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Academy NEWS

A QUARTERLY MEMBER NEWSLETTER



2022 SUMMIT

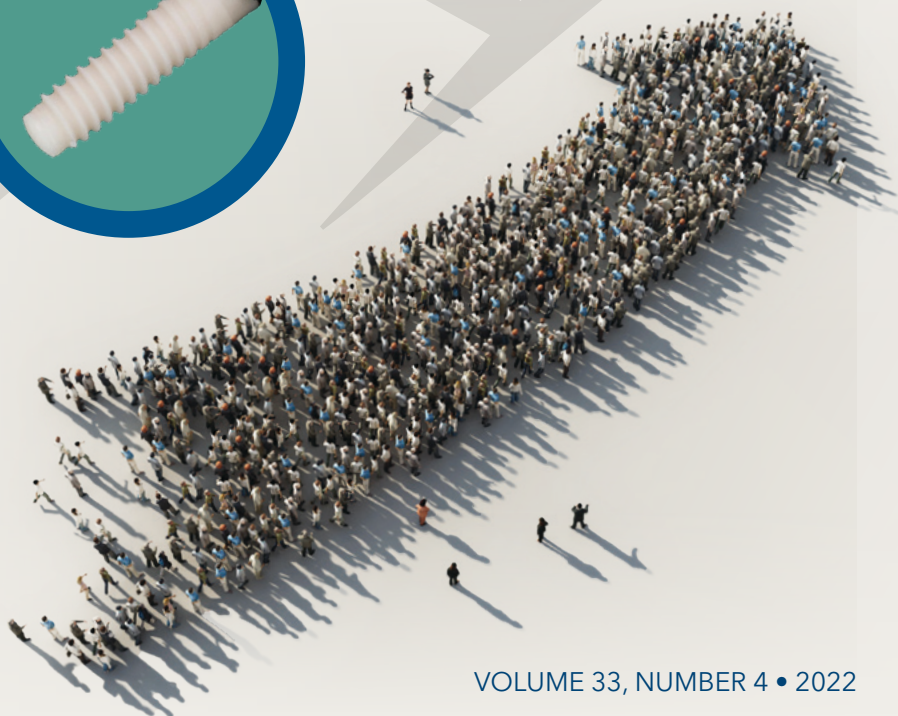
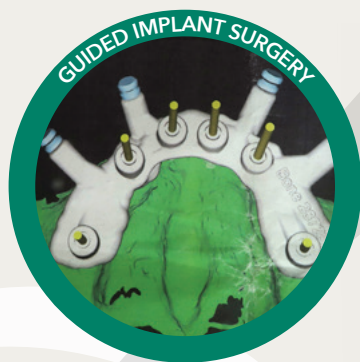


Academy of Osseointegration

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ACADEMY NEWS

Academy of Osseointegration
85 W. Algonquin Road, Suite 550
Arlington Heights, IL 60005
847.439.1919

Editor

Mehrdad Favagehi,
DDS, MS

Board Liaison

Joseph P. Fiorellini,
DMD, DMSc

Editorial Consultants

Riad Almasri, DDS
Lourdes Ann Christopher, DDS, MS
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Staff Editor

William R. Wille

President's Message

AO: Evolving practice models – What is best for you?

By Amerian D. Sones, DMD, MS



alike, enhancing the collaboration which directly affects **your** success in practice as **your** patient outcomes improve.

With new practice models evolving, what practice style/model are you best suited for? Matching personalities to practice demographics can be as helpful as matching compatible individuals, however the new practice models tout the business of numbers and the bottom-line of revenues as a priority.

While the bottom-line is important, a single remake of a restoration or implant loss due to haste and carelessness impacts the profitability of any dental practice. Early career professionals desire immediate gratification from fast internet, immediate knowledge, fast food, and quick messaging. I can assure you that dentistry is a profession of unexpected challenges and personal reward, but key elements for success are patience, perseverance, and commitment, qualities which result in long term “bottom-line” success. It takes **time** to do great dentistry for our patients.

How do you gain personal growth in a world of fast paced changing technology and progressive practice models?
Differentiate yourself as the unique person you are!

Stay progressive - read IJOMI and IJPRD and look for the upcoming AO 2022 Summit IJOMI Supplement for the results of the three implant controversies discussed from global AO member leaders in August 2022. *IJOMI* and *IJPRD* are the crown jewels of membership.

The **new AO Master and Diplomate Certificates** are now available for all clinicians to challenge the new AO Credentialing Board. Why not make it your personal best at any stage of your career, early, mid or late?

Join our web-based community, **DocMatter**, to problem solve and collaborate with other like-minded members. A

professional community, this platform complements AO's social media footprints which have expanded to provide connectivity of all members globally.

Take advantage of our online education which is implemented at the highest level. The Academy is to be congratulated on obtaining another four-year approval from the Commission on Continuing Education. As an **ADA-CERP provider**, we continue to provide the gold standard of education

Reach out to your colleagues in other lands and invite them to join our membership benefits and meet them in person at our Annual Meeting. **My travel to Zurich, Switzerland** has confirmed fertile ground for global expansion.

Emerging Leaders: 6 under 10

is a new program this year. Early career members may present on the main podium, and as we look to the next generation of leaders, please encourage an early career professional to submit a case for the competition. Winners are announced at the 2023 closing symposium.



Travel to Switzerland sharing AO news

The Academy's **2023 Annual Meeting** is not to be missed! Dr. **Jacinthe Paquette**, Scientific Chair, has organized a program to include keynote speaker, Drs. **Rickard Brånemark, Richard Lazzaro, Jill Helms, John Brunski, and Ole Jensen** to kick off an impressive opening symposium. The surgical track, restorative track, corporate forum, hands-on workshops have something for everyone.

As 2022 closes another professional chapter, we reflect on Academy accomplishments. Be proud of how this community survived the last two challenging years. A suggested **New Year's Resolution** would be to share Academy membership with your colleagues and to be mindful that two degrees of planet overheating is as detrimental as overheating the bone when placing an implant. What can you do daily to add wellness to our planet?

Wishing you, your staff/team, and families a joyous holiday season with much success, wellness, and an optimistic vision for the upcoming year. **See you all in Phoenix!**

President's Reception to showcase vibrant exhibition of Southwest visual arts

With a mission to “ignite imaginations, create connections, and serve as a vibrant destination, a brave space, for all people who wish to experience the transformative power of art,” the Phoenix Art Museum will set the stage for the Academy’s 2023 President’s Reception.

To be held Friday, March 17, 2023, the Academy’s annual President’s Reception is a two-hour special social event, complimentary with your Annual Meeting registration. Admission to Phoenix Art Museum, hors d’oeuvres, cocktails, and ground transportation are all included.

Located in Phoenix’s Central Corridor, the Phoenix Art Museum is a vibrant destination for the visual arts and considered the largest art museum in the Southwestern United States. It is home to a collection of more than 20,000 objects of various media that spans seven collection areas, including American and Western American, Latin American, Asian, European, and modern and contemporary art, as well as fashion design. The museum also presents outstanding photography exhibitions through a landmark partnership with the Center for Creative Photography at the University of Arizona in Tucson.

The highlight of this special evening will be “You Who Are Getting Obliterated in the Dancing Swarm of Fireflies, 2005” – Yayoi Kusama’s Fireflies infinity mirror room. Become one with eternity inside the museum’s mixed-media swarm of LED lights.

All guests will also have full access to the Ellman Fashion Design Gallery, Orme Lewis Gallery, and Harnett Gallery, featuring the major fashion

exhibition *MOVE: The Modern Cut of Geoffrey Beene*. Garments are drawn from the Museum’s Geoffrey Beene Archive, housed in the institution’s internationally renowned fashion-design collection, which was founded in 1966 and features more than 8,000 objects representing five centuries of fashionable dress and accessories for men, women, and children.

In addition, the Ellen and Howard C. Katz Wing for Modern Art, a four-level gallery wing, features more than 25,000 square feet of gallery space housing a growing collection of contemporary art. Guests will have the opportunity to experience a range of works from our time by some of the most prolific artists working today.

While there, be sure to also take in the surroundings of Cummings Great Hall, designed by international architects Tod Williams/Billie Tsien & Associates, one of the city’s most dramatic multi-use spaces. The Dorrance Sculpture Garden, more than an acre of the museum’s grounds, is designed to be a spectacular urban oasis and environmental gallery space for sculpture, or simply a space for mindful reflection. Lastly, the JP Morgan Chase Lobby brings the outdoors in with expansive windows overlooking the Dorrance Sculpture Garden.

