and efficiency gains that result from outsourcing the production of bars to NobelProcera is rewarding for everyone involved.

Wade has chosen NobelProcera technology as his exclusive provider of CAD/CAM-milled titanium bars for two main reasons. "First of all," explained Wade, "the NobelProcera software allows us to access and provide a wide variety of solutions entailing many different types and styles of bars, customization features, and attachments—all in order to better address the patient's individual needs."

Secondly, it is Wade's view that this technology puts design control in the proper hands. "A bar is best designed by a skilled technician with experience in intra-oral biomechanics," he stated simply. He went on to explain that, since the bar is only one of several components in a successful restoration, the bar designer must fully understand how the bar will support the other components, such as denture teeth and the PMMA base, in order to provide long-lasting function and esthetics.

"Meticulous quality control by NobelProcera, especially as it relates to passivity of fit and finish," Wade added, "all but eliminates remakes," saving time, effort and money.

Clear advantages

In order to convince clients to adopt this technology, Wade uses photographs of the bars themselves and of the finished cases both in his brochure and on his website. "In the early days, I actually took the first few bars I did around to key clients to show them the accuracy and beauty of these bars first hand," he explained. "Today, I not only show the bars, but also use screenshots taken from the design, including the all-important 2D cross-section to help highlight to better, more effectively treat a patient's specific intra-oral needs."

NobelClinician facilitates teamwork

Especially in cases involving edentulous or nearly edentulous arches, clinicians who use NobelClinician treatment planning software become natural collaborators for a laboratory like New Horizons.

"Demonstrated quality serves as a strong marketing tool," he said. "Also, at a time when most bar cases have been oversimplified to a one-size-fits-all treatment plan of full wrap design, I have made my clients aware that we can offer a multitude of design styles."

"Digital planning—which identifies any obstacles, defines the parameters for any necessary bone augmentation or reduction, and indicates strategic placement of the implants—is the key to overall prosthetic success," Wade asserted. "What the implant surgeon does, or does not do, on the day of surgery sets the tone for the overall success of the case moving forward, but make no mistake, even though implant placement is a surgical procedure, it is proshtagically driven."

According to Wade, NobelClinician software makes it possible to bridge the gap between the surgeon and the restorative team, and encourages collaboration and communication between the two.

"Success used to be measured simply by the percentage of surviving, well-osseointegrated implants. Today, success needs to be redefined to take good restorative planning and strategic implant placement into account. To serve the patient well, we want to be able to fabricate a prosthesis that will work well, look good and prove durable. Planning with NobelClinician is the best option available to achieve this."

According to Wade, both the process and end result are always superior—with improved predictability, repeatability, enjoyment and profitability—when working with dentists who use NobelClinician. "It also prevents stress and heartache, and saves us all time," he emphasized.

Having NobelClinician software running at his laboratory has become a major boon to his business, by vastly increasing his stature as a valued team member, according to Wade. "I do not plan cases for the clinicians, but I do review a wide variety of restorative criteria, and verify that the plan will facilitate the fabrication of a highly successful prosthesis."

Even when the team is geographically separated, "the ability to share a plan between the three corners of the 'golden triangle' (i.e. the surgeon, the restorative dentist and the laboratory) offers unprecedented opportunities for success."

Using NobelClinician on the front end and NobelProcera bar technology for the final restoration on the back end makes for a powerful combination.

Wade concluded: "In short, it is a beautiful thing!"
Taking life at more than face value
The face can express who we are as well as what we mean to say

by Prof. Jill A. Helms, U.S.

We come into this world primed to connect with the faces around us. This ability is literally hardwired into our neural circuitry. There is a specialized region in our brain, located in the temporal lobe in a region called the fusiform gyrus, that is filled with neurons that preferentially fire whenever a face comes into view. Within minutes of birth, babies begin using this brain region; studies demonstrate that even very young infants show a strong preference for looking at faces over all other objects.

The brain is responsible for coordinating every single activity that keeps you alive; and some terribly precious real estate in the brain is allocated to a pint-sized structure whose only apparent purpose is to become activated in response to a face. Since evolution is constantly shaping the brain and adapting its function to ensure our survival, the fact that a brain region is dedicated to this task indicates that facial recognition must be essential for our survival.

But why?

