_c.e. article
The Virtual Facebow: A digital companion to implantology

_events
AO’s Annual Meeting to focus on ‘Real Problems, Real Solutions’

_industry
Simplicity without compromise: ASTRA TECH Implant System EV
**c.e. article**

04 The Virtual Facebow: A digital companion to implantology  
_Les Kalman, DDS

10 **events**

AO Annual Meeting in March to focus on ‘Real Problems, Real Solutions’  
_Academy of Osseointegration staff

14 **industry**

Flexible phosphor sensors: The perfect fit for digital implant radiography  
_Marvin A. Price, DDS

20 Simplicity without compromise: ASTRA TECH Implant System EV  
_DENTSPLY Implants staff

24 LAPIP protocol: Saving ailing implants  
_Allen S. Honigman, DDS, MS

28 Impladent’s OsteoGen and membranes allow for affordable socket grafting without primary closure  
_Impladent, Ltd., staff

30 BIOMET 3i launches the 3i T3  
_BIOMET 3i staff

**about the publisher**

32 _submissions
34 _imprint

**on the cover**

Cover image provided by DENTSPLY Implants

**implants**

North America Edition • Vol. 3 • Issue 1/2014

implants

02
Join the EVolution

The new ASTRA TECH Implant System™ EV
– now available

Learn more
www.joingheev.com

The foundation of this evolutionary step remains the unique ASTRA TECH Implant System BioManagement Complex, well-documented for its long-term marginal bone maintenance and esthetic results. www.dentsplyimplants.com
The Virtual Facebow

A digital companion to implantology

Abstract

The Virtual Facebow has been developed as an open-source tablet app that provides an alternative to the conventional facebow for the mounting of casts to an articulator.

The Virtual Facebow implements several design features to prevent and minimize errors, provide accurate mounting and reinforce the anatomical considerations associated with articulators. The Virtual Facebow is an effective, efficient and accessible digital companion to dental implant diagnoses and treatment planning.

Introduction

Prior to the delivery of dental treatment, carefully established diagnosis and treatment planning is required. This is particularly important with dental implant therapy.1

To assist the process, the mounting of a patient’s diagnostic casts remains an important step, as it allows the assessment of critical factors such as occlusion, implant position and forces direction.2 It also allows exploration into prosthetic options,3 such as angled abutments (Fig. 1).

To support proper mounting of patient casts, a
facebow, which aligns the maxilla to relative facial planes, can be utilized. Errors in the utilization of the facebow, or complete lack thereof, create critical errors in diagnoses and treatment planning that become magnified in the design and delivery of implant prosthetics.

The Virtual Facebow has been developed as a digital substitute to the analog facebow to address the shortcomings.

Background: Analog facebow

The facebow (Fig. 2) facilitates the mounting of the maxillary cast to the articulator. The Whip Mix Quick Mount facebow (Whip Mix, Louisville, Ky.) is composed of a caliper-type instrument that anchors into the ear canals and is balanced by the bridge of the nose.

A bite fork is utilized, embedded with polyvinyl-solixane, to register the position of the maxillary teeth. The bite fork is then transferred to an articulator, through the use of a transfer jig. The maxillary cast is positioned and mounted to the upper portion of the articulator.

The facebow is a largely omitted during the diagnosis and treatment-planning phase due to its shortcomings. It can prove tedious and uncomfortable for the patient, as the ear canal projections, bite fork and nose bridge can apply pressure and pain. The facebow can prove tedious and frustrating to the clinician, due to the subjective positioning and multiple adjustments.3,4,5 (Fig. 3).

If utilized incorrectly, the facebow can result in errors, which include
- facebow application
- assembly
- patient position
- verification
- in maxillary cast orientation
- in mandibular cast orientation
- occlusal relationship

Errors have direct impact on the assessment of inter-arch space, occlusal contacts and force direction (Figs. 1, 4). Errors will then affect the diagnosis, treatment plan, implant type, abutment angle and prosthesis.

If inaccurate mounting errors are not recognized early, the outcome may yield a compromised result, poor prosthesis (form and function), timely adjustments and a remake.

As with any compromised result, the ultimate consequence would include inefficient use of time, unnecessary costs, patient unhappiness, stress on...
To rectify these compounded issues, the Virtual Facebow app (VF) (Research Driven, Komoka, Ontario) was developed as a digital substitute for the analog facebow (Fig. 5).

Several safeguards were incorporated to minimize errors in positioning and orientation. The VF has been developed as an app that incorporates patient photos, alignment verification, anatomical relevance and confirmation of occlusion. The open source tablet app has been developed to be accessible through affordable tablet cost, affordable app cost and unlimited use.

Data can be readily shared, used on various devices, requires no specialized software, is simple to open and read and provides an easy-to-email option. The VF was designed to be efficient, effective, economical and educational. The VF's current...
requirements include: any supported tablet device with an Android operating system, a back-facing camera and a minimum system update of 4.0.3. The VF is currently available on the Google Play market.

Although the VF app has been designed to be used as a standalone substitute for the analog facebow, several peripherals have been developed to offer even more simplicity to the process. A patient positioner verifies patient orientation, a vertical tablet stand simplifies operation and an articulator mount positions the maxillary cast.

**Methodology: Case study**

The following is a step-by-step instruction on the VF utilization. Properly position the patient and confirm orientation. Place the tablet in the stand within 6-12 inches of the patient. Launch the VF app (Fig. 6).