Be sure to reserve your Friday evening of the Annual Meeting to attend another unique AO gala! Register for the Annual Meeting at osseo.org by January 23, 2023 to obtain the best meeting rates, hotel availabilities, reserve your spot at limited-seating sessions, and other special promotions.





Peri-implant hallucinations?

By: Philippe Khayat, MSD,
Academy News Editorial Consultant

Consensus conferences are very important. Scientific data is gathered and analyzed. Consensual conclusions are published. True is separated from false or uncertain. Guidelines can be set. Making clinical decisions based on such consensus reports is the epitome of evidence-based medicine.

In February 2021, the 6th European Association for Osseointegration (EAO) Consensus Conference took place. Sixty-nine world-renowned experts were invited, and five groups were formed. One of the questions Group 3 had to answer was: "What is the influence of implant surface characteristics on the incidence and progression of peri-implantitis?"

Basing their response on a recent systematic literature review¹, the consensus statement issued by Group 3 was: "Pre-clinical *in vivo* experiments indicate that surface characteristics of modified implants may have a significant negative impact on peri-implantitis progression, while clinical studies do not support the notion that there is a difference in peri-implantitis incidence among the various types of implant surfaces²."

In simpler words, in animal models, peri-implantitis progression may be faster if the implant surface is rougher. In humans, conversely, a rough surface is not a risk factor. We can continue using moderately rough implants as manufactured by most implant companies. These modified surfaces, introduced in 2000 to replace the smoother machined surfaces, are not responsible for the well-documented³⁻¹¹ high prevalence of peri-implantitis.

End of controversy. Science prevails. Long-time observations, clinical experiences, statements made by world-renowned personalities such as Prof. **Daniel Buser** on the dangers of exposed micro-rough surfaces¹², or Prof. **Dennis P. Tarnow** on the increased incidence of peri-implantitis with textured rougher surfaces¹³, fall back in the category in which they belong: anecdotal information.

Trained both in France and the U.S., I have been practicing implant dentistry since 1986. Thirty-six

years of clinical experience, research and teaching. Like most long-time practitioners, I began by using machined implants, and, after 2000, moderately rough implants. A rather long experience with both surfaces. Like Prof. Tarnow, I have remarked a much higher incidence of peri-implantitis with modified surfaces compared to machined surfaces. But this observation is clearly contradicted by the conclusions of the 6th EAO Consensus Conference.

How can we explain this? Are we seeing things that are not actually occurring? Are we experiencing situations that are not real? **Are we having peri-implant hallucinations?**

Of course, as with any review of clinical studies, the one proposed by the 6th Consensus Conference is not exempt from limitations.

As mentioned earlier, peri-implantitis prevalence is high. Yet, a lot of included studies report no or almost no peri-implant disease¹⁴⁻²¹. This is not difficult to explain. Patients are enrolled in very strict maintenance programs, up to three recalls per year²² and, in most studies, failing to comply means exclusion from the project. Does this reflect reality? Is studying peri-implantitis in such highly compliant populations the best methodological approach? Imagine we were to compare the risk for lung cancer in two different populations of smokers (for example: males versus females), but inclusion criteria would be that they never smoked more than two cigarettes a day.

Other important details could be discussed. Here are two examples.

In several studies^{15,18,23-25}, the modified surface is TiO-Blast. This surface has a 1.1 (Sa) roughness. It is one of the smoothest moderately rough surfaces. In another systematic review exploring the association between surface roughness and peri-implantitis, the authors concluded: Peri-implantitis appears for Sa values greater than 1.2²⁶. Knowing this, how can one expect to observe different clinical outcomes? Is it relevant to include such studies knowing that TiO-Blast has been abandoned and that most other modified surfaces are rougher (higher Sa)?

Continues on page 7

Peri-implant hallucinations? (continued from page 6)

One study²⁷ mentions that: "In the IMZ group and in the ITI group, more implants were 'at risk' with 3mm or more marginal bone loss (for all follow-up periods) than in the Brånemark group." The Brånemark group represented the machined surface group. At the 10-year recall, the number of implants with bone loss > 3 mm was: 9 IMZ, 12 ITI, and 0 Brånemark. A statistically significant difference. Yet, survival rates were good for all groups. Is it enough to state "implants types performed similarly!" (fig. 1)?

Rather than develop a thorough critical analysis, which may not be the place in these columns, let us instead observe a somewhat puzzling situation.

A simple PubMed search on the term "peri-implantitis" brings up 3,521 studies. Their distribution per year provides interesting data. In 2002, 20 years after osseointegration was first introduced in North America, **30 studies** were published. The numbers continue to stay relatively low until 2009 (**50 studies**), 27 years after the introduction of osseointegrated machined surface implants in North America.

Since then, the number has been increasing exponentially until, in the year 2021 alone, **509 studies** were published!

It is also interesting to review scientific programs of major institutions like the Academy of Osseointegration. They reflect our concerns at the time. Thanks to *Academy News* Editor Dr. **Mehrdad Favagehi** and Staff Editor Mr. William Wille, I was able to access and review the AO Annual

Meeting programs from 2009 to 2022. It is only in 2014, 32 years after the first introduction of osseointegrated machined surface implants in North America, that, in a plenary session, three lectures focused on "crestal bone loss," "continuous/severe bone loss" and "peri-implantitis."* They were addressed by Profs. AO Fellow **Hom-Lay Wang**, **Torsten Jemt** and Prof. **Stefan Renvert**, respectively. If peri-implantitis had been a concern with machined surface implants, would the first lectures on peri-implant diseases be proposed such a long time after their first introduction?

If peri-implantitis in humans was not influenced by implant surface characteristics, if peri-implantitis incidence was the same for machined and modified surface implants, the disease should have been observed, studied, and discussed much earlier. This is not the case. What if peri-implantitis was a rather new disease? What if the disease was influenced by the only parameter that really changed after 2000: the surface?

Instead of helping us, could the conclusions of Group 3 make us lose precious time before steps are taken to truly improve our implant surfaces in relation to peri-implantitis? In the meantime, how many patients will suffer from this disease? How many implants will be lost?

References in this article are available via scanning the QR code.

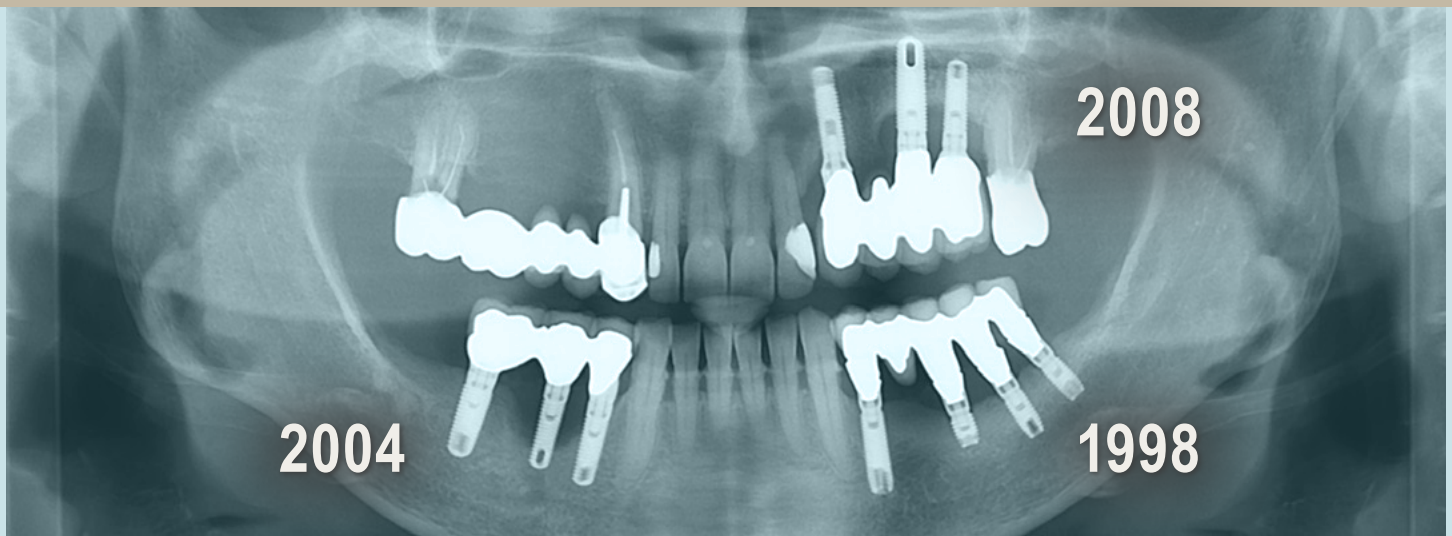


Figure 1: This patient was very compliant until she moved and stopped coming back for maintenance. Seven years later, she presents with plaque, calculus and...peri-implantitis. Two out of six modified surface implants are "at risk" and one will be removed. The four machined surface implants (lower left quadrant) placed 24 years ago are perfectly fine. Could these early healthy implants act as a reminder that there was a time when peri-implantitis was almost absent from our experience? If these early implants were not present, how many clinicians would take this situation for granted, explain peri-implant disease by the lack of proper hygiene and maintenance, and be satisfied with these modified surface implants with 14 and 18 years of function? In this case, survival rates are the same for machined and modified surface implants, but can we say "implant types performed similarly"?