One reason is that the face is the means by which we communicate. Thirteen years after On the Origin of Species was published, Charles Darwin addressed this very question in The Expression of the Emotions in Men and Animals. In this book, Darwin wrote, “The welfare of mankind depends on the expression and recognition of emotion.” And if you do not believe Darwin, then witness any adult with an infant. Of all the motor skills that infants must master in the first few years of life, none is as important as mimicking the facial gestures of people around them. Even at a very early age, humans devote a great deal of attention and energy to teaching infants the movements required for facial expression. In fact, we know that children who are incapable of or uninterested in learning this task are often later diagnosed with conditions such as autism.

This focus on the face ultimately translates into our faces becoming central to our sense of identity. One does not need to look much further than children’s drawings to see this. Ask a 5-year-old to draw a human being and you will get a stick figure with a lollipop-shaped head, complete with a face. The face defines the entity. Illustrators of children’s books exploit this very characteristic: Everything of emotional importance to a child is illustrated with a face. The sun has a face. The moon has a face. Thomas the Tank Engine has a face. It is a way to personalize the world.

Beauty, a sign of well-being

The face is not only important as a means to communicate; it also serves to advertise our health, youth and vitality. A face that projects an image of great health indicates the individual faces that make up the composite. In short, as a species, we find the average face to be the most beautiful.

Reverse side of the coin

Diseases and injuries can create asymmetries and imbalances in the proportions of the face that can be fatal for social interaction. Because the face is often the calling card of a disease, people often intuitively shy away from disfigured people. Looking different on the outside, of course, does not mean that you are different on the inside. Nevertheless, there is no denying that a physical transformation of our face powerfully affects the way we view ourselves and the way others respond to us.

Although beauty is best defined by the kindness, compassion, intelligence and warmth of an individual, it is also expressed as optimism and perseverance in the face of adversity. For those who have suffered a mishap or a disease that leaves them looking different, reconstructive surgery and/or prostheses supported by tissue-integrated implants can be decisive for living a good life outside the confines of the home.

Across all ethnic groups and epochs, the general hallmarks of beauty have been symmetry and a balance in proportions.

Beauty, a sign of well-being

Across all ethnic groups and epochs, the general hallmarks of beauty have been symmetry and a balance in proportions.

About the Author

A member of the scientific committee for the 2016 Nobel Biocare Global Symposium and a professor in the Department of Surgery at Stanford University, Dr. Jill A. Helms carries out research in the field of regenerative medicine, collaborating with experts in bioengineering, materials science, physics and the life sciences. In this article, she explains why reconstructive craniofacial surgery can be decisive for the well-being of a deformed or injured patient.

More to explore!

Manufacturer matters when it comes to ceramic abutments

An interview with Prof. J. Robert Kelly

by Nobel Biocare

A new study conducted by leading materials scientist Prof. J. Robert Kelly has confirmed that not all dental implant restorations are created equal. In this interview, Kelly discusses the research, which has very recently been published in the International Journal of Oral and Maxillofacial Implants.

The findings make for positive reading for NobelProcera customers.

Nobel Biocare News: Your latest research tested the fatigue behavior of zirconia implant abutments from four major manufacturers. What led you to take this approach?

Prof. J. Robert Kelly: We wanted to study commercial products not in order to make commercial comparisons, but to study realistic products. Our goal was to look for positive commercial comparisons, but to study realistic materials. What led you to take this approach?


“Manufacturer matters”: the four abutments look very similar in clinical examination, but differ significantly in performance, indicating the impact of design and production method.

NobelProcera®

1,000,000,000,000,000,000,000 cycles

GlideWell®

1,000,000 cycles

1 million cycles

Extrapolated cycles for 10% failure at 70% expected clinical load

Full zirconia abutments

Straumann®

30,000,000 cycles

20 million cycles

Atlantis™

20,000,000 cycles

“Manufacturer matters”: the four abutments look very similar in clinical examination, but differ significantly in performance, indicating the impact of design and production method.

Considering that manufacturer matters, do you advocate using only authentic components?


Considering that the NobelProcera abutment for BL implants outperformed all of the others, what are your thoughts? NobelProcera is produced in a high quality process, since Nobel Biocare fabricates components that are designed, tested and then verified for the BL implant system.

Zirconia abutment D1.

How would you explain this apparent weakness of the other abutments?


In general, I advise against using lower cost third-party abutments being used with a system that they were not designed for. Considering that manufacturer matters, do you advocate using only authentic components?


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Zirconia abutment D1.
“This is the most comprehensive congress I have ever taken part in”

An interview with scientific committee chairmen Drs. Bertil Friberg and Peter Wöhrle

by Dental Tribune International

Drs. Friberg and Wöhrle, could you please introduce yourselves to the readers by telling them how you became involved in the scientific committee of the 2016 Nobel Biocare Global Symposium?

