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*References: Accuracy of Edentulous Computer-Aided Implant Surgery as Compared to Virtual Planning: A Retrospective Multicenter Study; R. Vinci, M. Manacorda, R. Abundo, A. G. Lucchina, A. Scarano, C. Crocetta, L. Lo Muzio, E. F. Gherlone, F. Mastrangelo; J Clin Med. 2020 Mar 12;9(3):774. doi: 10.3390/jcm9030774 // Clinical Factors Affecting the Accuracy of Guided Implant Surgery - A Systematic Review and Meta-analysis; Wenjuan Zhou, Zhonghao Liu, Liansheng Song, Chia-Ling Kuo, David M Shafer; pubmed.gov; Epub 2017 Jul 22



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ACADEMY NEWS

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President's Message

Advancing our legacy of excellence

By Amerian D. Sones DMD, MS



As your 2022-2023 President, I embrace my role with the greatest pride and admiration for our organization and members. Thank you so much for this amazing honor to

serve and continue our legacy of excellence. Our February 2022 Annual Meeting under the leadership of immediate past President, **Tara Aghaloo**, was a success in multiple ways as we convened for the first time since the 2019 Washington, D.C. meeting.

As a jubilant gathering, we cautiously unmasked and greeted our fellow colleagues, nationally and internationally. Although masks were required in the convention center, many removed masks for meetings. We did remain well and hosted 1,127 attendees, which included 329 live streaming participants, 52 speakers from across the globe, and 140 research posters. Total research submissions were 178 including 19 clinical innovations, and 20 corporate sponsors. Many thanks to our loyal and valued corporate partners.

There is much work to be done this year as we launch a new AO Master and AO Diplomate Certificate under the leadership of AO President-elect, **Hom-Lay Wang**, which includes a new certifying board. I encourage young clinicians and experienced practitioners alike to take the challenge and complete either certificate and make this your personal best work in implant dentistry. AO Training Centers are on the horizon for your educational experience to fulfill the required CE hours, another project implemented so elegantly by Dr. Wang.

AO newly-appointed Treasurer, **Joseph Fiorellini**, will oversee our financials as now Vice-president, **Joerg Neugebauer**, passes the torch to him. We also give Dr. Fiorellini the highest congratulations for achieving the **William R. Laney Award**. Secretary **Robert Vogel** will complement our officers' slate with his experience and knowledge. Our distinguished **Board of Directors** are an amazing group of professionals, and I am honored to have this opportunity to collaborate and work with them on your behalf.

The education gained by those in the past will continue to shape our future in implant dentistry. Digital technology has influenced our profession in so many areas, however,

lessons learned from the experienced seasoned clinician should not be forgotten. The **AO DocMatter** platform has become a wealth of information for all members to learn from a community which supports them.

Our **global outreach programs** and affiliate members continue to grow as do our **AO University-based** student and resident chapters. Our signature journals continue to receive record submissions - the *International Journal of Oral and Maxillofacial Implants (IJOMI)* under the leadership of newly appointed editor and AO past President, **Clark Stanford**, and the *International Journal of Periodontics and Restorative Dentistry (IJPRD)* with continued editorial leadership under Drs. **Marc and Myron Nevins**.

Lastly, **Jacinthe Paquette** (Chair of the 2023 Program Committee) has organized a most impressive collaboration of global team speakers for the Annual Meeting in **Phoenix, Arizona, March 16-18, 2023**. Mark your calendars and reserve the time to enjoy the program, and consider taking a few extra days to savor the climate and attractions of Arizona, too. I look forward to serving the Academy this year and thank you all for your membership, professional collaboration, and friendship.



2022 Annual Meeting provides return of in-person awards

The Academy's 2022 Annual Meeting provided several face-to-face opportunities for awardees to receive due recognition in front of their peers. Congratulations to the following individuals who were honored at the San Diego Convention Center, February 24 - 26, 2022:

New Fellows

Fellowship in the Academy is obtained by demonstrating a commitment to the field of osseointegration. Members must excel in academics and service to the Academy. Two active members achieved Fellowship status this year:

Desponia Bompolaki, DDS, MS (Portland, OR). Dr. Bompolaki studied at the University of Athens and Baylor College at Texas A&M. She is a Board-certified prosthodontist who maintains her own practice, as well as an associate professor of restorative dentistry at Oregon Health and Science University in Portland. A member of the Academy since 2014, she has served on the Research Submission, AO/OF Research Grant, and William R Laney committees. She has published numerous articles and presented both nationally and internationally.

David M. Kim, DDS, DMSc (Cambridge, MA), associate professor and division head in the Department of Periodontology at the Harvard School of Dental Medicine. A member of the Academy for the last 19 years, Dr. Kim has served on the Research Submission, Website Education, AO/OF Research Grant, and the Advisory Committee on Committees. He has also authored seven textbook chapters and 85 articles in the *Journal of Oral and Maxillofacial Implants (JOMI)* and other peer-reviewed journals.

Nobel Biocare Brånemark Osseointegration Award

Torsten Jemt, DDS, PhD, was the 14th recipient of the Nobel Biocare Brånemark Osseointegration Award. He holds a combined scientific position at the Faculty of Odontology as an associate professor, and as a clinical scientific coordinator at the Dental Health Service of the region of Västra Götaland, Sweden. This annual award, made possible by a grant from Nobel Biocare, is bestowed by the Osseointegration Foundation (OF), the Academy's philanthropic arm. It honors an individual whose impact on implant dentistry is exemplary in any or all of the Foundation's mission categories: research, education, and charitable causes.

William R. Laney Award

Named after the Academy's first president and inaugural editor of *JOMI*, **William R. Laney**, DMD, MS, this award recognizes the best article published in the past year in the Academy's official publication, in which Dr. Laney served for many years as Editor Emeritus. The 2022 recipient was **Joseph P. Fiorellini**, DMD, DMSc, University of Pennsylvania, for "Diabetic Serum Inhibits Osteoblast Adhesion to Titanium Surface Through Advanced Glycation End Products: An In-vitro Study" published in Volume 35, Issue 3, 2020.

OF Research Grants

As part of its mission to foster the highest ideals of research, OF increased its financial support, up to \$50,000, to each dental professional pursuing groundbreaking research. The following First Place recipients presented their findings:

Applied Science Research Grant

Hsun-Lian Chan, DDS, MS; University of Michigan; "Three-year Outcomes for Facial Mucosal Level for Single Immediately Placed Implants Evaluated by Ultrasonography"

Basic Science Research Grant

Roberta Okamoto, DDS, MSc, PhD; "Strategies for improving Peri-implant Bone Repair in Osteoporotic Bone Using Novel Additive Manufacturing and Drug Delivery"

Best Presentation Research Awards

Each year, the Academy's Research Submissions and ePoster committees collaborate to select the best research abstract submissions, presented at the Annual Meeting. The following were honored in 2022:

Best Oral Clinical Presentation

Allison Rascon, DDS; University of Pennsylvania; "The Clinical Effect of rhPDGF-bb and Particulate Bone Graft on Regeneration in Peri-implantitis"

Best Oral Scientific Presentation

John Pizarek, DMD, MS; University of Minnesota; "Immunomodulatory IL-23R Antagonist Peptide Coatings to Prevent Peri-implantitis"

First Place ePoster Award

Hussein Basma, DDS, DESS, MS; University of Alabama at Birmingham; "A Randomized Controlled Trial to Compare the Histomorphometric and Clinical Outcomes of Soft Tissue Augmentation at the Time of Lateral Ridge Augmentation Procedures"

Second Place ePoster Award

Sasiya Bhumpattarachai, DDS; Loma Linda University; "Effects of Cyclic Loading on Abutment Screw Torque Loss When Angulated Screw Channel Single Implant Crowns are Attached to Narrow Diameter Implants"

Best Case Presentation

Renato Limberte, DDS; University of Southern California; "Forced Eruption (Orthodontic Extrusion) for Soft and Hard Tissue Formation Before Immediate Implant: A Case Report"

Best Clinical Innovations

Shayan Barootchi, DMD; University of Michigan; "Ultrasonographic Tissue Perfusion in Peri-implant Health and Disease"



Reach the highest levels of implant dentistry with prestigious credentialing program

The Academy of Osseointegration (AO) has officially launched its new credentialing program!

Designed to incentivize practitioners to reach the highest levels in implant dentistry, the Academy's credentialing program is a unique initiative based in science, education and technology. This very stringent program will demonstrate your commitment not only to implant dentistry but also to the welfare of your patients.

This prestigious new Academy initiative awards AO Master Certificates and AO Diplomate Certificates to applicants who meet the defined criteria. Applicants may prepare for

Surgical, Restorative or a combination of both Surgical and Restorative certificates.

"By launching this program, the Academy is meeting current trends, serving its members' needs, and maintaining a higher global benchmark of education, training, skill, and experience needed to provide the service patients want," according to AO President-elect Dr. Hom-Lay Wang, who spearheaded this new program and member benefit.

For comprehensive details about the program, please see the ad on pages 23-24 and osseo.org.