* In 2011, three years earlier, a session on peri-implantitis was proposed by Prof. **Georgios E. Romanos** in a limited attendance table clinic (30 participants).

OPPORTUNITY KNOCKS BUT ONCE...

So? Everyone's heard that expression, but what does that have to do with the Academy of Osseointegration (AO)?

By AO Fellow Edward B. Sevetz, Jr., AO and OF past president; and Academy News Guest Contributor



Prof. Rickard Brånemark

The Academy would not exist if it weren't for the research of Swedish orthopedic surgeon, AO Honorary Fellow **Per-Ingvar Brånemark**, MD, PhD, which led to his discovery of osseointegration, a term he "invented." In modern terms, that was a "disruptive" event in the fields of dentistry and orthopedics. It marked a turning point which forever enhanced both of those fields.

Refer back to paragraph #1, above. So?

In the mid-1980's a New York study club founded what was to grow into the AO of today: a global scientific and educational organization dealing with human health improvement using osseointegration. In the later 1980's, P-I Brånemark made one of a few rare appearances at an Annual Meeting and gave landmark presentations about the science behind the application of osseointegration. His last appearance at an Academy Annual Meeting was not in person, but via internet link from Sweden, early in this millennium. He passed away in December of 2014. Each and every person who experienced P-I's presentations, in person, will never forget them. Ever.

So, did members who more recently joined AO miss the "knock of opportunity" of experiencing Brånemark speaking in person?

Yes, and no.

The opportunity referred to in the title of this article is still valid. **How can you avail yourself of this unique opportunity?** By attending the Academy's 2023 Annual Meeting in Phoenix, AZ.

During the Opening Symposium on Thursday, March 16, 2023, the unique opportunity of being present to experience Prof. **Rickard Brånemark's** presentation on the continually-evolving excellence of osseointegration, will be yours! He is the son of P-I and he has fulfilled the

dreams of his family's legacy of utilizing osseointegration to restore lost body function. Not merely as an anchor in bone, but transcending to become integrated with muscle and nerve, controlled by conscious thought. He will present near-miraculous restoration of human functional capabilities.

In the earliest days, back in the last millennium, P-I Brånemark had to utilize Nobel Industries to fabricate the components needed for his osseointegrated applications. Prof. Rickard Brånemark has founded his own company, Integrum AB, and integrated it with top universities, such as Harvard, MIT, and Stanford, to form a combination of ongoing research and education to disseminate the wave of the ever-advancing field of dynamic osseointegration.

The opportunity referred to in the title is indeed rare. To hear from the son, who worked beside his father for years, and brought to fruition the envisioned dreams and aspirations of their combined efforts.

If you wisely choose to avail yourself of this one-time "knock of opportunity" by being in Phoenix at the Academy's March 2023 Annual Meeting, you, too, will hear the voice of the Brånemark family, and will never forget experiencing it in person!

Register for the Annual Meeting at osseo.org by January 23, 2023 to obtain the best meeting rates, hotel availabilities, reserve your spot at limited-seating sessions, and other special promotions.



Prof. Per-Ingvar Brånemark

The reliability of intra-oral radiographs for analyzing bone levels around dental implants

By Chandur PK Wadhwani, MSD; Paul S. Rosen, DMD, MS; Todd R. Schoenbaum, DDS, MS; Mitra Sadrameli, DMD, MS; and Edward Dwayne Karateew, DDS Academy News Guest Contributors

Intra-oral radiographs have been used to determine the success of dental implant therapy from the very beginning. They provide a non-invasive inexpensive, readily available and commonly used dental method for evaluating mineralized tissue. Initial success criteria from Albrektsson and others used the standard annual bone loss after the first year of less than 0.2 mm as a guide for implant success¹.

The literature is rife with measurements of marginal bone changes over time that vary from zero to fractions of a millimeter. What is the level of certainty that these measurements are reliable?

Radiographs are prone to multiple technique errors, which has led some investigators to recognize that a realistic value for being able to detect real changes in bone levels around implants is 0.5 mm² but even this requires an almost perfect radiographic technique.

Studies using radiography should be scrutinized for their ability to achieve high quality, standardized serial radiographs.

As clinicians, we must be able to interpret radiographs carefully. Keeping in mind the following may be helpful:

- 1 Standardization: Ideally these should be orthogonal images. One way to determine if serial radiographs are comparable is to look at other radiographic fiducial sites. There should be no changes in image shapes related to: Restorations or anatomical sites such as sinus, nerve channels, maxillary midline bone suture etc. (unless altered during treatment)³. Cropping images reduce our ability to determine if the radiographs are well standardized and should be discouraged.
- 2 Image contrast, brightness and sharpness should be standardized across all images- if the implant material looks more opaque, bone density may not be equivalent across the radiographic images. This can lead to misinterpretation of bone levels as bone shows up at differing sites dependent upon pixel value.
- 3 Vertical angulation changes of 20 degrees or more can result in the "appearance" of bone changes up to 4.8mm⁴.
- 4 Horizontal tube shifts between images can superimpose bone levels due to parallax producing error up to 1.5mm. This superimposition is also affected by curvature of the maxilla and mandible^{2,5} (Fig. 1).
- 5 Bone levels around Implants placed sub-crestal are more difficult to interpret as super-imposition or overlap of buccal and palatal bone gives the appearance of bone growth over the surface of the implant⁵.

- 6 Magnification and penumbra^{2,6} effects due to the distance of collimator to implant produces errors due to non-sharp imaging, resulting in imprecise measurement.
- 7 Implant thread shape cannot be relied upon to show standardization⁶.
- 8 Implant shape and bucco-lingual angulation relative to the sensor and x-ray beam can also produce inaccuracies².
- 9 Inter and intra-observer measurements on radiographs are known to have high levels of variability. Studies have shown that in 25% of cases, there is disagreement as to where the bone level exists amongst trained dentists of various specialties and experience. Interesting, even if the same examiner is presented with the same radiograph a few weeks later, 25% did not agree with their first assessment. Females are more consistent with their abilities to read radiographs. This variability in humans assessing imaging has led to the ongoing development of machine learning and reading devices to assist with this^{7,8}.

What should be required of any study is not only representative images that allow the reader to discern the quality of the research, but also an estimation of the reading error present. If for example, it is considered that radiographs have a limitation in reading of 0.5 mm, then any data outside of this error can be considered, whereas data within this error may just be a flaw in human judgement or "noise"⁹.

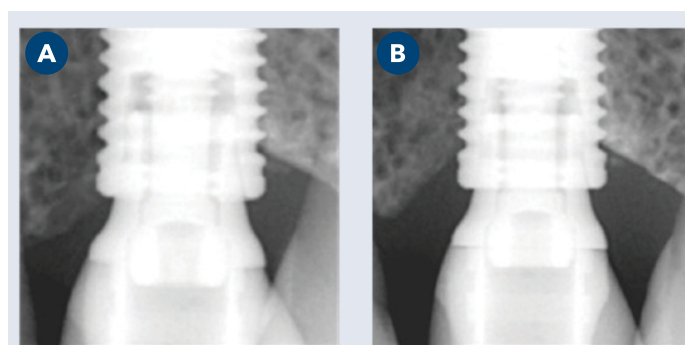


Fig. 1(A,B): Two seemingly excellent radiographs of the same site were made within 1 minute of each other. They demonstrate the effect of horizontal collimator shift, resulting in a parallax effect (A) where bone appears to be growing over the implant shoulder.