Position the skull and reference markers over the patient’s image. Confirm alignment of tablet and markers and simply take a photo. Resize and reposition the patient photo if required and save the image. Verify orientation of midlines, incisal edges, occlusal planes and anatomical references by altering the transparency of either the skull or face image (Fig. 7). Clinically assess occlusal contacts (Fig. 8) and input via the touchscreen (Fig. 9). Clinical component has been completed.

**Laboratory**

If the clinician has delegated mounting to the laboratory, then the records phase has been completed. The following applies to those who mount their own casts. Position the tablet in the stand 6-12 inches from the cast and launch the VF app. Place the maxillary cast on the articulator mount (Fig. 10). The patient image will appear.

Adjust orientation of cast (tilt) to confirm alignment with the patient markers. Verify orientation of midline, incisal edges, occlusal plane and facial references (Fig. 11).

When the cast is correctly positioned, simply take a photo. Resize and reposition the image if required and save the image. Orientation can be confirmed by altering the transparency of either the
Mount the maxillary cast to the upper articulator. The record of occlusal contacts (Fig. 9) will then be displayed. Position the mandibular cast to the maxillary cast, confirming contacts, and mount the mandibular cast.

The VF will then generate a composite of the skull, face and cast. The operator has the ability to alter the transparency of any image to reconfirm the position of the skull to the patient’s face and, ultimately, to the cast (Fig. 12). The laboratory component has been completed (Fig. 13). A YouTube video demonstrates the process (Fig. 14).

The files are then saved on the hard drive as a series of PDFs and JPGs, both of manageable size. The user has the option of emailing either the complete series or individual images, in PDF or JPG, to any third party. The user has the ability to refer back to any image but cannot modify any of the images. A series of six screenshots document the VF process.

**Discussion**

The VF utilizes several proprietary design features that enable a tablet device to have the ability to record, confirm and reproduce the orientation of the maxilla to relative facial landmarks. This enables a simple, efficient and effective technique in the mounting of the maxillary cast to the articulator.

The VF also records the maxillo-mandibular relationship vital to correct mounting, enabling the accurate mounting of complex implant cases (Fig. 15). With exact mounting, the proper position and angulation of dental implants can be achieved (Fig. 16).

A pilot study was recently performed at the Schulich School of Medicine & Dentistry at Western University. Patients with restored dental implants were selected. A practitioner assessed the occlusion. Impressions and required records were taken, and casts were mounted.

One dental student utilized the analogue facebow, the other the virtual facebow. Mounting was assessed in terms of: cast position (anterior-posterior and lateral), quantity of occlusal contacts, required clinical, laboratory and total time and cost. Preliminary analysis suggests that the VF is more accurate, efficient and cost-effective. Data will be presented in the near future.

The use of cone-beam computer tomography remains the gold standard of dental implant treatment planning. However, many clinicians have barriers to the technology either from limited finances, physical access or intimidation. Many implant cases are planned and delivered with little to no clinical records, other than final impressions. The Virtual Facebow provides a digital companion that is accessible, affordable and understandable.

**Conclusion**

The Virtual Facebow is an open-source tablet app that not only facilitates the mounting of the maxillary cast but offers a record of occlusion. The VF also reinforces the anatomical basis of articulator mounting and supports clinical records through patient photographs.

The VF provides the clinician with a digital alternative to the analog facebow. Although evaluated through a pilot study, a larger research project would provide further validation.

By reducing errors in the diagnosis and treatment phases of implantology, the VF hopes to...
prevent and minimize errors incurred through incorrect mounting. Dental implant therapy can then be planned and delivered with the affirmation that mounting has not faulted the process of treatment delivery.

References


about the author

Les Kalman, DDS, graduated from the University of Western Ontario with a doctor of dental surgery degree in 1999. He then completed a GPR at the London Health Sciences Centre. He has been involved in general dentistry within private practice since 2000. He has served as the chief of dentistry at the Strathroy-Middlesex General Hospital. In 2011, he transitioned to full-time academics as an assistant professor at the Schulich School of Medicine and Dentistry. Kalman is also the coordinator of the Dental Outreach Community Services (DOCS) program, which provides free dentistry within the community.

Kalman has authored articles on subjects ranging from pediatric impression to immediate implant surgery in both Canadian and U.S. journals. He has been a product evaluator for several companies, including GC America and Clinician’s Choice. Kalman is the co-owner of Research Driven Inc., a company that deals with intellectual property development. His most recent dental product invention has been featured on the W Network’s “Backyard Inventors” television series.

Kalman is a member of the American Society for Forensic Odontology, International Team for Implantology, Academy of Osseointegration, American Academy of Implant Dentistry and the International Congress of Oral Implantology, where he has been recognized with diplomat distinction. He can be contacted at (519) 661-2111, ext. 86097, or via email to lkalman@uwo.ca.

‘The Virtual Facebow is an open-source tablet app that not only facilitates the mounting of the maxillary cast but offers a record of occlusion.’
It has been decades since root-form titanium implants were first introduced, and specialists and generalists now find themselves faced with unique problems in caring for patients who have had implants for 20 to 30 years. Since any problems are rare, most of the science and literature available today doesn’t effectively address how to diagnose, treat and prevent these issues.