Quiz: Can you name the 12 ADA recognized specialties in dentistry? What is the process for specialty recognition?

By: Academy News Guest Contributors Joan Otomo-Corgel, DDS, MPH; and Karen Hart, Senior Director, Education Operations and Director of CDEL

Let's start with the process. Three separate, but related, agencies of the ADA play important roles in ensuring quality education and recognition of dental specialties for the public and the profession: Commission on Dental Accreditation (CODA), National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB) and Council on Dental Education and Licensure (CDEL).

The processes for accrediting advanced education programs in the dental specialties and recognizing dental specialties by the ADA and its Council on Dental Education have evolved since their inception more than 40 years ago. Today, CODA is a semi-autonomous agency of the ADA, with sole authority to administer the dental accreditation program, develop quality standards, and determine accreditation status for dental education programs. CODA receives its accreditation authority from the acceptance of the dental communities (private practitioners, educators and licensing bodies), and the United States Department of Education. The scope of CODA's responsibilities does not include the recognition of dental specialties.

Specialty recognition is the purview of the NCRDSCB (National Commission) formed in 2018. The National Commission is also a semi-autonomous agency of the ADA, with sole authority to administer the specialty recognition program, determining whether an applicant meets the ADA's *Requirements for Recognition of Dental Specialties and Certifying Boards for Dental Specialties* (Requirements).

The National Commission applies these quality standards to recognize disciplines of dentistry as dental specialties and their associated specialty certifying boards. The National Commission also conducts reviews of the recognized dental specialties and certifying boards to ensure ongoing compliance with the Requirements for the benefit of the dental profession, state dental boards and the public.

These commission programs involve a public trust that requires the programs be administered and decisions made in a consistent manner that is free from bias and conflict of interest. Through the promulgation of quality standards and requirements, the commissions endeavor to protect the public, students, and the profession through integrity, confidentiality measures, and due process. This assures the long-term viability of dentistry as a self-regulating profession. The commissions are obligated to receive input

from all communities of interest, including the public; they must weigh all input equally and make decisions that are in the best interest of the commissions themselves, as well as the public.

Both CODA and the National Commission have a long history of operation, first as committees of the precursor to the ADA CDEL or CDEL itself. As public and government entities' expectations on controlling conflict evolved over time, the work of these committees was transferred to the commission structures of today. Currently, the ADA relies on the CDEL to serve as a "community of interest" to the commissions. CDEL monitors CODA activities, commenting on proposed accreditation standards and policies on behalf of the ADA and reporting on accreditation matters to the association.

Regarding specialty recognition, CDEL has responsibility for maintaining, reviewing and proposing revisions to the ADA's Requirements to the ADA House of Delegates. The Requirements are essential to the conduct of the National Commission's recognition program.

Can you name the 12 dental specialties?

(See answers on bottom left of page.)

*Editor's Note: AO members serving on the ADA/ CDEL Committee on Recognition of Dental Specialties include Dr. **Joan Otomo-Corgel** as the committee chair and Dr. **Mehrdad Favagehi** representing specialists in private practice. Other AO members serve in CODA and NCRDSCB.*



Dr. Joan Otomo-Corgel

Answers: 1. Dental Anesthesiology, 2. Dental Public Health, 3. Endodontics, 4. Oral and Maxillofacial Pathology, 5. Oral and Maxillofacial Radiology, 6. Oral and Maxillofacial Surgery, 7. Oral Medicine, 8. Orofacial Pain, 9. Orthodontics and Dentofacial Orthopedics, 10. Pediatric Dentistry, 11. Periodontics and 12. Prosthodontics

Dr. Steven Eckert: Calm, measured, and inspirational

*Editor's Note: Academy News has initiated a new "History Highlights" section to regularly draw attention to major events and foundational leaders in the Academy's chronicles. This first article focuses on the career of AO past President **Steven E. Eckert**, DDS, MS who has retired as the second editor-in-chief of IJOMI, to be succeeded by AO Life Fellow and past President **Clark M. Stanford**, DDS, PhD, MHA.*

AO Life Fellow Steven E. Eckert, DDS, MS, fondly describes his early involvement in the Academy of Osseointegration (AO) and its official journal, the *International Journal of Oral and Maxillofacial Implants (IJOMI)*.

These efforts were made more comfortable as they allowed continuation of Mayo Clinic tradition. "It was interesting how Bill smoothed my transition from one role to another. It wasn't just me, many people benefitted from his leadership," said Dr. Eckert of his mentor, **William R. Laney**, DMD, MS, the Academy's inaugural president and first editor in chief of *IJOMI*. "My office at Mayo was two doors down from his. He was someone who was always there whether it was help with the journal or help with the specialty."

A graduate of Ohio State University College of Dentistry, Dr. Eckert then completed a General Practice Residency at Mount Sinai Hospital in Chicago. After eight years in Chicago, he



Dr. Steven E. Eckert

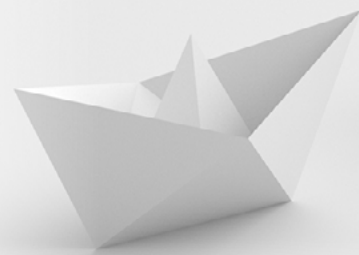
moved to Rochester, MN to attend the Combined Prosthodontic and Maxillofacial Prosthetics Program at the Mayo Clinic. Upon completion of the Prosthodontic Specialty Program, Dr. Eckert was asked to join the staff at Mayo. He transitioned from associate consultant to full consultant, and ultimately to academic rank of full professor. He served as graduate program director for prosthodontics for approximately 15 years. During that time, Dr. Eckert successfully challenged the prosthodontic specialty board and eventually became an examiner in prosthodontics, an honor that is considered to be the highest professional achievement in prosthodontics.

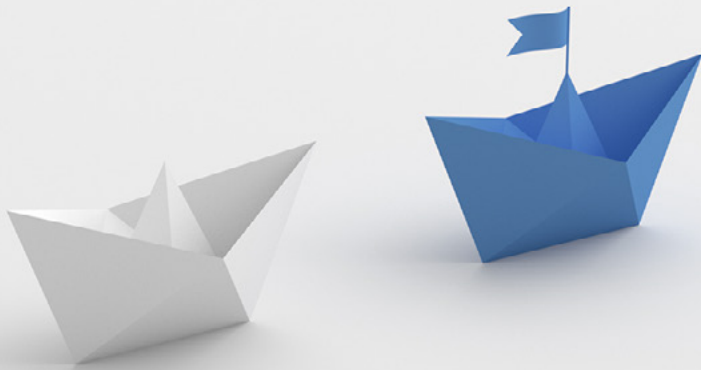
After attending several meetings as a guest, Dr. Eckert joined AO in 1990. He served on five different committees. He was then selected to participate on the board of directors, ultimately serving as its 21st president from 2007 - 2008.

Very early in his presidency, Dr. Eckert and the board found themselves embroiled in issues concerning demands raised by some of the sponsoring corporations. In essence, there was a demand from industry that it be allowed to select speakers.

"At the time, there already was a perception of excessive corporate involvement in the scientific meetings. A loose relationship would be beneficial since the program would remain under the guidelines of AO, which answers to CERP. Conversely, programs controlled by industry would have the appearance of bias. Many hours of discussion between the AO board and some of the corporate leadership took place. Negotiation led to improved understanding and the workings of AO and industry were improved. This solution to the problem re-routed the Academy's activity for the first few months of my presidency."

Once the corporate concerns were resolved, the remaining time during Dr. Eckert's presidential year was devoted to the normal workings of the Academy. The other priority for his term as president was devoted to moving the Academy into the realm of a truly international organization. Prior to this, its meetings had an international hint, but the actional of this board, AO grew in the area of internationalism.





Prior to the efforts with the Academy, Dr. Eckert had begun as the editor-in-chief of *IJOMI*. One of his first priorities was looking at submission and acceptance rates. He recalls, "During Bill's last year, there were fewer than 200 submissions. In the year we shared editorship, 200 - 250 articles were submitted. Then the submission rate began to change. Submissions grew appreciably to more than 300 in my first full year of editorial efforts. At the time, I sat with the editor of another journal who said we needed to get our acceptance rate down. I thought it was an interesting concept. The more you think about it, the more logical it becomes."

Today, *IJOMI*'s acceptance rate is below 30%. With 70% of submissions not accepted, it means you can be that much more critical of the ones that are borderline. Critical evaluation generally means better articles because we can critically appraise them. "If we don't have selectivity, we won't get much in the way of quality," Dr. Eckert explained.

The number of submissions from throughout the U.S. are very similar to those received from Brazil, Italy, Turkey, Korea, Japan, China, and others are well represented. Realistically, good science can be found throughout the world. It is important to identify it with an unbiased eye. *IJOMI* has become far more international over the years, much like the Academy - both of which intentionally evolved to reflect its membership. From the start of his editorship, Dr. Eckert tried very hard to ensure there was a global flavor on the editorial board.