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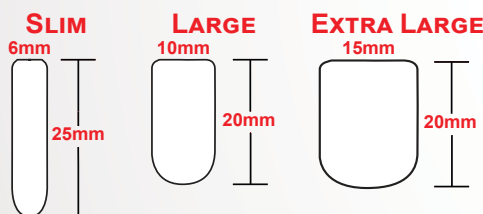
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1. Spivak, J Biomed. Mater Research, 1990; 2. Ricci, J Oral Maxillofacial Surgery, 1992; 3. Valen, J Oral Implantology, 2002.

Clinical Case Example

Clinical images courtesy of German Murias DDS, ABOI/ID

Tooth #15, set to be extracted.



Two Slim OsteoGen® Plugs are in place. Suture over top of socket to contain Plug. Do not suture through Plug. No membrane is required.

Remove the entire pathologic periodontal ligament and flush socket twice. Use #6 carbide bur, make holes through the Lamina Dura to trabecular bone and establish Regional Acceleratory Phenomenon.



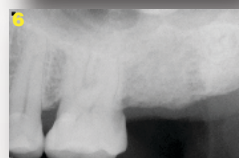
Insert Large or Slim sized OsteoGen® Bone Grafting Plugs and allow blood to absorb.



OsteoGen® is a low density bone graft and the OsteoGen® Plugs will show radiolucent on the day of placement.



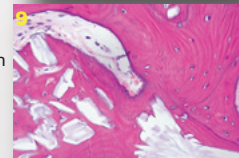
As the OsteoGen® crystals are resorbed and replaced by host bone, the site will become radiopaque.



The collagen promotes keratinized soft tissue coverage while the OsteoGen® crystals resorb to form solid bone. In this image, a core sample was retrieved.



Implant is placed. Note the histology showing mature osteocytes in lamellar bone formation. Some of the larger OsteoGen® crystals and clusters are slowly resorbing. Bioactivity is demonstrated by the high bone to crystal contact, absent of any fibrous tissue encapsulation.



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Implant failure: A label too often used?

By AO Fellow and past President, Jay P. Malmquist, DMD; Academy News Guest Contributor

In 1965, the first osseointegrated implant was placed in a living human jaw. The subsequent success validated the biological concept that titanium created no immunologic response. This single procedure changed the course of dental reconstruction forever.

Some years later, this entire concept was brought to North America in the now famous **Toronto Symposium**. Today, it is estimated that more than 2.5 million people in the U.S. receive dental implants each year.

In 1986, a classic article was published by Drs. **Tomas Albrektsson** and AO Honorary Fellow **George A. Zarb**¹ defining the criteria for the success implant fixtures. This article became the standard reference defining implant fixture success; yet there still is an existing problem with the definition of “what is an implant failure.”

If we look at the many articles defining implant “failure,” we see lists of reasons for unsuccessful outcomes evolving into compromised results. While the loss of an implant is a true failure; what about the treated implant that continues to function for the patient? The treated marginal bone loss (MBL) patient does not represent a true or complete failure. So, the question is? What is in the label? Maybe a failure is not a failure. Maybe the issue is in the label or perception. A good example is MBL, marginal bone loss versus MBL, marginal bone level. Where did we start, what are our parameters, and what do they mean?

If we look to our colleagues in orthopedics, we will see a different nomenclature for *Orthopedic Complications*. The orthopedic surgeons provide total joints (hips, knees, shoulders) and yet when one needs a repeat surgery it is referred to as “Revision Surgery” and not a complication surgery or implant failure. They often refer to their failures as a reoperation or revision. When they replace a failed joint, it is referred to as an *exchange* of a hip or knee replacement.

Many of our dental implant complications are treated successfully with “revision” surgery. The entire concept of treatment of peri-implant disease is nothing more than revision surgery or revision care. This is certainly a better way to address our patients and their understanding of their problem. “*Your implant needs some revision care or surgery to address the changes.*”

So, the next time you have an implant that needs additional care think of our medical colleagues and suggest to the

patient that their questionable implant prognosis may need revision care and not that it is failing. There is sometimes a lot in a label and the message it sends to the patient, the referral source and to the insurance company. Think of the impact of labels and the synonyms regarding failure in the care of your patients.

Can we do better with our communication to patients and each other? I think so.

References

1. Albrektsson T, Zarb G, Worthington P, Eriksson AR. The long-term efficacy of current used dental implants: a review and proposed criteria of success. *Int J Oral Maxillofac Implants*. 1986; 1:11-25.



Dr. Jay P. Malmquist

Academy looks forward to unveiling final 2022 Summit results

The 2022 Academy of Osseointegration (AO) Summit took place on a beautiful August weekend in the Chicago suburb of Oak Brook Hills, IL. Summit Directors, Drs. **Clark M. Stanford** and **Joerg Neugebauer** and participants started the planning and the preparations a year earlier through correspondence and numerous virtual meetings. Their work will continue for months to come until the final results are prepared for presentation at the Academy's 2023 Annual Meeting, March 16 - 18, in Phoenix, AZ.

The purview of the 2022 AO Summit is to examine the best scientific evidence about three important areas in implant dentistry:

1. Guided Implant Surgery
2. Ceramic implants
3. Implant Connections

Three scientific expert panels were formed to review the scientific evidence through meta-analysis of published randomized clinical trials about each topic. The review process included group and plenary discussions and debates.

Summit participants included leaders in implant dentistry, researchers, academicians, physician surgeons, general dentists, and specialists in the fields of oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics,

periodontics, and prosthodontics. Observers representing leaders from implant industry, dental publishing and professional dental organizations were also given the opportunity to participate in plenary discussions.

The main sponsor was the Osseointegration Foundation. However, financial support from corporations allowed for cost saving. Corporate or other guests from dental organizations were available to answer questions during plenary discussions but were excluded from attending the three expert panel proceedings.

A comprehensive review of available scientific data about each topic was compiled by group leaders with the help of graduate students. Meta analysis of randomized clinical trials was performed by group leaders. Review of the findings and discussions started within each sub-group in separate gatherings before the plenary debate and discussions involving the whole group.

Plenary presentations included a thought-provoking presentation by keynote speaker, Prof. **Lutz Fugener** of Hof University of Applied Sciences from Bavaria, Germany about engineering and industrial design. Other plenary speakers included **Scott Danzis** and **Christina Kuhn** from the Medical Industry Group of Covington & Burlington, LLP to discuss legal considerations involving medical devices. **Andrew I. Steen**, a former assistant director at the FDA who happened to be a former dental laboratory technician, provided insight about government and regulatory affairs.

The findings of the 2022 Summit will be presented at the Academy's 2023 Annual Meeting in Phoenix, AZ and concurrently published in a special issue of the *International Journal of Maxillofacial Implants (IJOMI)*.



Phoenix: Something for everyone

By Kevin P. Smith, MA, MBA; AO Executive Director

For history buffs, you will be intrigued with the Phoenix area's rich past.

The earliest habitants were the Hohokam people who occupied the Phoenix area for 2,000 years. Here, they created roughly 135 miles of irrigation canals, making the desert land arable, but the extremely hot summer temperatures and years of draught forced these early settlers out of the area.

More recent history begins with Jack Swilling who discovered the eroded mounds of dirt that indicated previous canals dug by native peoples long since they left the area. A Confederate veteran of the Civil War and prospector who located in the nearby mining town of Wickenburg, and saw the potential for farming, Swilling is responsible for digging a large canal that drew in river water, and erected several crop fields in a location that is now within the eastern portion of central Phoenix near its airport. Soon settlers, appreciating the area's fertile soil and lack of frost, located to the valley. Lord Darrell Duppa, an original settler, suggested the name "Phoenix", as it described a city born from the ruins of a former civilization.

Ulysses S. Grant issued a land patent for the site of Phoenix on April 10, 1874. At that time Phoenix only had a telegraph office, 16 saloons, and four dance halls. Six years later, Phoenix had a population of 2,453 and in 1912, Arizona became the nation's 48th state. Today, Phoenix is the fifth most populous city in the United States, just surpassing Philadelphia.