The theme of the Academy of Osseointegration’s (AO’s) 29th Annual Meeting, “Real Problems, Real Solutions,” grew from that challenge, said Stephen L. Wheeler, DDS, president of the AO. The meeting, which takes place March 6–8 in Seattle, will focus on evaluating those concerns while also providing timely information on the most important research and innovations in the field.

“The Scientific Program Planning Committee has assembled another impressive lineup of speakers to share their experience and expertise in the diagnosis, treatment, and use of the latest techniques and technologies to correct these problems and prevent future complications,” Wheeler said.

Implants that last a lifetime

The AO — which has more than 6,000 members from 70 countries — is a nexus where specialists and generalists come together to advance the vision of implant dentistry by sharing best practices and coordinating optimal patient care. The meeting’s programming reflects that guiding principle.

“The AO provides the valuable tools and qualifications needed to succeed with implant dentistry,” Wheeler said. “The ‘Real Problems, Real Solutions’ theme of this year’s meeting is critically important to all dental implant practitioners — whether a specialist or general dentist, and whether they are actively placing and/or restoring dental implants or just getting started.”

As implant dentistry has become a standard of care today, he says, all professionals in the field will have to be able to competently address any issues that present to their practices, and treat or refer them as necessary.

This year’s Scientific Program Chair Lyndon F. Cooper, DDS, PhD, says: “We are putting the focus on how to make implants last a lifetime. Think of it like the maintenance you do to keep a car running well. Even the most expensive car needs an oil change, a tune-up and new tires.”

Something for every attendee

Each year, the AO Annual Meeting continues the tradition of promoting professional excellence and fellowship, with AO members and nonmembers
You’re covered by one of the best warranties ever!

**INCLUSIVE** Custom Abutment Warranty

With Inclusive, your entire restoration is covered for 20 years including the implant, the Inclusive custom abutment AND the final crown. Even if you’ve used another company’s implant, we’ve got you covered with a free Inclusive Tapered Implant.

**BruxZir® over Inclusive® Custom Abutment**
$413*
all model work, labor, parts and screws included
$353** from digital file

**BruxZir or IPS e.max® Screw-Retained Crown**
$299*
all model work, labor, parts and screws included
$259** from digital file

Before

Occlusal view of a patient’s two missing bicuspids (#4 & #5).

Occlusal view of BruxZir screw-retained crowns in place.

Occlusal view of BruxZir crowns with access holes sealed with composite resin.

Clinical dentistry by Perry E. Jones, DDS, MAGD

**INCLUSIVE** Custom Abutments are compatible with:

- Bionet 3i Certain#
- CAVLOG® SCREW-LINE®
- DENTSPLY Imparts#
- Inclusive Tapered Implant System
- Keystone Dental PrimaConnex®
- Necess#
- Nobel Biocare Bränemark System®, NobelActive® and NobelReplace®
- Straumann® Bone Level#
- Zimmer Dental® Screw-Vent®

Inclusive All-Zirconia Custom Abutments are only compatible with Bionet 3i Certain, Inclusive Tapered, Nobel Biocare NobelReplace and Zimmer Dental Screw-Vent.

*Price is per unit and does not include $14 round-trip overnight shipping or applicable taxes. **Price is per unit and does not include $7 one-way overnight shipping or applicable taxes. Inclusive Scanning Abutments are needed for digital restorations and can be purchased from Glidewell Direct. BruxZir is a registered trademark of Glidewell Laboratories.

For more information
888-786-2177
www.glidewelldental.com

GLIDEWELL LABORATORIES
Premium Products – Outstanding Value
coming together to take part in educational symposia, networking and social events. This meeting offers something for every attendee interested in gaining cutting-edge, evidence-based insights and continuing education from the world’s most noted researchers and clinicians in the field.

In addition, the exhibit hall — which is open all three days of the meeting — features one of the largest collections of leading manufacturers and suppliers of dental products in the field. On March 6, immediately following the opening symposium, a welcome reception will take place in the exhibit hall, and, on March 7, a special new product showcase will feature the latest innovations and technologies.

Meeting highlights

Thursday, March 6

• Corporate forum: This always popular session highlights the latest innovations from a collection of the industry’s leading corporations.
• Opening symposium: This symposium on “Strategies to Address Implant Retreatment — Dealing With the 25-Year Old Implant” will include presentations that address the unique circumstances surrounding retracting implants several years after initial placement. Topics will include crestal bone loss around titanium implants, peri-implantitis, the nature of complications and failures pertaining specifically to mature implants, and other high-interest talks by thought leaders in the field.
• Poster session

Friday, March 7

• Scientific/educational sessions: Friday’s program includes concurrent surgical and restorative tracks, limited attendance lectures (be sure to register early!), sessions on innovative treatment approaches and clinical innovations, and oral abstract research presentations and a poster session.
• International symposium: For the first time this year, the AO will host an international symposium dedicated to a single country. Highly regarded dental implant thought leaders from Japan will address a wide variety of topics, with simultaneous Japanese to English translation.
• President’s reception: All attendees are invited to the President’s Reception at Seattle’s Museum of Flight on Friday evening.