One of Dr. Eckert's beliefs has been in the technical and electronic aspects. Dr. Laney edited articles in the standard fashion with a red pencil and comments in the margin. As the number of abstracts received has averaged between 500 - 600 per year for the past few years, submissions are reviewed on the computer so everything can be seen at any point in time. Grading the abstracts has evolved the same way. It has made the process all the more transparent for the submitters, which was another good thing for *IJOMI*, according to Dr. Eckert.

In terms of topics and areas of research, *IJOMI* has evolved from its early narrow mechanical focus on topics limited to the implant design and the implant success. Today the journal has changed. "When I became involved, it was a journal where we were seeing more and more creative

surgical innovations and unique approaches toward the design of implants that had not been previously recognized. Innovation is the direction the journal took."

Relative to other aspects of *IJOMI*, Dr. Eckert stated case studies, in his opinion, are not science, because there is a sample size of 1. "Your next step should be a case series, then cohort study, followed by a randomized clinical trial, and from that, meta-analysis of systematic reviews. It is a very orderly review."

In regard to impact factor, it should not be the "be all to end all" according to Dr. Eckert. "There has not always been a strong emphasis on it."

IJOMI has also expanded to include online content and that amount is up to the publisher. The editor can choose which submissions to publish electronically, like systematic reviews, which are typically very paper intensive. "With the abstract published in the hard copy version, you can take a submission that would normally average 50 pages and pare it down to about 8 - 10 pages (electronically), still achieve diversity in submission groups, and produce an interesting journal with a broad range of investigation.

"The most rewarding part of being editor has been in helping make sure we continue to publish research that is valuable to the profession. I think that is critically important that we provide readers with a publication that will show them different ways to do things and investigate."

He continued, "It is difficult to identify how an idea gets propagated and how much scientific merit there is toward the publication of new ideas."

Adding to the accolades of his storied career, Dr. Eckert was the 10th recipient of the prestigious Nobel Biocare Brånemark Osseointegration Award, bestowed to him in 2017 by **Myron Nevins**, DDS, then president of the Osseointegration Foundation. "Dr. Eckert has done a remarkable job as editor-in-chief of *IJOMI*, extending the horizons of our journal, especially with expansion of the electronic edition. He has inspired professionals in our field to author papers, and we are all grateful for the information *IJOMI* provides. It all translates into significant improvement in clinical practice and improved patient results," Dr. Nevins explained.

Today, Dr. Eckert continues to serve as director of research for ClearChoice, a position he has held since 2010. In this capacity, he remains instrumental in implant dentistry by managing the largest accumulation of data on implant procedures in the world. Although he retired from clinical practice in early 2018, he plans to maintain this position at least a few more years.



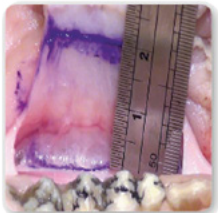
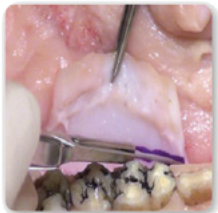
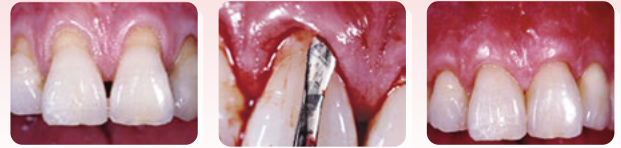
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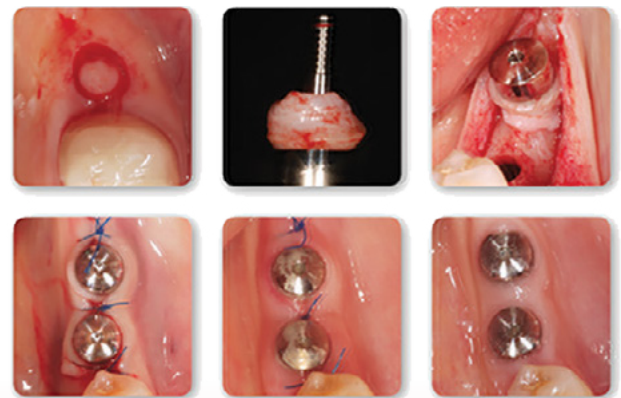
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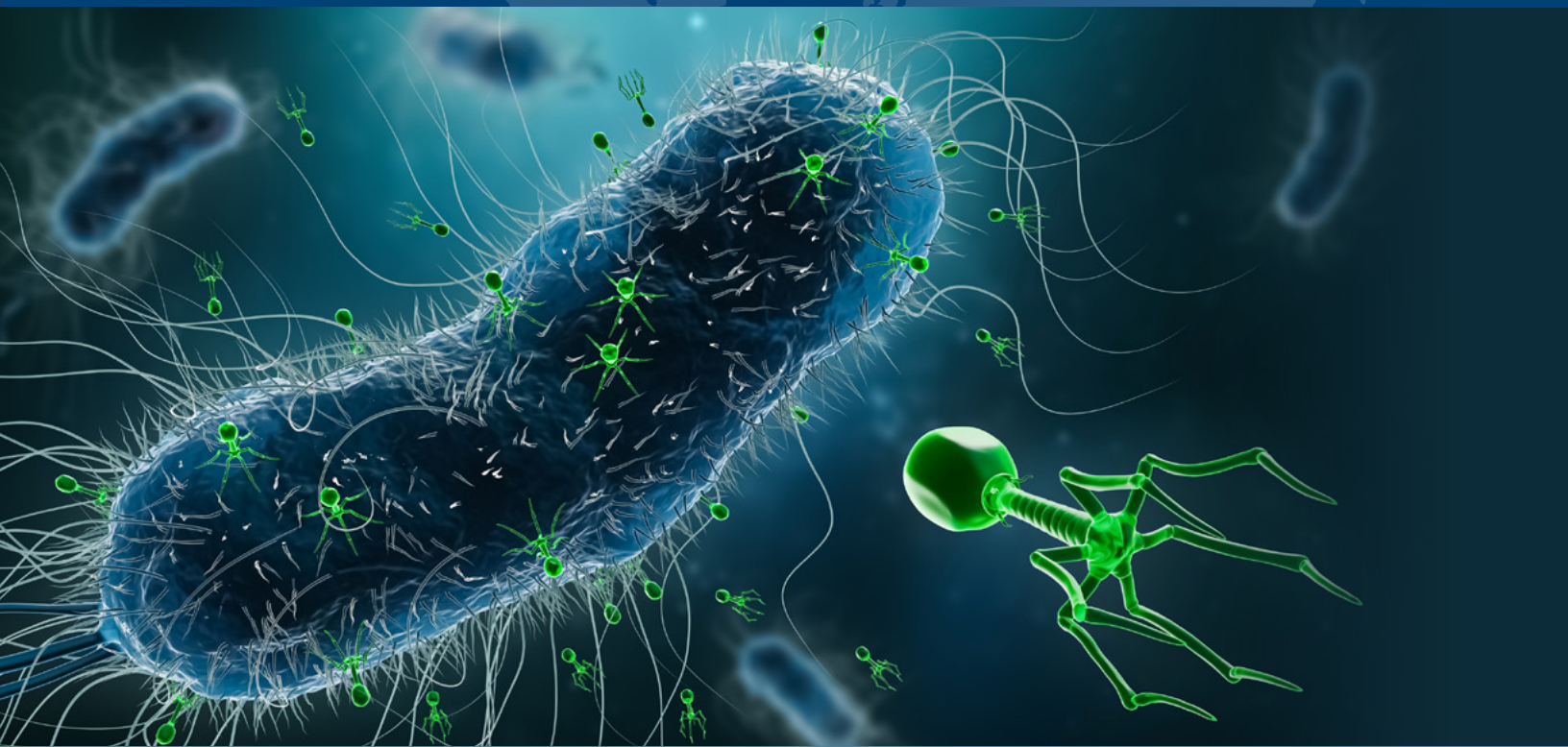
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Antibiotics and microbial resistance: How can we play a role in prevention of the next global pandemic

By: Lourdes Ann Christopher, DDS, MS, Academy News Editorial Consultant, and Mehrdad Favagehi, DDS, MS, Academy News Editor

A recent article in *Lancet* reported that in 2019, 1.27 million global deaths were directly attributable to bacterial antimicrobial resistance (AMR) and an additional 4.95 million deaths were indirectly associated with bacterial AMR.¹ A report from UK projected that AMR could result in the deaths of 10 million people per year by 2050, making it a leading cause of death beyond cancer.²

While antibiotics save lives and are needed to manage infections, the CDC estimates that 28% of antibiotic courses prescribed by U.S. doctors are unnecessary.³

Prescribing a full course of antibiotics following routine dental implant surgery for healthy patients is controversial and not supported by any consensus.⁴ However, according to a Cochrane systemic review, there is ample evidence for a single 2- or 3-gram surgical prophylactic dose of amoxicillin to reduce early implant failures.⁵ Even though a recent multi-centered Swedish study questions the clinical value of this small benefit⁶, single doses of surgical antibiotic prophylaxis offer clinicians a more judicious use of antibiotics while avoiding AMR^{7,8}.