AO registrants will not have any problems flying into Phoenix. The Sky Harbor Airport, serving the Greater Phoenix area, serves about 40 million passengers a year, ranking it among the nation's 10 busiest airports and within a 15-minute commute to AO's three meeting hotels and the Phoenix Convention Center.

You may want to stay and bring the family and take advantage of all that the Phoenix area has to offer. Phoenix boasts of one of the nation's major golf destinations offering over 200 golf courses, the Phoenix area's most major attraction. Phoenix is also central to popular sites around the state of Arizona, such as the Grand Canyon,

the Painted Desert, the Petrified Forest, Tombstone, and Sedona. Also, the valley has many museums, including the Phoenix Art Museum where we have the Presidents Reception reserved for Friday evening. The museum houses an outstanding collection of more than 18,000 works of American, European, Latin American, Western American, modern and contemporary art.

The Phoenix area is home to many professional sports teams including: the Arizona Diamondbacks, Arizona Cardinals, Arizona Coyotes, and Phoenix Suns. The 2023 NFL Super Bowl LVI will be played at State Farm Stadium in nearby suburban Glendale to end the 2022/23 season. There are many opportunities for AO's sports fans that take place during the Annual Meeting.

We're fortunate to have Arizona's Cactus League in full operation during our meeting week. Enjoy pre-season major league baseball and attend your favorite of over 15 Major League teams who train in Arizona. All Cactus League teams play within the Phoenix metropolitan area as the Cactus League Season begins Saturday, February 25 and runs through March 28.

The Arizona Coyotes of the National Hockey League moved to the area in 1996, formerly known as the Winnipeg Jets. They will be in town during the Annual Meeting, so order your tickets for Thursday, March 16 against Vancouver and/or the Chicago Blackhawks game, Saturday, March 18.

The Phoenix Suns, the only professional team to use the city's name, will be in town during the week of the Annual Meeting. They will be hosting the Milwaukee Bucks on Tuesday, March 14 and the Orlando Magic, Thursday, March 16.

Bring the whole family and enjoy all the things the Phoenix area has to offer. The average daily temperatures range in the upper 70's during the day and cools off to the mid 50's in the evening. The weather will be perfect!

We're looking forward to seeing you in beautiful warm and sunny "Valley of the Sun."



Photo Credits: Visit Phoenix

Five things to know about occlusion of Implant-Supported Fixed Restorations (ISFR)

By Academy News Guest Contributors *Andrea Berzaghi DDS, MSc, PhD; Manuel Nanni MD, DDS; Ann Decker DDS, PhD; Hom-Lay Wang DDS, MSD, PhD; Tiziano Testori MD, DDS, MSc, FICD; and Sergio Bortolini DDS.*

1 Differences between teeth and implants

Natural teeth are protected with periodontal ligament (PDL), which provides functional shock absorption, and mechanoreceptor innervation. However, osseointegrated implants are ankylosed directly to surrounding bone without the bio-physiologic protection of the PDL.

The mechanisms of load perception and modulation are different between teeth and implants resulting in distinctive stress distribution signatures for teeth and implants, with decreased capability of impact absorption and resilience for implants. Furthermore, positional changes of teeth over the course of a patient's lifetime can create undesired occlusal patterns¹.

2 Osseoperception

There are distinct differences in proprioception between dental implants and natural dentition. "Osseoperception" or the perception of occlusal contact with implants likely improves overtime due to plasticity in the somatosensory cortex; however, it is not clear whether the level of implant perception returns completely to the levels of natural teeth over time. Therefore, to avoid occlusal overload on implants periodic occlusal evaluation and adjustments are needed^{2,3}.

3 Occlusal overload on implants

Occlusal overloading is the application of force to an implant, through either normal function or parafunctional habits, which leads to structural or biological damage. Overloading factors that may negatively influence implant longevity and bone levels around implants include bruxism, large cantilevers, parafunctions, improper occlusal designs, and premature contacts^{2,4,5}.

4 Occlusal wear of Implant-Supported Fixed Restorations (ISFR) material

In mixed implant-dental occlusion, differences between teeth and implants, and different wear patterns can increasingly leave implants to carry the entire occlusal load of a dentition. Dental implants exhibit extremely limited mobility (3-5 μm) compared to natural dentition counterparts which can be intruded (25-50 μm) in response to occlusal forces¹. Therefore, wear property of restorative materials over time must be taken into consideration when selecting the material for implant-supported fixed prostheses (ISFR)⁶.

The initial occlusal material used for ISFR was acrylic resin with a gold alloy framework. This prosthetic scheme provided flexibility and malleability for shock-absorption by the ISFR framework to dampen force intensity, decrease overload forces, and reduce probability for implant failures. Over time, concerns such as aesthetics and stability elevated other materials as the choice in everyday clinical practice. Notably, porcelain fused to metal became the material of choice due to its esthetics and wear-resistance. However, as porcelain was used in longer-term applications, chipping of the veneering material quickly appeared as the most frequently reported complication.

Ceramic-veneered zirconia frameworks have been introduced more recently, showing high biocompatibility, low bacterial surface adhesion, high flexural strength, toughness, and esthetic properties. To minimize porcelain veneer complications, in recent years, monolithic framework materials were developed⁷. In particular, 4Y-TZP and multi-translucent monolithic zirconia, incorporating 3Y, 4Y and 5Y-TZP with varying translucency levels, appear to be promising. Clinical studies are needed to confirm the long-term benefits of then newer restorative materials⁸.

5 Periodic occlusal evaluation and adjustments for ISFPDs

Occlusal adjustments can help redistribute occlusal loads to compensate for different stress distribution patterns between teeth, implants, and various restorative materials¹.

Recommendations for mixed implant-dental occlusion include mutually protected occlusion with anterior guidance, evenly distributed contacts, wide freedom in centric relation, narrowing the occlusal table, decreasing cuspal inclines, reducing cantilevers, increasing the number of implants, increasing contact points, and monitoring for parafunctional habits. Some clinicians advocate leaving a small (30-50 μm) clearance gap between implant restorations and opposing teeth to compensate for the different biomechanics between teeth and implant restorations to preemptively avoid overloading of the implant. This approach allows implant restorations to avoid occlusion altogether during light or moderate intercuspation while they share occlusal load with dental counterparts in high-intensity occlusal function^{4,9}.

Continues on page 15

Clinical case of implant restoration of #13 (maxillary left premolar).



Fig.1. A clearance of 50 µm between implant and opposing teeth allows occlusal forces to intrude teeth by 50 µm. The implant restoration (#13) is not subjected to occlusal load during light or moderate dental contact.



Fig.2. During high-intensity contacts, using occlusion paper 40 µm, we can observe that the implant and teeth contact simultaneously, but implant shows light contact as expected.



Clinical recommendations for ISFR occlusion

- Loading should be as axial as possible
- Reduced inclination of cusps
- Shallow occlusal anatomy
- Wide freedom (1-1.5 mm) for maximum intercuspation and centric relation
- Narrowed occlusal table
- Not extended cantilevers (<15mm in mandible and <10 mm in maxilla)
- In cases of severe bone resorption, cross-bite occlusion to reduce the buccal cantilever and improve the axial loading
- Clearance of 40 µm between implants and opposing teeth (single-tooth implant restoration and implant-supported fixed partial dentures ISFPDs Kennedy Class II, III, IV)
- Select the restorative material on the basis of wear property
- Re-evaluation and periodic occlusal adjustments to prevent the potential overloading of the implants because of positional changes and wears.

Andrea Berzaghi DDS, MSc, PhD: Department of Surgery, Medicine, Dentistry and Morphological Sciences with Interest in Transplant, Oncology and Regenerative Medicine, University of Modena and Reggio Emilia (UNIMORE), Modena, Italy.

Manuel Nanni MD, DDS: Department of Surgery, Medicine, Dentistry and Morphological Sciences with Interest in Transplant, Oncology and Regenerative Medicine, University of Modena and Reggio Emilia (UNIMORE), Modena, Italy.

Ann Decker DDS, PhD: Department of Periodontics and Oral Medicine, School of Dentistry, University of Michigan, Ann Arbor, MI.

Hom-Lay Wang DDS, MSD, PhD: Department of Periodontics and Oral Medicine, School of Dentistry, University of Michigan, Ann Arbor, MI.