Friberg: I have been a member of the Brånemark Clinic in Gothenburg, Sweden, since its founding in 1986. For the past 30 years, I have been working in close collaboration with Nobel Biocare regarding lectures, research and clinical activities.

Wöhrle: During my doctoral and postdoctoral training at Harvard in the 1980s, I was introduced to the work of Prof. Per-Ingvar Brånemark. Ever since then, implant dentistry has been the focus of my professional career. Over the years, I have become increasingly involved in research and teaching in addition to clinical work. My formal training in the interrelated areas of implant dentistry, namely surgery, prosthodontics and laboratory technology, allows me to help improve outcomes based on understanding the effects and synergies on each other and streamlining different aspects of treatment.

What did you consider most important in compiling the scientific program for the symposium?

Friberg: This is the most comprehensive congress I have ever taken part in. It covers all topics of importance in daily implant practice, the laboratory, preclinical evaluations and treatment planning, implant placement and removal, maintenance considerations, complications and how to handle them, and how to interpret result data.

Wöhrle: This symposium has something to offer for every attendee, as it covers all aspects of topics related to implant dentistry. We went to great lengths to develop several different tracks based on specific topics of interest. Once the attendee decides which topic is most interesting, the schedule allows sufficient time to fully explore that subject via lectures, master classes and hands-on courses. We will have multiple activities every minute of the symposium, offering unprecedented learning opportunities based on individualized interests and scheduling.

The theme of this year’s event is “Where innovation comes to life.” Which innovations can participants look forward to in particular?

Friberg: In addition to several new components, including NobelParallel, NobelActive, WP and angulated screw channel abutments, which aim to facilitate treatment in the posterior region, several years of new implant designs for specific clinical situations and represent the latest in treatment and prevention of periimplantitis.

Wöhrle: There will be ample innovations presented during the symposium, culminating in the innovation assembly forum on Saturday afternoon. The entire session will be devoted to new and upcoming products and trends in implant dentistry. This is an event not to be missed.

What are the implications of these new developments for daily clinical practice, and how can both dentists and patients benefit?

Friberg: These developments will help facilitate treatment in the posterior region, select cases, shortening treatment time and thus cost for patients. Currently, the digital revolution—CT-based planning programs, CAD/CAM-generated surgical templates, and digitally designed and manufactured restorations—have changed the way we practice dentistry today, and it will change it even more in the future.

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Friberg: This meeting addresses the main innovations we have seen over the past several years, such as improved techniques in both surgery and prosthodontics. With the technology and methodology today we are, for example, able to treat severely compromised cases in terms of poor bone volume and poor bone texture much better. At the symposium, participants will have the opportunity to interact during treatment planning sessions, and be able to give their own opinions and suggestions, which will be presented by various speakers.

Wöhrle: This symposium has something to offer for every attendee, as it covers all aspects of topics related to implant dentistry. We went to great lengths to develop several different tracks based on specific topics of interest. Once the attendee decides which topic is most interesting, the schedule allows sufficient time to fully explore that subject via lectures, master classes and hands-on courses. We will have multiple activities every minute of the symposium, offering unprecedented learning opportunities based on individualized interests and scheduling.

Friberg: In my opinion, computer planning of implants is much more important when treating patients with severely resorbed jaw bone and in patients in whom implants may interfere with various anatomical landmarks, and for whom exact positioning of the implants may be the difference between success and failure. Straightforward cases are normally solved without digitalization.

Wöhrle: Digitalization will absolutely be addressed. Digital implant planning and placement deliver more efficient care with consistently better outcomes, especially in the partially edentulous patient. Placing an implant that is restorable is no longer the proper treatment; with today’s technology, one can do better. Properly executed guided surgery, combined with proper treatment planning, elevates the level of excellence while increasing efficiency and safety.

Another major topic in implant dentistry is the treatment and prevention of periimplantitis. What is the current scientific evidence on this issue?

Friberg: This is a topic addressed in many congresses today. We must keep in mind that there is still not an accepted definition of periimplantitis and, thus, prevalence figures vary a great deal. Several efforts have been made to gather expertise from all over the world to provide consensus statements on this problem.