The battle between antimicrobial-resistant pathogens and antibiotic therapy is an evolutionary arms race – one that we are currently losing.

– Ragheb et al., 2019

Antiseptics, such as chlorhexidine, don't result in AMR. A pre-rinse with chlorhexidine can reduce the risk of implant failure by as much as 6%, while combining a single prophylactic dose of antibiotics with chlorhexidine pre-rinsing can reduce the risk for early implant failure by as much as 8%.⁹ The benefits of this combination approach

were recently confirmed in a consensus report by the Italian Academy of Osseointegration based on systemic reviews.¹⁰

More research needs to be done before a standard antibiotic prophylaxis regimen is established as a

standard of care in implant dentistry. Given the potential epidemic concerning antibiotic resistance, when it comes to antibiotics for routine implant surgery, less is more and anytime an antiseptic rinse can be used safely, that may be even better.

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



Highlights from the Academy's 2022 Annual Meeting

Back together again!

The shores of the San Diego Bay provided an idyllic backdrop for the proud return of the Academy's live, in-person Annual Meeting, held February 24 - 26, 2022 at the San Diego Convention Center. "Implant Dentistry for All" saw nearly 1,130 total attendees, including 329 livestream participants, 52 expert presenters from across the globe, more than 100 exhibiting companies, and nearly 180 research submissions "Honoring the Past, Treasuring the Present and Shaping the Future." On the social side, all registrants had the opportunity to become reacquainted at the Academy's iconic President's Reception, held this year under the stars aboard the flight deck of the USS Midway.

01 Colleagues from Europe and around the globe were happy to reunite under the stars on the flight deck of the USS Midway.

02 Many livestream social media interviews by The Dental Guys took place in the exhibit hall throughout the meeting.

03 Dr. Alessandro Pozzi led one of four sold-out hands-on workshops woven into the main Annual Meeting program this year.

04 Outgoing president Dr. Aghaloo (right) connects with UCLA colleague and mentor Dr. Earl Freymiller and incoming president Dr. Sones.

05 1st Place Osseointegration Foundation Basic Science Research Grant recipient Dr. Roberta Okamoto presents her findings.

06 AO board members Drs. Hom-Lay Wang (left) and Robert Lemke enjoy the 2022 President's Reception, giving it a thumbs up.

07 Dr. Tara Aghaloo celebrated the completion of her term at the helm of AO with many friends at the President's Reception.

08 "Implant Dentistry for All" provided many opportunities for attendees to get reacquainted in-person since the pandemic.

09 ePosters presented throughout the meeting provided attendees with many opportunities to discuss the latest research.

10 Dr. Amerian D. Sones provides her remarks upon being elected AO's 36th President during the Annual Business Meeting.

11 This year's outstanding program was under the leadership of Program Chair Dr. German Gallucci and President Dr. Tara Aghaloo.

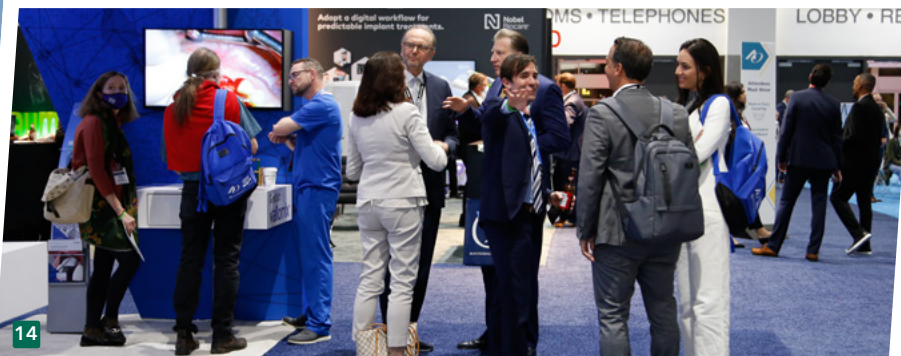
12 Congratulations to Drs. Desponia Bompalaki and David Kim for achieving Fellowship, recognized at the Opening Symposium.

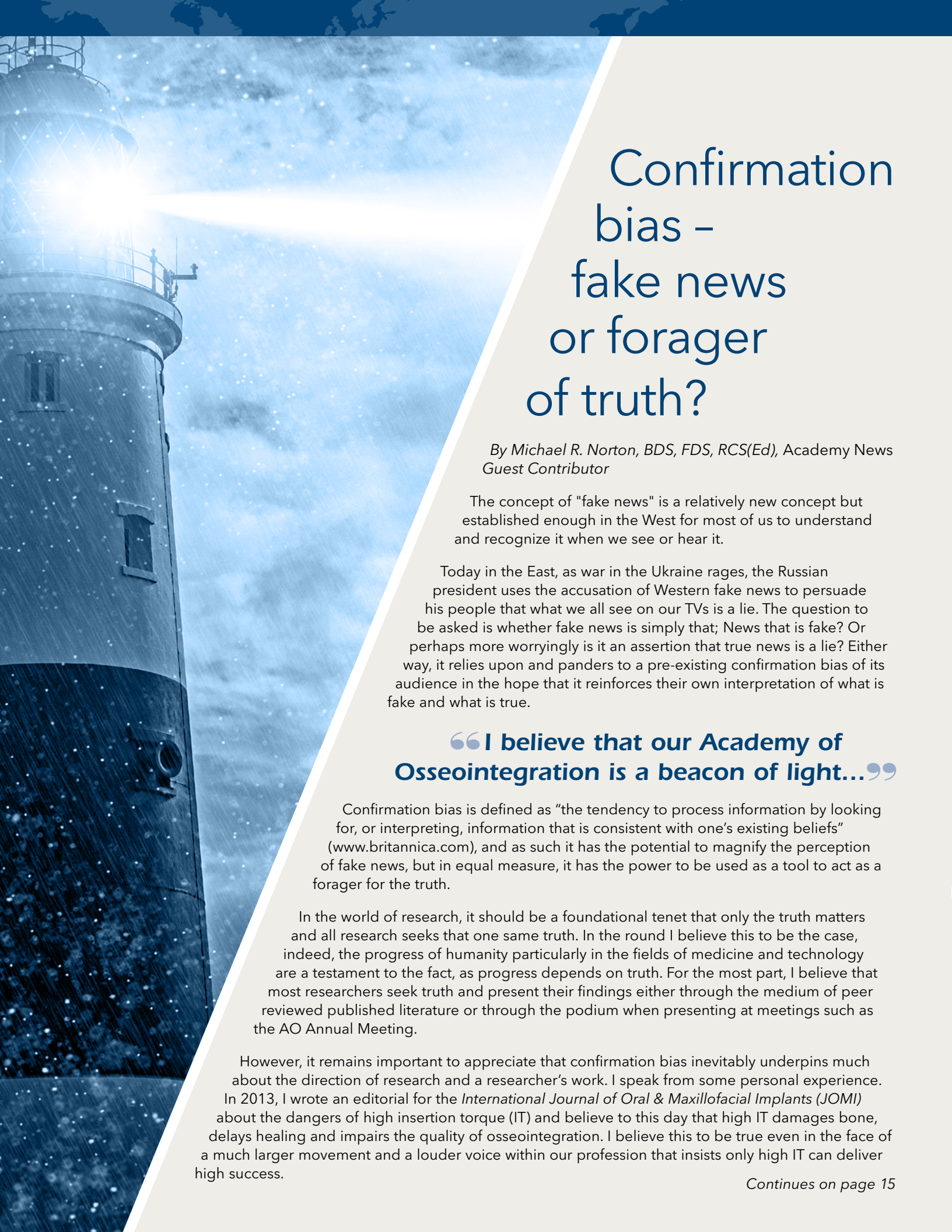
13 The President's Reception provided attendees a tour of the USS Midway and activities like virtual reality simulators.

14 More than 100 companies exhibited the latest dental products and technologies, attracting crowds in the exhibit hall.

15 Dr. William Giannobile provided the kick off with a keynote presentation on the Future of Regenerative Dental Medicine.







Confirmation bias – fake news or forager of truth?

By Michael R. Norton, BDS, FDS, RCS(Ed), Academy News Guest Contributor

The concept of "fake news" is a relatively new concept but established enough in the West for most of us to understand and recognize it when we see or hear it.

Today in the East, as war in the Ukraine rages, the Russian president uses the accusation of Western fake news to persuade his people that what we all see on our TVs is a lie. The question to be asked is whether fake news is simply that; News that is fake? Or perhaps more worryingly is it an assertion that true news is a lie? Either way, it relies upon and panders to a pre-existing confirmation bias of its audience in the hope that it reinforces their own interpretation of what is fake and what is true.

“I believe that our Academy of Osseointegration is a beacon of light...”

Confirmation bias is defined as “the tendency to process information by looking for, or interpreting, information that is consistent with one’s existing beliefs” (www.britannica.com), and as such it has the potential to magnify the perception of fake news, but in equal measure, it has the power to be used as a tool to act as a forager for the truth.