Tiziano Testori MD, DDS, MSc, FICD: Department of Periodontics and Oral Medicine, School of Dentistry, University of Michigan, Ann Arbor, MI, USA; Department of Oral Medicine, Infection and Immunity Harvard University, School of Dental Medicine, Boston, MA.

Sergio Bortolini DDS: Department of Surgery, Medicine, Dentistry and Morphological Sciences with Interest in Transplant, Oncology and Regenerative Medicine, University of Modena and Reggio Emilia (UNIMORE), Modena, Italy.

References

1. Kim Y, Oh T-J, Misch CE, et al: Occlusal considerations in implant therapy: clinical guidelines with biomechanical rationale. Clin Oral Impl Res 2005;16:26-35.
2. Goldstein G, Goodacre C, Taylor T. Occlusal Schemes for Implant Restorations: Best Evidence Consensus Statement. J Prosthodont. 2021 Apr;30(S1):84-90.
3. Mishra SK, Chowdhary R, Chrcanovic BR, et al: Osseoperception in dental implants: a systematic review. J Prosthodont 2016; 25:185-195.
4. Sheridan RA, Decker AM, Plonka AB, Wang HL. The Role of Occlusion in Implant Therapy: A Comprehensive Updated Review. Implant Dent. 2016 Dec;25(6):829-838.
5. Sadowsky SJ: Occlusal overload with dental implants: a review. Int J Implant Dent 2019;5:29.
6. Mörmann WH, Stawarczyk B, Ender A, Sener B, Attin T, Mehl A. Wear characteristics of current aesthetic dental restorative CAD/CAM materials: two-body wear, gloss retention, roughness and Martens hardness. J Mech Behav Biomed Mater. 2013 Apr; 20:113-25.
7. Bagegni A, Abou-Ayash S, Rucker G, Algarny A, Att W. The influence of prosthetic material on implant and prosthetic survival of implant-supported fixed complete dentures: a systematic review and meta-analysis. J Prosthodont Res. 2019;63(3):251-265.
8. Chrcanovic BR, Kisch J, Larsson C. Retrospective clinical evaluation of 2- to 6-unit implant-supported fixed partial dentures: Mean follow-up of 9 years. Clin Implant Dent Relat Res. 2020 Apr;22(2):201-212.
9. Rilo B, da Silva JL, Mora MJ, Santana U. Guidelines for occlusion strategy in implant-borne prostheses. A review. Int Dent J. 2008;58:139-145.

Saturday student webinar series continues to expand

As a result of the success of its initial offerings, the Academy is continuing its live webinar series geared toward the student/faculty audience. Complementary to all Academy members, students, faculty members and non-members, the dates and topics of the current series (all at 11:00 am EST) include:

November 12, 2022

Anterior Implant Esthetics

AO Fellow **Joseph Y. K. Kan, DDS, MS**

"Esthetics immediate tooth replacement, a controversial, yet intriguing treatment concept has evolved over time, numerous debates had been dedicated to its validity. Now, 25 years later, questions remain. Join me for this presentation, which will focus on pros and cons of esthetics immediate tooth replacement," according to Dr. Kan.

December 3, 2022

State of the Art Topics and Techniques in Implant Retained Overdentures

AO Fellow **Robert C. Vogel, DDS**

"We don't always get a lot of information on overdentures, but it is the greatest benefit for edentulous and soon to be and edentulous patients in terms of service and improving overall quality of life. We'll talk about treatment planning, execution, delivery, fees and pricing. Hope to see you all there and guarantee you will go away with something you can use the next day," stated Dr. Vogel.

February 4, 2023

Updated 10 Keys Checklist for Immediate Implant Placement at Maxillary Incisor Sites

AO Fellow **Robert A. Levine, DDS**

"I welcome you to attend my webinar in which we will concentrate on the maxillary incisor tooth, where we see the majority of placements and failures. You will take away interesting tips diagnostic keys surgical keys and prosthetic keys, that if used in order produce a nice aesthetic result. I look forward to seeing you," Dr. Levine informed.

February 25, 2023

Quikbar-simplified Technology for the Full Arch Implant Case

AO Fellow **Lambert J. Stumpel, DDS, MS**

Dr. Stumpel informs, "I will be presenting an exciting new concept, a prefabricated modular system that will allow the fabrication of a metal substructure for All on Four prosthesis. It takes only 20-to-30 minutes with no special equipment and allows you to make a same day prosthesis. Looking forward to having you participate on February 25!"

"As an Academy, our relationships with students and university programs are crucial to reaching the next generation of implant dentists across the United States and our Saturday morning webinar series is an important part of that effort," said Academy President, Global University Task Force Chair, AO Fellow **Amerian D. Sones, DMD, MS**.

Each webinar will start with an enrichment panelist discussion, consisting of professionals who offer important and relevant information to new graduates. Panelists will include:

Amerian D. Sones, DMD, MS - Moderator

Michael R. Ragan, DMD, JD, LLM - Attorney

Gino DeSimone - Practice Management Consultant

Robert Edwards - Dental CPA

Vincent Lizzio, DDS - Great Expressions (DSO)

During the first segment of each webinar, the guest panelists will present their own unique "pearl of wisdom" take-away message focused on relevant professional news and advice for young dentists.

All Academy webinars are available for registration and replay at osseo.org. Videos may be reviewed and available for CE credit up to 90 days after the original broadcast via the Academy's online library at osseo.org.



The evolution of the digital workflow – How far have we come?

By AO Fellow Scott D. Ganz, DMD, Academy News Guest Contributor

The Academy of Osseointegration's (AO) 2022 Annual Meeting was held in San Diego, California, marking a personal special anniversary.

Thirty years prior, I provided a poster presentation at the Academy's Annual Meeting in the same city of San Diego. The poster represented patient education images that were created 100% on the computer using a program that still exists today, CorelDraw. These digital images illustrated non-threatening concepts to explain dental implant procedures for patients. These images eventually became the foundation for my first book, "An Illustrated Guide to Understanding Dental Implants" which was released in the fall of 1993 (Fig. 1).

In 1995, I was honored to be invited to present on the Academy's main podium on the use of 3-D imaging and interactive treatment planning software applications for dental implants. This was followed by a presentation at the first joint meeting of the European Association for Osseointegration (EAO) and AO in 1996 in Amsterdam, and again in 1997 at the Annual Meeting, and many more since. My enthusiasm for advances in technology and naivety led me to believe that in two-to-three years, everyone would utilize 3-D imaging and interactive software applications to plan and execute dental implant and related procedures.

While technology has continued to evolve for the dental industry, applications for guided dental implantology was not adopted as I had predicted. There are presently a vast number of dental implants placed in a "free-hand" manner with many clinicians using only two-dimensional periapical and panoramic radiography despite the lack of information regarding the true underlying bony anatomy, density, and proximity to vital structures, or the inherent distortion factors these modalities exhibit.

The incorporation of 3-D imaging modalities through computed tomography (CT) provided an undistorted view of an individual patient's true bony anatomy through multiple large static films. It was not until the introduction of advanced planning software that we could interact with the images to visualize and accurately assimilate the digital dataset. The use of medical grade CT was limited to hospitals or large imaging centers, at a high-cost factor, which restricted mainstream utilization even for dental schools. Fortunately approximately 22 years ago, smaller, more cost-effective devices were introduced, providing a huge catalyst for our industry and the specialty of oral and maxillofacial radiology. Cone Beam Computed Tomography (CBCT) delivered an undistorted appreciation of each patient's anatomical structures enhancing diagnosis and treatment planning for dental implants and related modalities. However, there was still a missing link.

The concept of "restoratively-driven" planning can be fully accomplished if the treatment outcome can be determined in advance and transferred from the computer to the surgical operatory with static, navigational, or robotic guidance. Today's enhanced digital workflow incorporating intra-oral and facial scanning, photogrammetry and jaw-tracking devices, aids in the initial diagnosis to determine treatment options and definitive restorative outcomes with CAD software applications. 3-D software planning simulation for an "All-on-X" implant reconstruction after bone reduction in the mandibular arch is seen in Fig. 2. The introduction of low-cost 3-D printing devices has played a key role in providing dental laboratories and clinicians with the ability to fabricate and deliver both surgical and restorative elements with great accuracy, in less time and reduced cost (Fig. 3). The post-operative panoramic radiograph confirms the accuracy of the planning, appreciation of the vital anatomic structures, and successful placement of five implants in the mandible to support a fixed restoration (Fig. 4).