Saturday, March 8

• Problem solvers and innovators: These sessions take a close look at common practice challenges and innovative solutions.
• Allied staff and laboratory technician programs: These all-day programs address clinical and practice management advancements and concerns of the implant coordinating teams and laboratory technicians. Support teams also have access to the exhibit hall.
• Lunch and learn session: These sessions offer an opportunity to interact in small groups with leading experts in the field.
• Closing symposium: In this symposium focusing on “Our Better Future,” experts will present on current and advancing technology in managing teeth and implants, such as advances in biotechnology, digital dentistry and materials selection and prosthetic design.

Once again this year, attendees will be able to download a free mobile app from the AO website at www.osseo.org that will include a complete listing of events and speakers and will allow them to organize a custom meeting itinerary and access related social media.

Wheeler is looking forward to the momentum that will be created by the annual meeting. He says: “This dynamic community will continue to work together to discover advancements that will carry us forward into the future, giving us the ability to provide more successful dental implant treatment and improve patient care.”

This year’s AO meeting — themed ‘Real Problems, Real Solutions,’ — includes clinical poster presentations (shown here), scientific and educational sessions with separate surgical and restorative tracks and much more.
“The new LODI System offers us a good alternative to o-ball attachments when the use of a narrow diameter implant is desired. I also like the LODI Surgical Kit. It has nifty snap-on Drill Stops and a Torque Wrench that tops out at 70Ncm, which assists in determining the level of primary stability.”

Steven H. Pratt, DDS, FAGD, FAIAD

“I have placed more than 50 LOCATOR Overdenture Implants and this system is exactly what I have been looking for. It is easy to use with graduating drill diameters and multiple length drill stops, as well as paralleling pins for alignment. My patients are very happy with their treatment and I am happy to no longer hear them complain that they can lift their lower denture out with their tongue like I consistently heard with o-ball mini systems.”

James G. Jenkins, DMD

“I originally tried the LOCATOR Overdenture Implant System because I didn’t have enough vertical room with the system I’ve been using. This implant from ZEST Anchors is perfect for these situations. I’m sure I’ll continue to use this implant system.”

Joseph A. DeLapa, DDS

YOUR COLLEAGUES LOVE IT.
SO WILL YOU.

The LOCATOR® Overdenture Implant (LODI) System.

You and your overdenture patients have grown to love the unique benefits LOCATOR Attachments offer. Until now, when treatment called for a narrow implant, you were left with no choice other than inferior o-ball attachments and o-rings requiring constant replacement. Not any longer; the LODI System offers the best alternative to o-ball mini implants on the market today. These narrow diameter implants are thoughtfully designed with easy to use surgical instrumentation. LODI offers all of the benefits of LOCATOR that you have become accustomed to such as the patented pivot technology, low vertical height and options for retention levels.

Your colleagues are recognizing the benefits of LODI in their practice, isn’t it time that you did? Start by trying LODI today, please visit www.zestanchors.com/lodi/30, or call 855.868.LODI (5634).

Courses to learn about the LOCATOR Overdenture Implant System are now available! Please visit www.zestanchors.com to view course locations.
In the 31 years since I began practice, there have been few developments in the field of dentistry as profound as the growth of dental implants. Implants represent a high and growing percentage of the surgeries I perform, and it is truly gratifying to observe what a dramatic impact these procedures can have on the quality of life and self-esteem of my patients. It is also gratifying to be able to perform surgical implant procedures more effectively and efficiently than ever before, and the reason for this is my use of digital radiography.

I had used only film radiography throughout my career, but in 2009, as more and more insurance companies had stopped returning our film images, I decided it was time to “go digital.” I began using a PSP system, now more commonly referred to as a flexible phosphor sensor system. The system was the ScanX® Classic manufactured by Air Techniques.

I realized that many dentists had made rigid sensors their digital radiography option of choice, but this option never made sense to me. After researching the two main digital options by reading everything I could and talking to users of both technologies, I emerged with numerous concerns about rigid sensors. One is that the rigid sensor wires can be cumbersome and overly restrictive. I also feared that rigid sensors would be uncomfortable for many of my patients, particularly those with small mouths, large tori and gag reflexes.

Other concerns were the high cost of both purchasing and insuring rigid sensors, and the fact that my staff and I would need to learn a different chairside workflow and placement technique. A final concern I had was that rigid sensors often are unable to capture the full apex in periapical images.

Meanwhile, my investigation of the flexible phosphor sensor option revealed none of these problems. Flexible phosphor sensors are wireless and much smaller, lighter, thinner and more flexible than rigid sensors.

As a result, they can be used very comfortably with any patient, which means you can capture 100 percent of the images you need. Moreover, most flexible phosphor sensors cost less than $40 each, can be re-used hundreds and even thousands of times, and require no costly insurance. In addition, they require
The Perfect Solution For Implant Radiography.

scan x swift

“Having ScanX Swift in the operatory allows me to do direct measurement right on the monitor and confirm the precise length needed for the implant.”

CONVENIENT CHAIRSIDE WORKFLOW
• Easy for your assistant; efficient for you.

EXCEPTIONAL DIAGNOSTIC CLARITY
• Up to 38% more image area—capture every root tip (even on maxillary canines).

UNMATCHED PATIENT COMFORT
• Flexible, cordless phosphor sensors for easy, comfortable placement, even for third molars.

EXCELLENT DIGITAL RADIOGRAPHY
• Get 100% of the images you want, even for patients with small mouths, large tori, or gag reflexes.