In the world of research, it should be a foundational tenet that only the truth matters and all research seeks that one same truth. In the round I believe this to be the case, indeed, the progress of humanity particularly in the fields of medicine and technology are a testament to the fact, as progress depends on truth. For the most part, I believe that most researchers seek truth and present their findings either through the medium of peer reviewed published literature or through the podium when presenting at meetings such as the AO Annual Meeting.

However, it remains important to appreciate that confirmation bias inevitably underpins much about the direction of research and a researcher’s work. I speak from some personal experience. In 2013, I wrote an editorial for the *International Journal of Oral & Maxillofacial Implants (JOMI)* about the dangers of high insertion torque (IT) and believe to this day that high IT damages bone, delays healing and impairs the quality of osseointegration. I believe this to be true even in the face of a much larger movement and a louder voice within our profession that insists only high IT can deliver high success.

Continues on page 15

Confirmation Bias *(continued from page 14)*

Consequently, I have spent the last decade crystallizing my thoughts and establishing studies that support my beliefs in an effort to seek the truth through the findings of these studies. But, and it is an important “but,” a researcher must recognize the danger that in a genuine effort to seek truth they must avoid the pitfall of stepping into an abyss that is fake news. In so doing, they travel away from truth and lead others with them. This is why we have the peer review process and furthermore why all peer review journals today utilise algorithms to seek out studies which might be disingenuous at least in regard to plagiarism and/or repetition, both of which are forms of fake news, but perhaps not as bad as fundamentally presenting fake results or research that never took place. Thankfully this is very rare!

In the world of implant dentistry, I have seen much ebb and flow over the last 30 years. Corporate sloganism has informed science and we see implant designs and features copied, cloned and replicated without due process to research or documentation. We hear lecturers present data where they claim the absence of failure, but this is not the same as the absence to claim (or admit) failure!

I don't seek through this article to take any higher moral ground, but I do worry that for the younger professionals in our midst and especially those with no formal post-graduate training in research. They need to acquire the tools to make informed decisions about what they read in the pages of our journals and what they hear on the podia of international conferences. We should all respect the depth and wealth of knowledge that comes with the gravitas of a highly acclaimed international educator, researcher, and lecturer whilst at the same time, having the self confidence and independent power of thought and analysis to decide if what we are hearing is tinged with confirmation bias for the good or for the bad.

I believe that our Academy of Osseointegration is a beacon of light in this regard. Having served for many years as the editor of this newsletter, as well as 13 years on the AO board, including as your president in 2017-2018, I know

Dr. Michael R. Norton



that at its heart, AO and those who run it only seek truth and deplore the idea that anyone would utilize the pages of *JOMI* or the podium of our annual meeting to peddle fake news.

That is also why the AO Summits are so important, as they act as a forum for honest debate where individuals can forcefully defend their beliefs and biases, in the knowledge that the aim is to reach consensus and agreement of what represents the truth. I for one, am really looking forward to the forthcoming 2022 AO Summit this August in Oak Brook, Illinois, where I will undoubtedly disagree with the views of some of my most ardent critics, but where I hope we will continue to share a deep respect for each other's opinions and that through our individual confirmation bias we can as a collective seek that truth. In this way, implant dentistry will continue to progress for the good of the profession, the good of our patients, and ultimately the good of humanity!



Implantoplasty: An absolute mess or a sensible solution?

By Philippe Khayat, MSD, Academy News Editorial Consultant

Picture a major meeting, more than one thousand professionals all in one room holding a two-hour session on peri-implantitis. The speaker, a well-respected periodontist is covering different treatment options. Suddenly, he gets very excited: *"What about implantoplasty? Everyone familiar with this term? Get in there with a diamond bur and cut the threads off and remove the surface and try to polish it up! If you've tried that, it makes an absolute mess."*

Not a very positive statement.

Let's face it, we are not comfortable with the idea of taking a bur to an implant surface. There is something almost sacred about this surface, the holy interface between bone and implant, the key to osseointegration, the key to success.

It is also a renunciation! It means we give up on regeneration. The treatment objectives switch from careful decontamination of the surface and new bone growth to accepting our losses and just focusing on creating a healthy environment." Always painful to walk a road other than the noble path.

There are the practical issues as well. For those of us, oral surgeons or periodontists, who are not routinely using a high-speed turbine, how comfortable are we with this instrument? Once the prosthesis has been removed and a flap raised, implantoplasty really feels like preparing a tooth, and it is not as easy as it seems!

Then there is the abundant production of titanium particles. Knowing conventional spray is not effective, how do we eliminate them? If a few particles remain, could this be detrimental to surrounding hard and soft tissues or present systemic effects? On this basis alone, some authors go to the extent of not recommending implantoplasty for the treatment of peri-implantitis.¹

But what if implantoplasty was one of the most effective ways to treat peri-implantitis? What if, although coined a resective approach, it could be associated with new bone formation?

A systematic review and meta-analysis on implantoplasty was recently published based on an assessment of 94 studies, eight of which were included and seven of which used for quantitative analysis.² It concluded that implantoplasty reduces inflammation, probing depth and leads to a high percentage of implant success (94.7%) 24 months after the procedure. Due to these findings, the authors recommend implantoplasty as a potential treatment for peri-implantitis.

In the clinic, after trying several approaches, we have been using implantoplasty for the last seven years.

Our preliminary results, presented at the 2019 Lisbon EAO meeting, were in accordance with previous reports.³⁻¹¹ Interestingly, to best observe and monitor the bone reaction to the procedure, we decided never to add graft material or use membranes, even when the defect morphology was favorable (3 to 4 walls) and "calling" for a graft. Surprisingly good clinical results were often observed (See Fig. 1 to 6).

It is standard to distinguish between resective and regenerative treatment techniques. The latter implies the use of graft materials that are, in most cases, radio opaque. Therefore, assessing bone regeneration is difficult causing several authors to question results presented in published studies.^{12,13} Meanwhile, we continue to notice that resective techniques like implantoplasty can promote

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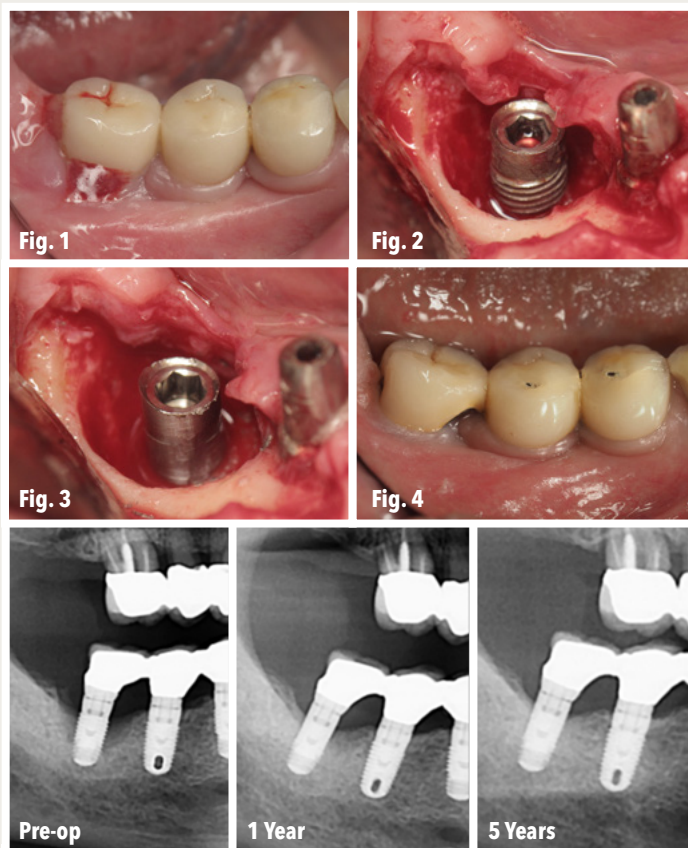


Fig. 1, 2 and Pre-op: Patient wishes to retain distal implant (removal was suggested).

Fig. 3: Implantoplasty was performed with a carbide bur (fluted, cylindrical, round-end). Neither graft material nor membranes were used.

Fig. 4: Clinical situation after 5 years
Radiographs: Preop, 1- and 5-year results
* Images were not modified or enhanced.

ACADEMY OF OSSEOINTEGRATION

Hands-on Training Course

Implant Therapy 1, 2, 3

September 30, 2022

Chicago, Illinois



Dr. Hom-Lay Wang

Join Hom-Lay Wang, DDS, MSD, PhD, for this hands-on course designed to help dentists understand the importance of implant therapy and how to incorporate it into their daily practices.

This course combines a half-day didactic lecture with a half-day hands-on workshop to cover a variety of implant related procedures, including fabricating simple surgical guides, performing implant placement, and conducting simple bone augmentation.

It will familiarize participants with every aspect of implant treatment including: when to extract or save a tooth; bone volume and quality assessment; indications and contraindications; diagnosis; prognosis; and treatment planning (esthetic, surgical insertion and simple bone augmentation). After completion of this one-day course, the participant should be able to:

- Incorporate implant therapy into their daily practice;
- Identify implant instrumentation and materials;
- Describe step-by-step surgical sequence and clinical tips associated with implant placement; and
- Demonstrate how to perform simple bone augmentation during implant placement.