Conventional surgical and restorative protocols based in sound diagnosis and treatment planning will always serve as the foundation for success. Digital tools can only provide us with an enhanced capacity to deliver state-of-the-art treatment for our patients. We have come a long way since my first poster presentation in 1992. The digital universe will continue to evolve, but education is the key to success.

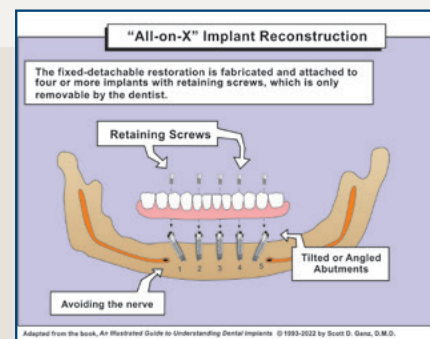


Fig. 1. Adapted from the original 1993 illustration, an "All-on-X" concept with straight and tilted implants for the mandibular arch.

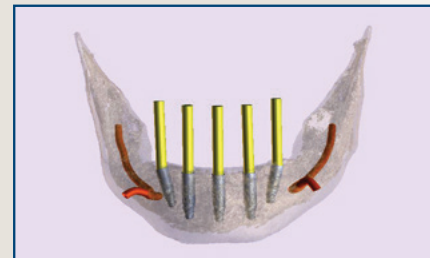


Fig. 2. 3-D software planning simulation for an "All-on-X" implant reconstruction after bone reduction in the mandibular arch.

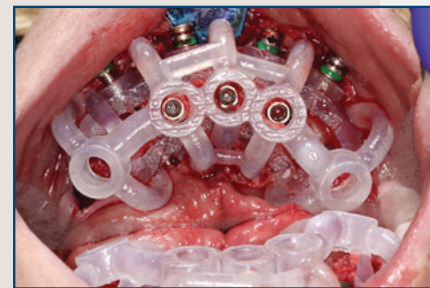


Fig. 3. 3-D printed resin template to accurately place five implants in the mandibular arch with "full-template" guidance.

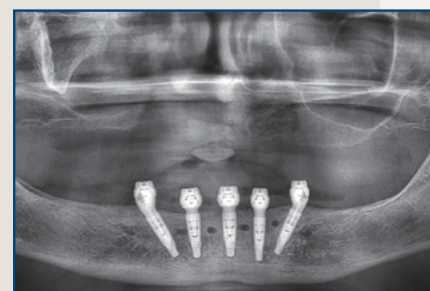


Fig. 4. Post-op panoramic radiograph illustrating five implants with straight and angled multi-unit abutments (MUAs) as simulated in Fig. 1 and planned in Fig. 2.

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AO 2023 Closing Symposium: A day not to be missed

The 2023 Academy of Osseointegration Annual Meeting will prove to be a powerful scientific program from beginning to end. The final day will continue this trend with a slate of expert presenters in the Hands-on Programs, Lab Technician Programs and Lunch with the Masters.

The Saturday morning general session will highlight "Clinical Practice Realities" addressing critical topics associated with everyday clinical practice. A segment on successful guided bone regeneration will address potential biologic, surgical, and prosthetic complications to avoid for successful implant treatment.

"Future Trends and Artificial Intelligence" will feature challenging subjects with compelling visuals and powerhouse presenters. The last of 2023 international interdisciplinary teams to present will be Team Brazil. **Christian Coachman**, DDS, CDT, **Francis Coachman**, DDC, **Adrian Hernandez**, and **Angelo Coelho**, DDC will address "Reverse Engineering Facially Driven Smile Design Into Full Mouth Implant Rehabilitations."

Lyndon F. Cooper, DDS, PhD, will conclude the Closing Symposium with his presentation on "Artificial Intelligence and the Impact on Implant Dentistry."

"The experience of experts has remarkable value when shared generously as has been demonstrated by our speakers. How we embrace technology in dentistry is critical to advancing and improving care. You have all grown to appreciate the importance of planning in providing excellence in implant therapy," stated Dr.

Cooper. "We look forward to the leading clinicians and technicians sharing their ideas and innovations in this field to help us imagine our future in providing the best dental implant therapy has to offer."

"It is my personal belief that clinicians increasingly placing implants, including a broader base of general practitioners, the Academy's Annual Meeting is THE source for the sound science and up to date information about dental implantology," said **Jacinthe M. Paquette**, DDS, 2023 Annual Meeting Program Chair. "We look forward to providing a very strong Closing Symposium with clinicians to whom all registrants will want to aspire."

Register for the Annual Meeting at **osseo.org** by January 23, 2023 to obtain the best meeting rates, hotel availabilities, reserve your spot at limited-seating sessions, and other special promotions.



\$60,000 in charitable grant funding approved by OF



The Osseointegration Foundation's (OF) Charitable Grant Program is a beacon of life-changing implant therapy for patients suffering from severe dental trauma or significant dental deficiencies.

This extraordinary grant opportunity, available exclusively to patients of AO members, provides up to \$10,000 in dental care, materials and lab support, transforming their quality of life. Established in the early days of the Foundation, this program is still going strong, with \$60,000 in new grant funding approved just this year by its Board of Directors. The background on these new cases (listed by AO member performing the treatment) includes:

Sameh K. El-Ebrashi, BDS, MS

Dr. El-Ebrashi's patient presented with a high maxillary smile line and maxillary partial edentulism, six non-restorable teeth, five of which had peri-apical lesions as a result of a traumatic facial attack. Due to the high cost of complex implant treatment, the proposed plan will be objective, well-staged, and precisely executed for the patient to restore pre-operative quality of life. After a detailed intra and extra-oral examination, treatment (which is now complete) included: extraction of seven teeth, placement of four implants, and a screw retained prosthesis.

Chaninun Jadsadakraisorn, DDS

Dr. Jadsadakraisorn will provide treatment to a 42-year-old patient who has been wearing a denture for as long as he can remember, which started with fibrosarcoma on the palate at birth. Treatment by Dr. Jadsadakraisorn will

include: (1) Surgery performed under general anesthesia; (2) Placement of four zygomatic implants and immediate load of interim prosthesis on the maxilla, and two implants on left posterior mandible for implant FPD; (3) Crowns on remaining natural teeth on the mandible to correct occlusal plane; and (4) Final prosthesis fabrication of implant supported fixed complete denture after in monolithic zirconia.

Robert R. Lemke, DDS, MD

Dr. Lemke will be treating a female patient with a diagnosis of significant loss of dentition for the lower arch with no ability to masticate. The plan will consist of: (1) Obtain impressions of upper and lower arch; (2) Have a PMMA upper and lower denture created; (3) Surgery: (a) Extract the lower remaining three teeth, (b) Place four implants, and (c) Perform a same-day immediate conversion of the lower arch to the four implants; (4) Allow her to accommodate to the lower fixed for six-to-12 weeks; and (5) Extract the remaining upper teeth and give her an immediate upper denture.

Mohammed Omeishi, DMD

After his clinical evaluation of an 84 year-old African American male patient with a failing lower interim denture in the symphysis region with no keratinized gingiva and lack of vestibular depth, Dr. Omeishi will provide a prosthetic

OF grant funding... (continued from page 20)

solution that improves quality of life. This will include two additional titled implants posteriorly to support an implant supported fixed complete denture with a high-water design, in addition to connective tissue grafting. This will eliminate the flanges irritating the soft tissues. The restorative plan will be to provide the patient with an acrylic-metal fixed complete denture for the lower arch.

Georgios E. Romanos, DDS, PhD, Prof Dr.

Dr. Romanos will be treating a 62-year-old disabled male with a missing dentition in the mandible and partially dentate in the maxilla. This will require establishing the masticatory function and improvement of his emotional condition. The treatment plan will include surgical placement of four implants in the mandible an overdenture, and placement of six other implants. The restorative plan will include three unit bridges and implant-supported crowns.

Dalia A. Waia, DDS

Dr. Waia's 61-year-old male patient with an intra-oral lesion confirmed in 2016 during a routine dental exam, did not previously schedule the surgery due to financial constraints. Further postponement has caused his condition to become increasingly debilitating.

The treatment plan performed under general anesthesia will include:

(1) resection of the ameloblastoma, extraction of the teeth, and partial mandibulectomy; (2) Free fibula graft along with the placement of four dental implants and immediate loading of interim partial prosthesis; and (3) Final fabrication of implant-supported fixed partial prosthesis after the healing process in monolithic Zirconia. This surgical and prosthetic reconstruction will eliminate the discomfort associated with the lesion and associate morbidity.