Wöhrle: As Dr. Friberg just explained, there is no consensus on the definition of periimplantitis, its cause or even its treatment. I am looking forward to the latest research and updates that will be presented during the symposium.
Joe Merheb
Belgium

“I am a surgeon, and I was invited to attend by Nobel Biocare. I am here to learn more about implant surgery. A nice smile and the ability to chew is a very important part of a person’s happiness and comfort. Being able to give this to my patients in a nice and elegant way, which differs a lot from traditional prostheses, is a very important improvement. It helps patients physically, psychologically and socially. There are a lot of interesting presentations being offered here.”

Gaurav Malik
India

“This is one of the best global events, offering so much innovation. I am here to learn about the All-on-4 treatment concept. We just started introducing new modalities in my practice, especially the All-on-4 treatment concept. New York. I use three different implant systems in my practice, and I use Nobel Biocare in about 80 percent of my cases. This technology allows me to offer my patients good function and good esthetics.”

Chinji Nakajima
Japan

“I am here at the Nobel Biocare Global Symposium to study. I have been using implants in my practice in Tokyo for 20 years now. I am particularly interested in the bone regeneration class being presented here by Dr. Istvan Urban of Hungary.”

Mélinda Paris
Canada

“I am from Québec City, and I am here to get more expertise in the All-on-4 treatment concept. I am particularly looking forward to the hands-on educational opportunity here. I use Nobel Biocare implants in my practice. I like the stability. The technology is user-friendly, and the company’s customer service is very good.”

Anthony Sallustio
USA

“I have been using Nobel Biocare implants almost exclusively in my practice in Ocean Township, New Jersey, for 20 years. I am here looking for new technologies and leading edge of technology for the benefit of my patients.”

Andy Temmerman
Belgium

“It’s always nice to see some valuable lectures and to see New York, of course. I am a regular user of Nobel Biocare implants. I have heard that they will be introducing new abutments, and that is something I am looking forward to. There is a lot of science right now advocating for the immediate placement of abutments, and I think this will ultimately lead to a final outcome in a better way.”

Joe Merheb, USA

“I have been using Nobel Biocare implants in my practice in New York City for six years. I am here at the conference to see what’s new and current, and to see what I can improve on. I always strive to be on the leading edge of technology for the benefit of my patients.”

Chinji Nakajima, Japan

“I have been using Nobel Biocare implants in Tokyo for 20 years. I am particularly interested in the bone regeneration class being presented here by Dr. Istvan Urban of Hungary.”

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Global Symposium attendees speak out
Dental professionals from near and far are here to stay on the cutting edge

by Dental Tribune International

Dental practitioners from around the globe have gathered in New York City for the 2016 Nobel Biocare Global Symposium. They came here to take advantage of the wealth of information and expertise being shared, to be among the first to see the latest technological advancements, and to connect with their compatriots. DTI spoke with a few attendees to find out what they are hoping to learn here and take back home to their practices.

Javier Alández
Spain
“I think everything being presented here at the symposium is very interesting. I have been using implants in my practice for 27 years. I always work with Nobel Biocare. With these products I can offer my patients security and confidence.”

Patrik Andrén
Sweden
“I only started placing implants two years ago and have already attended a number of local Nobel Biocare symposia in Sweden. However, this is my first global event and I’m very excited. I’m especially looking forward to learn more about digital dentistry, because that’s the way to go.”

Bassim Essadi
Jordan
“This is the biggest event in dental implants, and I am here every three years. All of the speakers here are very good. This technology means less discomfort, more predictability and stable results for my patients. In addition to the very valuable lectures, I also enjoy being in New York.”

Javier Alández, Spain
Patrik Andrén, Sweden
Bassim Essadi, Jordan
the people joining this third global event of Nobel Biocare have travelled long distances from all over the world, which reminds us how important this conference is,” Wöhrle said.

In addition, Nobel Biocare prepared an exciting array of forums, including an innovation assembly on Saturday, at which the company will be exclusively previewing its upcoming innovations, and a full-day forum on Sunday that will be focusing on comprised patient treatment.

Under the slogan “Where innovation comes to life”, Nobel Biocare is unveiling a number of innovative new products and solutions at the event, including the On1 restorative workflow concept that bridges the gap between the surgical and prosthetic workflows, a new NobelProcera Crown in a new high-translucency multi-layered full-contour zirconia material, and the new NobelZygoma implant that provides greater surgical and prosthetic flexibility when treating severe maxillary resorption without grafting.

“The innovations we are presenting at the Nobel Biocare Global Symposium 2016 have all been created to address the specific needs of today’s dental professionals as they strive to improve care for patients. Informed by studies confirming the possibilities and advantages offered by immediate placement and provisionalization, many of these new products and solutions are so unique that they are either patent-protected or in the patent process,” Geiselhöringer said.