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Incorporating evidence-based decisions into your practice

Christopher Richardson, DDS, MS, Academy News Guest Contributor

Dentists have long been fans of data and it is crucial to comprehend that these data sets may present themselves in very different formats.

Two terms that come to mind are empirical data and evidence-based data. Although both can be influential, Empirical data comes from observation and, most often, personal experience. In the arena of clinical decisions, it is not important that I was lucky once, but instead, it is extremely essential that I can be predictable and successful repeatedly. Evidence-based data is derived from clinical or bench top trials that can produce results which can be replicated, are definable, and for the surgical and restorative dental community, should significantly impact our decisions regarding diagnosis, treatment planning, execution of the plan, and long-term results.

In the world we live in, many times empirical data can seemingly have a greater influence than even the highest level of evidence-based data, human randomized controlled and blinded clinical trials (with re-entry and histology if you want to get deep into the weeds). The etiology behind this is the perceived authority of social media. Today, we see dentistry on Instagram and Facebook, and the number of "thumbs up" and "likes" can be astounding. Not to disenfranchise this form of communication and discussion, because I do believe it can help clinicians have an open mind to what might work well as different approaches to the delivery of care evolve, but does this meet the criteria of an evidence-based approach to therapy? The ultimate answer is: "No."

The American Academy of Periodontology (AAP) and the Academy of Osseointegration (AO) promote utilizing the existing and ongoing dental research in peer-reviewed publications such as the *Journal of Periodontology*, *Clinical Advances in Periodontics*, the *International Journal of Periodontics and Restorative Dentistry*, and the *International*

Journal of Oral & Maxillofacial Implants. The importance of private practice based clinical trials, academic laboratory and patient research, as well as expert summits

cannot be overstated. As a reviewer, I can assure you that manuscripts accepted to these journals survive a rigorous review process prior to publication. This year, AAP is in the process of completing a Best Evidence Consensus Conference on the utilization of Biologic Mediators and the AO Summit will focus on topics such as Flapless and Guided Surgery, Ceramic Implants, and the Implant-Abutment Connection.

Sifting through the mountain of evidence can be a daunting task, and many times, there is a significant body of evidence on both sides of a particular fence. Having the ability to discern data which is accumulated via a scientific route, versus that which is presented as "It works in my hands," is critical to leading our patients down a predictable and calculated pathway of care.

Evidence-based data is where I believe we want to hang our hat when we pick up a high speed handpiece, a 15 blade, or in the selection of surgical products, implants, or prosthetic components. Incorporating evidence-based decisions into your practice will certainly make treatment and outcomes more biologically predictable, functionally comfortable, longer lasting, and will result in a 'thumbs up' and "like" from your patients and referring colleagues, both of which are a significant determinant of success!

Dr. Richardson is a Diplomate of the American Board of Periodontology, AO member and current president of the American Academy of Periodontology.



Dr. Christopher Richardson

Implantoplasty (continued from page 16)

bone repair even when graft materials or membranes are not used. Between regenerative techniques that are difficult to evaluate and resective techniques that can show some degree of regeneration, we may have to refine our classification of treatment modalities.

In the meantime, we clinicians must continue making therapeutic decisions. Those considering implantoplasty to treat peri-implantitis should remember our treatment objectives when we treat periodontitis: When calculus

is present, do we carefully decontaminate it or do we remove it and create a clean smooth root surface? What if implantoplasty was just implant root planing?

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





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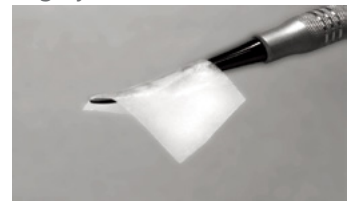
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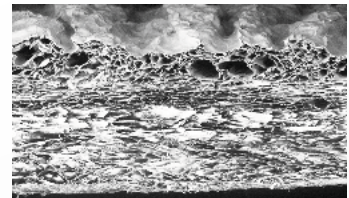
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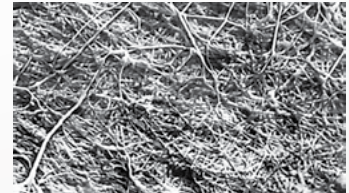
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AO Summit to review best scientific evidence for issues relating to implant materials, prosthodontics and surgery

By Joerg Neugebauer, DDS, PhD, Academy News Guest Contributor, Co-Director, 2022 AO Summit, and AO Vice-president

As the premier international organization in the field of implant dentistry, the Academy of Osseointegration (AO) is committed to maintaining its long-term leadership to support the highest standard of patient care, research and education.

Following this mission, the 2022 AO Summit, entitled "Controversial Trends or Long-term Results for Individual Patient Outcome," will convene this summer in Oak Brook, Illinois to evaluate selected topics in implant dentistry. The invitation-only event is expected to attract more than 50 AO members across dental disciplines, and representatives from other professional member dental organizations.

With the leadership of **Clark M. Stanford**, DDS, PhD, MHA, and myself, the Academy has assembled an international expert panel to share their knowledge and expertise in three working groups to evaluate long-term results for individual patient outcomes in flapless and guided surgery, ceramic implants, and abutment or superstructure connections.

"Ceramic implants have been in use for decades, especially in Europe. Due to the weak material properties of the first designs, long-lasting results are rare. Various improvements are in clinical use now and show better results," said Dr. Neugebauer. "Still, a large number of concerns are raised. For the dream of a white and metal free restoration a detailed evaluation of the scientific knowledge is necessary to give the right guideline for a successful treatment."

The panel includes Drs. **Tara L. Aghaloo**, **Markus B. Blatz**, **Steven E. Eckert**, **Mehrdad Favagehi**, **Joseph P. Fiorellini**, **Turkyilmaz Ilser**, **E. Dwayne Karateew**, **Todd R. Schoenbaum**, **Michael R. Norton**, and **Burak Yilmaz**. Academy staff, directors from the Osseointegration Foundation, and graduate students from major universities are also supporting the panel groups.

The Summit guidelines will provide the support information for each level of competence for dental implant providers. Absolute clinical restrictions and exceptions will be reviewed to ensure each provider the flexibility needed while providing individualized treatment options for their patients.

The 2022 AO Summit set up is based on a new framework for the outline of the PICO* question to allow for the same format for further consensus conferences. With this standard, a library for different relevant topics will be established.

"The AO Summit brings together world experts to debate critically important issues. As a prosthodontist, the role of the abutment-implant junction is key to long term success of the implant restoration and the ability to re-restore the implant(s) in the future since all restorations have a defined life span. Everything wears out, including us. It is what you can do with the worn 'parts' that becomes critical to future success," summed up Dr. Stanford.

AO events and CE calendar



June 21, Noon EDT

Live Webinar:

Aesthetic Complications in Implant Cases:
Before, During and After Treatment

Ueli Grunder, DMD

June 30, Noon EDT

Live Webinar:

Nerve Injuries with Dental Implant Placement

Michael Miloro, DMD, MD

July 14, Noon EDT

Live Webinar:

PASS Principle for Guided Bone Augmentation

Reis Cheng-Hsiang Hsu, BDS, MS

July 20, Noon EDT

Live Webinar:

Medication-related Osteonecrosis of the Jaw -
An Update

Oliver Ristow, MD, DDS

August 10 - 12

AO Summit:

**Controversial Trends or Long-term Results
for Individual Patient Outcome**

Oak Brook Hills Resort and Conference Center

September 15, Noon EDT

Live Webinar: Digital Implant Workflow

Rand Harlow, DDS

September 30

**Hands-on Training Course:
Implant Therapy 1, 2, 3**

Chicago, IL

The Academy's comprehensive live webinar series and e-Learning Center are highly valued benefits of your membership. Complimentary to members, all webinars are recorded and available for CE credit, now for up to one year following the live presentation (previously 90 days). AO's e-Learning Center currently holds more than 100 recorded presentations, including webinars, as well as past Annual Meeting presentations. To register or view the Academy's archive, please see the Online Learning Center on osseo.org.

Practical steps to avoid implant-abutment screw loosening

By Chandur Wadhvani, DDS, BDS, MSD, Academy News Guest Contributor

While dental implants have evolved over the last six decades, clinicians are still dealing with some of the same problems noted years ago. One such issue is the incidence of implant-abutment (IA) screw loosening, with a reported incidence of 7-12% over a five year period for single implant restorations.

Although dentists are familiar with screw tightening processes, they are not trained engineers and have not been taught the most important factors that control the process.

Instrumentation: A recent survey reported that only 6% of clinicians have ever calibrated their torque wrench, an essential instrument for achieving the optimal torque required to clamp the IA joint. Understanding that torque devices (mechanical and electrical) have potential issues is important. It has been shown that speed of use and viewing angle affect torque wrench output, which can result in over- or under-torquing of the screw. Too low a torque value is as detrimental to the IA joint as a torque that is too high. A high torque value is especially susceptible to cyclic chewing forces that load the joint laterally.