SMART INVESTMENT
• Less expensive than rigid sensors (and no insurance needed).

scan x swift
Digital Imaging Without Limits

To order please contact your local dental dealer.
For more information, visit www.airtechniques.com

*An independent, non-profit, dental education and product testing foundation: Issue 9, September 2011
ICOI Summer Implant Prosthetic Symposium

CHICAGO, Illinois
August 21-23, 2014
Hyatt Regency McCormick Place Hotel and Convention Center

The theme for this meeting will be “Implant Failures”
Pre-Symposium Courses: Thursday Morning, August 21, 2014
Train your team with our 2½ day Auxiliary Program with certifications

For more information contact the ICOI Central Office at (973) 783-6300 or visit our website at www.icoi.org
virtually no learning curve for practices transitioning from film, as the workflow and placement technique are identical.

Importantly, flexible phosphor sensors have a larger image area than rigid sensors. This is particularly crucial when taking radiographs for implants, as we need to see the entire apex because it shows the leading edge of where we are going with the implant. Because of this larger image area, I cannot recall ever having to do a re-take in the four and a half years I have been using flexible phosphor sensors.

Both rigid sensors and flexible phosphor sensors process images in a fraction of the time it takes with film, which is a great benefit. In theory, rigid sensors are the faster of the two digital options because they are wired directly to the operatory computer but, in practice, this advantage often disappears due to the need for retakes resulting from either the smaller image area or the difficulty of placing the sensors in patients’ mouths.

Flexible phosphor sensors deliver one particular advantage over film that I had not fully anticipated: an array of enhanced diagnostic tools. Being able to adjust the contrast, reverse images, colorize and switch to 3-D mode significantly strengthens my treatment planning. Just as important, these features also allow me to interact more meaningfully with my patients and to help them understand the problems we are treating. This creates what I call a “Voila!” effect, as my patients are generally quite impressed when I show them these images.

Other meaningful advantages of digital radiography over film include the absence of the need to purchase and store costly chemicals, the fact that your staff no longer has to do the messy job of maintaining a chemical processor and digital’s significantly more efficient image access and storage.

Recently, the advantages of using flexible phosphor sensors were expanded with the introduction of the ultra-compact ScanX Swift unit. With a roughly 9-by-9-inch footprint and a weight of just about 14 pounds, the Swift is ideal for chairside use. I have been using it for a few months now, and I have been very impressed with its image processing time of less than nine seconds. Having this unit in the operatory allows me to do direct measurement right on the monitor and confirm the precise length needed for the implant. It truly is the perfect fit for my practice.

If implants are an important part of your practice, I cannot imagine a more effective, efficient or affordable radiography solution than flexible phosphor sensors.

about the author

Marvin A. Price, DDS, is a periodontist with specialized training in regenerative therapies and implant dentistry. He earned his bachelor of arts degree from the University of Pennsylvania in 1976, graduated from New York University College of Dentistry in 1980 and completed an internship in general dentistry at Albert Einstein College of Medicine/Jacobi Hospital. Price then returned to NYUCD to complete the postgraduate specialty program in periodontics in 1983. He has been board certified by the American Board of Periodontology since April 1991. He is a member of the American Academy of Periodontology, American Board of Periodontology, American Dental Association, Northeastern Society of Periodontists, Long Island Academy of Periodontists and Nassau County Dental Society. Price has been assistant clinical professor of the Department of Periodontology and Implant Dentistry at SUNY of Stony Brook for more than 27 years. In 2009, Price was awarded the status of fellowship in the International Congress of Oral Implantologists.
A Legacy of Innovation

Legacy™4 Implant

All-in-1 Packaging includes implant, fixture-mount, abutment, transfer, cover screw & healing collar — $225 SBM, $250 HA surface

New

Torque-safety feature prevents damage to implant interface

Square top detaches with impression for metal to metal transfer accuracy

Two-Piece fixture-mount (patent pending) with preparable abutment

Concave transgingival profile matches with healing collar to shape soft tissue for improved esthetics

Legacy 4 – the culmination of 30 years of evolution
Introducing a revolutionary 2-piece fixture-mount/abutment that provides the accuracy of an open-tray transfer with the simplicity of a closed-tray transfer.

Square top detaches with impression, providing a snap attachment for abutment/analogue

The abutment portion of the fixture-mount snaps onto the transferred top for the accuracy of a metal-to-metal connection

Quadruple-lead micro-threads

Progressively deeper buttress threads

Three long cutting grooves

Legacy Direct

Implant Direct Simplicity Unmatched

Prices reflect list prices and are subject to change without notice. Implant Direct is not affiliated with any implant manufacturers. Images are for illustration purposes only.
Legacy™ 6mmL Implants
Short in Length, Long on Stability

Legacy™ 6mmL Advantages:
- Industry-Compatible Internal Hex Connection (Nanick US. Pat. #4,940,381)
  Provides a secure, anti-rotation implant-abutment junction
- More Choices
  Six widths (3.7, 4.2, 4.7, 5.2, 5.7 or 7.0mm)
  Two surface options (SBM or HA)
- Tapered Body with Double-Lead, Self-Tapping Threads
  Speeds insertion while enhancing initial stability
- Quadruple-Lead Micro-threads (Nanick US. Pat. #7,677,891)
  Reduces crestal bone loss
- Greater Surface Area
  Increases stability and load-bearing capacity
- All-in-1 Packaging
  Three Packaging Options - each with Cover Screw and 2mm Healing Collar
  Legacy2: $175 Fixture-mount is transfer and can be sectioned for use as temporary abutment
  Legacy3: $200 Fixture-mount is transfer and can be sectioned for use as final prepaachable abutment
  Legacy4: $225 2-Piece Fixture-mount is super-accurate transfer and final prepaachable abutment

Joining the Legacy Family for the Widest Range of Dimensional Options

www.implantdirect.com | 888-649-6425
Simplicity without compromise: ASTRA TECH Implant System EV

_DENTSPLY Implants is pleased to introduce the next step in the continuous evolution of the ASTRA TECH Implant System™.