The OF Charitable Grant is only available to AO member dental professionals. Patients cannot apply for this grant. To review care provider and patient eligibility requirements, as well as other information, please see osseo.org/grant-programs.



Dr. James S. Gurley passes away

The Academy has learned that long time member **James S. Gurley, DDS** passed away on October 12. He was 66.



Dr. Gurley practiced dentistry in Willoughby, OH for 41 years, including more than 35 as a volunteer faculty member at Case Western Reserve University School of Dentistry. He was an active member in the community and belonged to numerous professional organizations, volunteering his time training new dentists, reviewing journal submissions, and promoting advancements in the field of dental implants. For the Academy, he served on its Research Submission Committee for many years, most recently as chair, and previously was a member of the GP Recruitment Task Force.

Dr. Gurley was also elected to the Osseointegration Foundation Board of Directors earlier this year. "I am looking forward to bestowing more research grants and helping decide who should receive those funds from the Foundation," said Dr. Gurley at the time of his election.

A few of Dr. Gurley's colleagues shared words of remembrance upon learning of his passing:

"Dr. Gurley was a remarkable individual who made many contributions to AO and the Research Committee. He will be missed by all."

- Amerian D. Sones, DMD, MS
AO president

"I will always remember his smile, his interest in research as a practicing clinician, and friendliness. I am truly stunned by the loss of this wonderful person."

- Wendy Michele Croll Halpern, DMD
OF past president

"James was such a wonderful member of the Research Committee for many years. He always welcomed the new and young members and showed them the spirit of AO. His excitement and enthusiasm were infectious, and he will be truly missed."

- Tara L. Aghaloo, DDS, MD, PhD
AO past president

Clinical Innovations Committee looks ahead to 2023 with increased grant funding

By AO Fellow Robert J. Miller, DDS, Chair, Clinical Innovations Committee and Academy News Guest Contributor

Refinement and evolution in any discipline is inevitable.

With respect to Oral Implantology, changes in implant architecture, biomaterials, or the procedural base are all designed to make the provision of implant services more predictable, with fewer complications and compression of treatment time. These innovative methodologies are evaluated for efficacy, and eventually proceed to clinical trials.

Once the paradigm has been shown to fulfill the requirements for acceptable clinical outcomes, the challenge has always been on how to share the results of these trials so that additional clinicians can employ the new strategies. However, there are few venues that allow these innovators to present their research in a timely fashion.

The Clinical Innovations Committee of the Academy of Osseointegration has become the ideal venue for these researchers. The Clinical Innovations

Committee is charged with evaluating submissions that meet the following set of criteria.

- I. The submission must be a new innovation and not presented at a previous conference
- II. The innovation must not have been previously published in a journal
- III. There must be a statistically relevant number of patients treated with this innovation
- IV. Patient data should be tabulated with the clinical outcomes of treatment

Upon receipt of the application, each submission will be judged as to its suitability for Clinical Innovations. If it does not meet the criteria for this committee, it may be referred to Oral Scientific Research, Oral Clinical Research, or as an ePoster. Members of the Clinical Innovations Committee then grade each application and select the top 20 submissions for presentation at the Annual Meeting.

If your innovation is selected for presentation, each clinician will have 10 minutes to share the result of their research. Generally, the presentation is seven minutes followed by three minutes for questions and answers. The presenter also has the option to lecture for the full 10 minutes without questions. There must be no commercial references or logos contained within the presentation. Violation of this rule may lead to your presentation to be ended.

After each presentation, members of the Clinical Innovations Committee will then grade the submission on the basis of originality, design of the study, numbers of case completed, and potential impact on clinical outcomes. The results of these evaluations will be voted on at the conclusion of all lectures, with the winner being awarded \$1,000 and a certificate to be presented at the Academy's Annual Awards and Business Meeting. Funded by the Osseointegration Foundation, this amount was increased for 2023 to be on par with the other abstract awards and to encourage more submissions. Please note submissions for 2023 are closed, however watch for the 2024 Call for Abstracts in June 2023.

We look forward to welcoming all researchers at the Academy's 2023 Annual Meeting in Phoenix, AZ. Register for the Annual Meeting at osseo.org by January 23, 2023 to obtain the best meeting rates, hotel availabilities, reserve your spot at limited-seating sessions, and other special promotions.



Dr. Robert J. Miller

AO 2022 Summit: Navigating the path forward through scientific consensus

By: Mehrdad Favagehi, DDS, MS, Academy News Editor

This edition of *Academy News* contains articles questioning past theories about implant failures, radiographic bone levels around implants, implant surfaces and peri-implantitis. The scientific method and expertise are needed to validate theories and assumptions. Once a consensus is reached, we can determine the future course for osseointegration. That's the mission of AO Summits.

A forerunner in understanding the value of consensus in science was Sir Francis Galton (1822-1911), who advanced the field of statistics by introducing bivariate normal distribution, variance, standard deviation, and regression towards the mean.

In 1906, Galton attended a farmers' fair in Plymouth, England where he was captivated by a weight guessing contest. None of the 800 participants guessed the correct weight of an ox to win the prize. Galton analyzed the ballots and found that the average guess by the crowd was within one pound of the actual weight of the ox that weighed 1,198 pounds.

"The Wisdom of Crowds: Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations," is the title of a book by James Surowiecki based on a discovery made by Sir Francis Galton.

The 2022 Summit participants gathered in Oak Brook Hills, IL didn't have to guess the weight of any livestock. They

weren't just any crowd, either. Summit participants were an international panel of experts representing leaders in implant dentistry from academia, clinical practice, dental industry, and professional organizations. Their task was to weigh the scientific evidence about guided implant surgery, ceramic implants, and various implant connections.

The "wisdom of the crowds" advantage was obvious as experts reviewed the scientific evidence and deliberated to reach a consensus. As expected with such a diverse group assembled from around the globe under one roof, there was a healthy representation of different viewpoints. The Summit's directors reinvigorated debate through discussions and using an electronic audience response system.

The expert panels consensus about the best scientific evidence of the topics covered in the Academy's 2022 Summit will provide valuable insights about the present, past and future of implant dentistry. The outcomes of the Summit will be presented by Dr. **Todd R. Schoenbaum** at the 2023 Annual Meeting. As past President, Dr. **Edward B. Sevetz, Jr.** wrote in his article on page 8, opportunity knocks but once. Please plan to attend the 2023 Annual Meeting (March 16 - 18) in sunny Phoenix, AZ as the Summit leaders present their findings during the Opening Symposium. Registration is now open at www.oseeo.org.

The Editor's Editorial is intended to contribute to the dialogue on issues important to implant dentists. The views expressed in the editorial do not necessarily reflect the policy of the Academy of Osseointegration or its board of directors. To provide feedback about this edition, or to contribute as a guest author, please contact me at mfavagehi@yahoo.com. We will endeavor to publish pertinent comments or views when space permits.



DS PRIMETAPER[®]

A MODERN IMPLANT INSPIRED BY A PROVEN DESIGN

We took the best features from the Astra Tech Implant System[®] - OsseoSpeed[®] and MicroThread - and added them to the new tapered DS PrimeTaper implant to help preserve your patient's smile.

● IMMEDIATE STABILITY

Progressive thread pattern that's been carefully designed to cut quickly and engage with bone

● LASTING BONE CARE

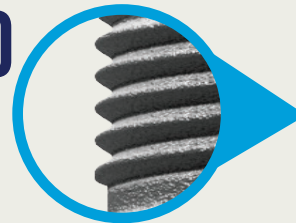
DS PrimeTaper's OsseoSpeed surface delivers long-term bone care, outperforming the competition regarding bone maintenance at both one and five-year intervals.

● ENVIABLE ESTHETICS

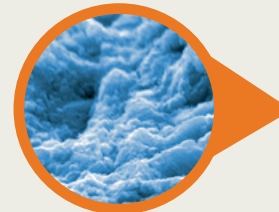
Superior long-term marginal bone maintenance means lasting esthetics for your patient

● SEAMLESS WORKFLOW INTEGRATION

A digital workflow where everything from impression taking to final restoration is harmonized



MicroThread



OsseoSpeed
Surface



Progressive Thread