Tightening: Another factor contributing to the risk of screw-loosening is a lack of understanding of the screw tightening process. There are multiple "dental" theories on how to effectively tighten the screw. One commonly taught procedure is to tighten the screw to target torque, wait 10 minutes, then re-tighten to the target torque. In-vitro studies have shown that waiting between tightening events has no effect on reverse torque or preload, whether one retightens immediately, after 10 minutes, or two weeks. It appears the only effect may be poor use of valuable clinical time. What is likely most important is how many times the screw is tightened.

Materials: Current research is evaluating how screw materials and surface coatings interact and affect screw tightening procedures. Some screws are 23kt gold coated, which helps to dry lubricate the screw, thereby increasing preload for a given target torque. If the screw is tightened to target torque, slightly unscrewed, tightened to target torque, again unscrewed, and finally tightened to target torque the highest reverse torque is achieved (synonymous with preload). Gold has been shown to smear into the implant screw threads and help with "locking" the screw in place. When using anodized titanium alloy screws, there appears to be no advantage in tightening the screw more than once. Diamond Like Coating (DLC), which helps dry lubricate the screw threads, should be tightened twice, again with no time wait.



Tightening protocols can vary based on the base titanium alloy and coatings used for the screws.

The time over which screw loosening occurs is also significant and is most likely due to occlusal forces on the implant restoration. We know the occlusal forces on newly restored implant restorations increase over the first month. With the movement of teeth due to continued dentofacial

growth throughout life, wear and mesial drift, occlusal loading is dynamic and changes, both in magnitude and direction. This may be countered by using an orthodontic type of retainer at the completion of treatment.

What would also help us all, is if implant companies developing these materials would provide us with better instructions for use.

AO Master and Diplomate Certificates

The Academy of Osseointegration is launching its new credentialing program geared towards incentivizing practitioners to obtain more advanced education, training and experience in implant dentistry; promote high quality implant education globally; and enhance patient care through highly educated implant practitioners. The program awards both AO Master and Diplomate Certificates to applicants who meet the defined criteria.

Overview of AO Master and Diplomate Certificate Requirements

Applicants may prepare for **Surgical, Restorative or a combination of both Surgical and Restorative** Certificates in either the Master or Diplomate programs on their own. Courses qualifying for both certificates can be attained from domestic and international university centers, medical schools, hospitals and private practices accredited by the American Dental Association Continuing Education Recognition Program (ADA CERP), or other comparable accrediting organizations approved by the Academy of Osseointegration.

See reverse side for detailed requirements or snap this QR code to go directly to the Academy's website at osseointegration.org to find a comprehensive description of this program.



General Practitioners and those with Non-NCRDSCB credentials*

AO Master Certificate applicants must complete a required minimum number of didactic training hours involving restorative and/or surgical components. Applicants are required to document a minimum of 150 hours of CE and 20 hours of hands-on training. Applicants must also:

- Participate in 15 hours of AO online education, including webinars and on-demand sessions;
- Present three case studies; and
- Successfully pass a comprehensive one-hour online exam and a one-hour oral examination (oral examination will include implant cases selected from those already submitted by the candidate).

AO Diplomate Certificate requires a more rigorous program and comprehensive exam. Applicants must obtain and document a minimum of 300 hours of CE and 30 hours of hands-on training (surgical and/or restorative). Applicants must also:

- Participate in 25 hours of AO online education, including webinars and on-demand sessions;
- Present five case studies; and
- Successfully pass a comprehensive one-hour online exam and a two-hour oral examination (oral examination will include implant cases selected from those already submitted by the candidate).

Overview of AO Master and Diplomate Certificate Requirements

LEVEL	GENERAL PRACTITIONER REQUIREMENTS and those with Non-NCRDSCB credentials						
	CE	Hands-on CE	AO Online Education	Online Exam	Oral Exam	Cases Presented	Case Examples
Master *Surgical Track *Restorative Track *Combination - Surgical/Restorative Track	150	20	15	1 hour	1 hour	3	Master 3 cases - surgical or restorative, all representative of the chosen track. For the Combination track, 3 cases - any combination of surgical and restorative.
Diplomate *Surgical Track *Restorative Track *Combination - Surgical/Restorative Track	300	30	25	1 hour	2 hours	5	Diplomate Surgical specialty: 2 without grafting, 3 grafted with 2 multiple implants per arch; Prosthetic specialty: 2 single unit, 3 multiple either fixed or removable implant supported prostheses; GP or dual specialist: 1 without grafting, 1 grafted with multiple implants, 1 single unit restoration, 1 multiple implant restoration, and 1 implant supported overdenture or fixed partial denture.

*NCRDSCB: National Commission on Recognition of Dental Specialties and Certifying Boards is the ADA recognized authority on specialty boards.

Specialist Requirements

Periodontists, prosthodontists and oral maxillofacial surgeons applying for AO Master or Diplomate Certificates are not required to provide proof of CE. However, a copy of a certificate or confirmation letter from the University program is required as proof of the applicant's specialty certification.

Specialty applicants must:

- Verify their certification in periodontology, prosthodontics, or oral and maxillofacial surgery from a North American (US or Canada) CODA-approved university program;
- Present the required number of cases; and
- Successfully pass both the online and oral examinations as specified by the Master and Diplomate requirements.

LEVEL	SPECIALIST REQUIREMENTS (limited to Periodontists, Prosthodontists & Oral Maxillofacial Surgeons)			
	Online Examination	Oral Examination	Cases Presented	Case Examples
Master *Surgical Track *Restorative Track *Combination - Surgical/Restorative Track	1 hour	1 hour	3	Master 3 cases - surgical or restorative, all representative of the chosen track. For the Combination track, 3 cases - any combination of surgical and restorative.
Diplomate *Surgical Track *Restorative Track *Combination - Surgical/Restorative Track	1 hour	2 hours	5	Diplomate Surgical specialty: 2 without grafting, 3 grafted with 2 multiple implants per arch; Prosthetic specialty: 2 single unit, 3 multiple either fixed or removable implant supported prostheses; GP or dual specialist: 1 without grafting, 1 grafted with multiple implants, 1 single unit restoration, 1 multiple implant restoration, and 1 implant supported overdenture or fixed partial denture.

Osseointegration Foundation Student Travel Grants come back for 2022

Back from a hiatus since 2019, the Osseointegration Foundation (OF) was once again proud to award 21 dental students each with \$1,000 Student Travel Grants, providing them the opportunity to present their research at the Academy of Osseointegration's (AO) 2022 Annual Meeting.

As the philanthropic arm of AO, the OF provides Student Travel Grants as an opportunity to meet world renowned doctors in implant dentistry. Including those awarded for the 2022 Annual Meeting, OF has awarded 90 students with these grants since instituting this program in 2017.

Grants are allocated toward travel expenses related to attending the Academy's Annual Meeting, including helping to pay travel expenses such as airfare, hotel and ground transportation. This annual award is open to both AO student members and student non-members who submit an abstract for the meeting and are currently enrolled in a dental school program.

The winning students were selected for a travel grant after receiving the top scores of student-submitted oral research and ePoster abstracts for the 2022 Annual Meeting as reviewed by members of the AO Research Submissions and ePoster committees (scan the QR code below to see the full list of recipients and a group photo). One of the 21 recipients was **Michael Ha**, DDS, third-year periodontics resident at Virginia Commonwealth University, who provided the following experience:

Arriving at the conference, there was an air of excitement, eagerness and a bit of tiredness from delayed flights caused by a midwest winter storm. My exhaustion was easily dashed by the warm rays of the San Diego sun and complimentary coffee. As a third-year periodontics resident, I was lulled by the expectation for it to be a similar conference to the AAP and to more or less see the same presentations from familiar presenters.

It was such a joy to be proven wrong.

With the conference being centered around implants, there was excitingly broad insight through not only an interdisciplinary view but also through a multigenerational lens as well. On the first day, Drs. **Torsten Jemt**, **Daniel Buser**, and **Stephen Parel** offered a comprehensive view of implants no classic literature session could provide. I gained a larger picture of implants as a whole by learning the foundational wisdom of implants with 40-year post-operative cases to the bleeding edge future of artificial intelligence and biologics of implant surgery. This wealth of information has shifted my surgical and communication paradigms.

I've come to learn from my conversations through interviews during the meeting and networking activities the most valuable resource a resident has is their time dedicated to learning and the safety net to try new concepts under the direction of experienced faculty. Being

able to present my poster in a public forum allowed me to gain insight on how to further expand the discussion of my master's thesis as well from the new eyes.

Attending the conference as a senior resident was equally vital not only from an education standpoint but from a networking and business perspective as well. The Young Clinicians' social event allowed me to forge new relationships with future peers and rekindle old relationships with a mentor of mine that was recently inducted as a Fellow of the Academy. AO has broadened my idea of my role as a provider past my residency program and help me forge a path into interdisciplinary practitioner.