The design philosophy of the ASTRA TECH Implant System EV is based on the natural dentition utilizing a site-specific, crown-down approach supported by an intuitive surgical protocol and a simple prosthetic workflow, for increased confidence and satisfaction for all members of the treatment team.

- Versatile implant designs including straight, conical, sloped*, short, narrow and wide, using only one surgical tray.
- Flexible drilling protocol allows for preferred primary stability.
- Restorative components including round and triangular options supporting soft-tissue sculpturing.
- Unique interface with one-position-only** placement for:
  - ATLANTIS® patient-specific abutments.
  - Self-guiding** impression components that require only one hand for precise seating.

Uncompromised results

The foundation of this evolutionary step remains the unique ASTRA TECH Implant System BioManagement Complex™, well-documented for its long-term marginal bone maintenance and esthetic results.

Many years of research, science and documentation have revealed that the marginal bone level around the ASTRA TECH Implant System is well maintained. In fact, the average marginal bone reduction is less than 0.3 millimeters† after the first year of loading. And that figure still remains after five years.

A site-specific, crown-down approach

The success of an implant treatment is defined not only by function but also by esthetics. With the desired end result in mind, the site-specific, crown-down approach of the ASTRA TECH Implant System EV helps ensure a successful outcome.

Fig. 1. Versatile implant assortment. (Photos/Provided by DENTSPLY Implants)

Fig. 2. The Flexible drilling protocol allows for the preferred primary stability to be achieved.
Bone Grafts

OsteoGen®
Physicochemically & Crystallographically similar to human trabecular bone*

OsteoTape®
Human Bone Allografts

Membranes
CollaForm® Plugs
CollaForm® Singles
OsteoMend® XTD

Screw Kits
MiniPlate™

Grafts as low as $21 per cc

Order online at www.impladentltd.com or call (800) 526-9343

Multiple considerations are required for each individual tooth; the support needed for the final restoration in the particular position, soft-tissue healing, and implant design and size. In addition to the versatile implant assortment, corresponding restorative components are designed for optimized soft-tissue management and long-term function and esthetics, including:

- Round and triangular options for capturing the sculptured soft tissue
- Innovative interface providing one-position-only** placement of ATLANTIS patient-specific abutments

_Surgical simplicity and flexibility_

- **Versatile implant assortment**: The ASTRA TECH Implant System EV consists of a unique range of OsseoSpeed EV implants (Fig. 1), including solutions for:
  - Limited vertical bone height
  - Narrow and wide horizontal spaces
  - Sloped ridge situations*

  This allows for easy and efficient management of different challenges as they arise, including:
  - One- and two-stage surgery
  - Immediate and early restoration

- **Flexible drilling protocol that allows for preferred primary stability**: The drilling procedure is made easy by using color-coding and a simple numbering system. The options within the drilling protocol help ensure proper preparation of the marginal bone and allow for the preferred level of primary stability to be achieved (Fig. 2).

  The protocol includes the flexibility of a wider osteotomy preparation apically or along the entire osteotomy, as needed.

  The Step Drill design provides tactile control and guidance. The excellent cutting properties ensure efficient site preparation.

- **One surgical tray — three overlay options**: The surgical tray design with three interchangeable overlays** allows for adaption of tray content according to your clinical preferences. The color-coded tray has an intuitive layout for ease of use, effective handling throughout the surgical procedure and accurate communication among the surgical team. In addition, the grommet-free tray design simplifies the cleaning process.

_Restorative ease_

- **Solutions for all restorative needs**: The ASTRA TECH Implant System EV includes an extensive restorative assortment including patient-specific and a wide range of pre-fabricated abutments. Based on the site-specific, crown-down approach, these components are designed to help support all clinical situations and soft-tissue sculpturing requirements for final restorations. These solutions are also available in a choice of materials to support the planned final restoration and esthetic demand.

- **One system — one torque**: All final abutments are designed for one tightening torque value of 25 Ncm for simplicity. In addition, each abutment screw is optimally designed to ensure correct preload and a stable screw joint over time.

- **One interface — three indexing solutions**: The ASTRA TECH Implant System EV offers a unique interface with one-position-only** for ATLANTIS patient-specific abutments (Fig. 3). The interface design also allows for the flexibility of six-position indexing of pre-fabricated abutments, while index-free abutments can be seated in any position.