From the President
WORKFLOW ENHANCEMENT

At Nobel Biocare, our innovation efforts are based on clinical requirements, patient needs, and scientific research. These have led us to superior products and solutions, as well as efficient treatment workflows that reduce treatment time—in other words, shorter time to teeth.

With our leading integrated workflow, treatment steps that were previously considered mandatory have been made faster, combined or even removed entirely. Our new technologies continue to enhance diagnostics and treatment planning. Digital integration improves collaboration among treatment partners and helps bring the laboratory into the treatment process as early as the planning phase, meaning prosthetic considerations are taken into account right from the start.

We are also advancing componentry in order to improve clinical workflows. The most important new addition to our portfolio in this regard is the On1 concept. This new approach to the restorative process ingeniously bridges the gap between the surgical and prosthetic workflows with a modular solution. The On1 Base connects to the implant at time of surgery and is then left in place throughout the healing process, the prosthetic work and the lifetime of the restoration. This leaves the tissue undisturbed for optimized healing, but unlike with tissue-level implants, there is no compromise on restorative flexibility.

In addition, the workflow for the components has been refined with a view to dramatically reducing treatment time. As the On1 healing cap supports an intra-oral scanning approach, conventional impression-taking procedures for delivery of the final crown can be eliminated. This can save time and improve patient comfort. What’s more, the On1 Base offers the clinician placing the implant added peace of mind, knowing that only precision-engineered Nobel Biocare components can be used in conjunction with the implant, thus removing the risks associated with an ill-fitting third-party abutment.

Such advancements mean dental professionals can treat more patients each day, with better results. Consequently, more patients experience the improved quality of life dental implant treatment brings, and both clinicians and technicians can grow their businesses. It is such outcomes that we at Nobel Biocare strive for every single day; it is designing for life in action.

Where innovation comes to life
Nobel Biocare Global Symposium
June 23–26, 2016

More to explore!
Yesterday, the 2016 Nobel Biocare Global Symposium opened its doors to dental professionals from all over the world in the heart of New York. Held for the third time, the event promises to be the implant dentistry event of the year.

A continuous increase in demand for dental implant treatments as a result of growing consumer awareness, the ageing population, growing accessibility, as well as greater product availability and other influencing factors, has accelerated the demand and need for education in this field over the past decade.

Nobel Biocare has established its reputation as a provider of top-level education through the development and refinement of dental therapy concepts. With its global symposium in particular, the company stages a truly exceptional event by inviting dental professionals to join its high-class educational program at the legendary Waldorf Astoria in the world metropolis New York.

With more than 150 world-class speakers, and a total of over 50 master classes, and about 40 hands-on courses for dentist and dental technicians, the event promises to be an incomparable experience for everyone attending.

At the symposium opening on Thursday morning, Nobel Biocare president Hans Geiselhöringer said: “We are today continuing the journey to innovation we started in 2010 with the first global symposium. Over the past three years, we have invested in developing innovations that help dentists treat their patients better and will continue to do so. In this approach, the well-being of the patient is always our priority. We challenge ourselves every day to think about how we can be more successful in treating patients—this is the DNA of Nobel Biocare.”

Since the announcement of the symposium dates, dental professionals have eagerly registered. The event was sold out well before the registration closing. Overall, Nobel Biocare will be welcoming more than 2,000 participants over the course of the four symposium days, with about one third of the people attending from North America, one third from Europe, and a considerable number of attendees from the Asia-Pacific region as well as the Middle East and Africa.

The program of the symposium is divided into three main themes: Treatment enhancement and refinement—evidence counts; Reaching excellence in esthetics by joining the journey of digital dentistry; and Achieving clinical excellence in challenging situations. Each theme has a complete line-up of its own, from lectures and master classes to hands-on sessions.

For the first time in the history of the symposium, registrants had the opportunity to influence the symposium program by voting for various topics, formats and speakers in advance. Through a crowdsourcing model, visitors to the event website selected the topics they would like to see featured. Those that received the most votes were incorporated into the program. The chosen sessions were two case studies—one on soft-tissue management and the other on immediate loading protocols—and a keynote lecture on the true benefits of digital dentistry.

On behalf of the members of the organizing committee, scientific chairperson Dr. Peter Wöhrle welcomed attendees during the kickoff session on Thursday morning. "Many of