The greatest takeaway from this conference was the knowledge I've assimilated and being able to share what I learned with my co-residents. Long after the conference has ended, we continue to discuss the livestream recordings. I have no doubt this meeting is most impactful for graduating residents of any program placing and/or restoring implants. Overall, I enjoyed the close-knit size of the conference and I know that after this experience, I would like to join this community as a Fellow in the future. I feel extremely fortunate to be exposed to this community by my faculty, Dr. **Mehrdad Favagehi**, as an opportunity to broaden my education in the field of implant dentistry. As a resident on a budget, this trip would not have been possible without the OF student travel grant. Thank you AO!

For the full list of recipients and group photo, please scan the QR code.



Dr. Michael Ha (left) and
Dr. Mehrdad Favagehi

On implant surface designs

By Gerald Niznick, DMD, MSD, Academy News Guest Contributor

Dr. Daniel Buser's and Dr. Dennis Tarnow's articles in *Academy News*, Vol. 33, No. 1, 2022, advocated for a Hybrid Design (HD) implant surface, claiming it an important factor for avoiding peri-implantitis. A HD implant surface has a smooth neck with a rougher surface on the threaded portion. I agree with their prediction that a HD implant surface will be the prevailing implant design of the future, but I do not believe it is the only, or even the most critical, factor in preventing peri-implantitis.

The cause of peri-implantitis is multi-factorial. While peri-implantitis is related to bone loss, having a textured surface to the top of the implant has been proven to reduce bone recession.¹ Many popular, bone-level implants with well documented success rates do not have a HD surface. Straumann's tissue level implant has a smooth neck intended to be in the soft tissue with the textured surface extending down from the crest of the ridge.

Dr. Buser cites a Swedish 10-year study comparing three implants: Astra, Nobel Biocare and Straumann's Tissue Level implant claiming the latter exhibited significantly less peri-implantitis. Assuming part of the smooth neck of the Straumann TL implant was inserted in bone, which Dr. Buser seems to advocate, this would give it a hybrid

bone interface. It also adds the variable that the implant-abutment connection would be supra-crestal. I believe that the stability of the connection and its relationship to the crest of the ridge is at least as important a factor in minimizing peri-implantitis as a hybrid surface.

Historically, exposure of porous implant surfaces, such as TPS and TiUnite, has been recognized to contribute to soft-tissue complications. Straumann replaced TPS with SLA (Sand Blasted/Acid Etched) in 1998 and Nobel introduced TiUltra in 2019, positioning the porous TiUnite 2mm below a relatively smooth collar. Textured surfaces, as differentiated from porous surfaces, have proven successful in preserving crestal bone height when extended to the top of bone level implants.²

While it is clear that a textured surface is beneficial at the bone-implant interface and a smooth surface from an oral hygiene standpoint, is beneficial in the trans-mucosal area, the dilemma is that the crest of the ridge is often not flat and will recede from surgical trauma, especially if there is less than 1.5 mm of bone surrounding the implant at time of insertion.

To view Dr. Niznick's full response, please scan the QR code.



References

1. Zhang Q, Yue X. Marginal Bone Loss around Machined Smooth Neck Implants Compared to Rough Threaded Neck Implants: A Systematic Review and Meta-Analysis. *Journal of prosthodontics*. 2021;30(5):401-411. doi:10.1111/jopr.13333
2. Cavallaro JS Jr. Implant survival and radiographic analysis of proximal bone levels surrounding a contemporary dental implant. *Implant Dent*. 2011 Apr;20(2):146-56. doi: 10.1097/ID.0b013e31820fbc31. PMID: 21448024.

Editor's note: The views above reflect the opinion of the author. It's an example of issues raised in lively scientific debates during the 2022 AO Annual Meeting where various groups from North America and Europe presented a 40-year review of the past and made predictions about the future of implant design. In accordance with the theme of the Annual Meeting, we had asked Drs. Daniel Buser and Dennis Tarnow to write articles strictly focusing on implant surface designs from a historical aspect and make predictions about the future.



Dr. Gerald Niznick

Evidence Based Dentistry (EBD) not a substitute for clinical expertise

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

Academy of Osseointegration (AO) members take pride in their Academy as the world's premier evidence based multi-disciplinary organization dedicated to implant dentistry. However, a common misconception about Evidence Based Dentistry (EBD) is the false assumption that EBD is a substitute for clinical expertise.

This may be because we teach our students that in the hierarchy of scientific evidence, in comparison to systemic reviews and meta-analysis of randomized clinical trials, expert opinion holds the lowest scientific value. Some make the mistake of seeing this as a rejection of the expert by EBD. Rightly so, in the era of mail in orthodontic retainers, or expert-less 3D surgical guide manufacturing, experts are sensitive about any trend that may diminish their role.

It's true that a clinician's expert opinion may hold a lesser scientific value in scientific inquiry, but when it comes to actually treating patients, EBD concepts do not lessen the importance of clinical expertise. The buck stops with the clinicians, as they are responsible to take the leading role in patient care. In many clinical scenarios, we're expected to use our expert judgment to know when to try an off-label innovation and when to avoid risks by following well established evidence-based protocols.

In the most contemporary definition of Evidence Based Medicine: Clinical expertise is as important as the best research evidence or individualized patient needs and conditions.

In his eloquent article on page 14, Dr. **Michael R. Norton** explains how science can be used to remedy confirmational bias or "fake news." However, that doesn't mean that we should assume that there are no bias or errors in scientific investigations. Often, the knowledge acquired through our current scientific understanding is not absolute. Fake science is also a concern when unchecked commercial

interests sell us infomercials as replacement for scientific facts.

Even without commercial bias, designing a perfect scientific experiment is as rare as a perfect game in baseball or golf. The same could be said of systemic reviews.

Experts are needed at every step to conduct, review and debate systemic reviews to eliminate bias. With this expert driven approach to EBD, the Academy leads the way in the development of clinical guidelines in implant dentistry by conducting scientific summits.

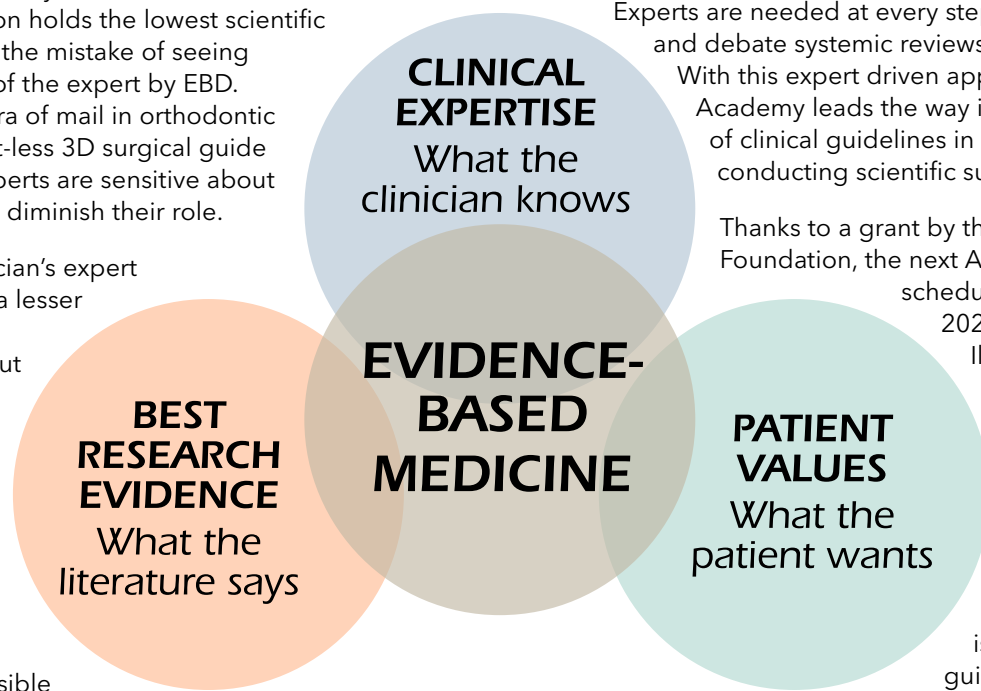
Thanks to a grant by the Osseointegration Foundation, the next AO scientific summit scheduled for August 2022 in the Chicago, Illinois suburb of Oak Brook will include an assembly of top experts from around the world to review and discuss systematic reviews about relevant clinical issues regarding guided surgery, abutment connections and ceramic implants.

AO members and implant experts around the world will benefit by having the latest evidence-based guidelines in implant dentistry that are based on systematic reviews conducted, analyzed, discussed and debated by the world's top experts. AO's approach to EBD is by experts and for experts as EBD is not a substitute for clinical expertise.

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.



Dr. Mehrdad Favagehi



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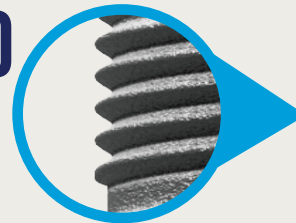
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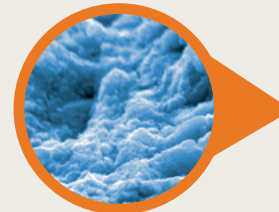
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Surface



Progressive Thread