- **Self-guiding** impression components: Self-guiding impression components require only one hand for precise seating (Fig. 4). When tightening the screw, the component rotates into position and engages into the implant only when correctly seated. This innovative design provides a predictable and time-efficient installation procedure. In addition, the Implant Pick-up Design EV is available for capturing individualized, sculptured soft-tissue shapes._

† Data on file
* OsseoSpeed Profile EV is not yet available
** Patent pending
DENTAL IMAGING MADE EASIER

PreXion3D Eclipse includes the Prexion3D Viewer software

- Diagnose patients with more detail and clarity
- Present cases more confidently, increased acceptance
- Create the WOW factor with patients

Software Features

Multi-Data – PreXion Exclusive!
- Load multiple patient scans on a single screen
- Synchronize pre and post operative scans and detect differences, slice-by-slice

3D Video Clip Maker
- Quickly capture 3D animated video clips for patient education, case acceptance and lecture presentations
- Increase case acceptance through better patient understanding
LAPIP protocol:
Saving ailing implants

Author_Allen S. Honigman, DDS, MS

Up to 80 percent of dental implant patients experience complications due to inflammation, making the longevity of dental implants dependent on maintaining the healthy tissues around them. Several recent studies have found laser therapy a promising treatment of periodontal disease and now peri-implantitis.

Specifically, a pulsed Nd:YAG laser has been investigated and its efficacy determined for achieving bacterial ablation without damaging the surface properties of titanium implants. Another study found that the use of an Nd:YAG laser was able to totally reduce contamination on irradiated implants. Combined, this research suggests that the use of Nd:YAG lasers could be beneficial in treating patients with peri-implantitis.

The PerioLase® MVP-7, a pulsed Nd:YAG laser, is at the heart of the Laser Assisted Peri-Implantitis Procedure (LAPIP®) protocol that is based on the successful LANAP® protocol. LANAP surgery is an FDA-approved protocol that provides cementum-mediated new periodontal ligament attachment to root surfaces in the absence of long junctional epithelium.

It treats the periodontal pocket walls to remove diseased epithelium, then seals them with a laser-generated blood clot. The therapy results in greater...

(Photos/Provided by Allen S. Honigman, DDS, MS)
Let our new products tackle your toughest procedure.
implants

probing depth reduction and clinical probing attachment level gains, as well as inducing periodontal regeneration.5,6

The LAPIP technique is an implant-specific modification to the LANAP procedure. Both utilize an ablation step to remove inflamed sulcular tissue and decontaminate the root/implant surface, followed by a scaling step using an EMS piezo scaler. A laser-induced hemostasis step further decontaminates the tissue and causes the blood to clot, creating a closed system. This seals the area, preventing the downgrowth of the gingival epithelium and allowing the area to heal from the base of the defect coronally.

Case study

A 37-year-old female patient presented in June 2012 with an implant at the #3 site that had been placed three years ago. It had become infected two weeks earlier. The patient had seen another periodontist who recommended a surgical treatment approach with grafting.

Upon examination, suppuration was noted on palpation on the buccal aspect. Additionally, the tissue was very inflamed and the crown margin was subgingival. The implant was non-mobile. Vertical bone loss was noted at on the distal of #3 but was deeper on the mesial. The MP on #3 was > 13 mm. Probing depths on the buccal were, from mesial to distal: 6 mm, 10 mm, 7 mm; and from the palatal: 13 mm, 6 mm, 5 mm.

The LAPIP procedure was recommended because of the amount of inflammation and suppuration surrounding the implant. LAPIP was performed utilizing the PerioLase MVP-7 Nd:YAG laser at 75 J increments, with cooling in between to prevent overheating of the implant. The energy density was 14.5 J/mm. Additionally, the patient was placed on Amoxicillin (500) 4 stat, then 1 tab q 8 h until finished; Motrin (800) 1 tab q 8 h for three days, then prn pain; and chlorhexidine rinse: two times per day for 30 seconds.

The patient was checked at one week, three weeks, three months, seven and a half months, and 10 months postoperative, with occlusion checked at each appointment. Bone regeneration was noted on both the mesial and distal aspects. Probing depths taken at three months showed a significant decrease in pocket depths, with no suppuration or tissue loss.

Conclusion

The LAPIP procedure was chosen as a first line treatment in these cases based on the proven success of the LANAP protocol, which has been shown to decrease inflammation, the main priority when treating peri-implantitis. Because the therapy is non-invasive, it is a tissue sparing procedure and can regenerate bone, all with minimal tissue loss and trauma to the patient.

The results demonstrated a complete decrease in inflammation and regeneration of the bone, which should continue until an intact lamina dura is developed. If, however, the results were not what was anticipated, the LAPIP therapy allows for retreatment, using the use of traditional surgical peri-implantitis treatments or, in severe bone loss cases, implant removal. As a first line treatment, LAPIP gives practitioners more options for any retreatment in the long run than other surgical interventions.

References


About the author

Allen S. Honigman, DDS, MS, received his dental training at the University of Texas Health Science Center at San Antonio in 1991. He previously graduated with a bachelor of science degree in biochemistry from the University of Ottawa, an honorary diploma in genetics from the University of Western Ontario, as well as a master’s degree in microbiology and immunology from Idaho State University. Honigman completed his periodontics residency through UCLA and served as the pre-doctoral peri-oral director at CWRU from 1999-2001. He is an active member of AAP and a certified instructor with the Institute for Advanced Laser Dentistry since 2009.
“With the LAPIP protocol I can save ailing implants while maintaining gingival esthetics. I know it’s laser physics, but my patients think it’s magic.”
Impladent’s OsteoGen and membranes allow for affordable socket grafting without primary closure

Author: Impladent, Ltd., staff

Socket grafting without primary closure is now predictable in the esthetic zone for implant placement, with Impladent’s new CollaForm® Singles absorbable bovine collagen and OsteoGen® synthetic bioactive resorbable graft, which has been on the market for 26 years. OsteoGen is physicochemically and crystallographically similar to human trabecular bone.*

With the introduction of the "Tooth Extraction Kit," CollaForm Singles and OsteoGen, averaging $55 per extraction, socket preservation is cost-effective and a key principle for successful grafting restoration. CollaForm (12 mm by 20 mm by 3 mm thick) features handling advantages of being soft, non-sticky, exceptionally flexible and compressible in nature for ease of adaptability.

After tooth extraction or removal of any and all root fragments (Fig. 1A), debride and enucleate all fibrous tissue to the lamina dura (Fig. 1B). Medullary blood from the marrow works best for remodeling/modeling of new bone formation.

Perforate lamina dura anatomically correct and collect blood to mix with OsteoGen resorbable bone graft. Control bleeding.

Place a CollaForm Single wound dressing over the graft and crisscross suture. Take an X-ray after grafting to compare with X-ray after six months. Depending on the defect site, patient’s age or metabolism, an X-ray can be taken five or six months after surgery to show radiopaqueness as OsteoGen converts to new bone formation (Fig. 1D).

The mechanical properties of OsteoGen are less than trabecular bone and will not compromise the host bone chemically or mechanically, making it an ideal graft material for implant placement (Fig. 1E).

For more product information and promotional discounts, contact Impladent, Ltd., at (800) 526-343 or visit www.impladentltd.com._

Core I: Advanced Functional Dentistry –

The Power of Physiologic Based Dentistry

The Future of Dentistry Awaits You

The LVI Core I program encompasses the principles in physiologic restorative concepts creating excellence in care for your patients and prosperity for you. This program will start you on a path to greater understanding and enjoyment of our profession while creating loyal, enthusiastic and grateful patients!

This exciting three-day, hands-on program shows you how to evaluate cases and educate your patients for advanced restorative dentistry and more comprehensive case acceptance. For many of your patients you will learn how to eliminate a lifetime of pain that no other medical professional has been able to address, and for some learn how you can actually save their lives!

In essence, become a mouth doctor with ability to do things you never were taught in dental school. You have patients in your practice RIGHT NOW that can benefit from these concepts and you have the opportunity to change their lives starting the day you return to your office.

Dr. Bill Dickerson, Dr. Heidi Dickerson and Dr. Mark Duncan will present this information in a practical, easy to understand manner where you will feel comfortable presenting these exciting and practice building new options to your patients on Monday. Don’t miss this golden opportunity to find out about this incredible world of dentistry that awaits you!

Core I guarantee: We are so sure you will be satisfied with this course that we offer a money back guarantee!

“LVI has given me a new driving force in my career. It has recharged my enthusiasm for dentistry and made me realize that my career choice was not a mistake.”

—Dr. Charles Shin, Stouffville, ON

“I wish I would have attended LVI earlier in my career. I still have time to make a difference but this info is too valuable to not be used throughout an entire dental career.”

—Dr. Tim Sitemap, Algonquin, IL

“Not only did I learn what I didn’t know about dentistry, I learned how to help my own long history of pain in the head and neck. Thanks for the missing link.”

—Dr. Paul Bell, Denver, CO

TO REGISTER

Email Concierge@lviglobal.com or Call 888.584.3237
www.LVIglobal.com

Upcoming 2014 DATES

March 27-29 - Toronto
June 18-20 - LVI (Las Vegas)
October 1-3 - LVI (Las Vegas)
December 10-12 - LVI (Las Vegas)

Follow LVI TV for your weekly dental news @ youtube.com/user/lvitv

ADA CERP® Continuing Education Recognition Program

LVI Institute for Advanced Dental Studies, LVI Global, is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry. Concerns or complaints about a CE provider may be directed to the provider or to ADA CERP at www.ada.org/goto/cerp.
BIOMET 3i launches the 3i T3

Author: BIOMET 3i staff

BIOMET 3i, one of the world’s leading dental implant manufacturers, announced recently that it is launching its new 3i T3 Implant.

The 3i T3 Implant is a contemporary hybrid implant with a new multi-surface topography designed to deliver esthetic results through tissue preservation:

- **Coarse micron topography:** A resorbable media blasting process using calcium phosphate particles provides 10 micron features, which facilitate blood clot retention along the threaded body of the implant.1,2

- **Fine micron topography:** A dual acid-etching process provides a 1-to-3-micron peak-to-peak surface (OSSEOTITE®) that supports platelet activation.3,4 This surface overlays the coarse micron topography and is designed to mitigate the risk of peri-implantitis at the coronal aspect of the implant.5

- **Sub-micron topography:** The option exists for a more complex topography with the discrete crystalline deposition of calcium phosphate nanoparticles. This surface treatment has demonstrated increased integration throughout the early healing process, helping to facilitate Bone Bonding.6

- **Integrated platform switching:** BIOMET 3i Implants with integrated platform switching (3i T3 and PREVAIL® Implants) have smaller restorative platforms relative to the total implant platform. This medializes the implant-abutment junction inward, helping to maintain bone levels. Studies show that BIOMET 3i Implants with integrated platform switching demonstrated crestal bone loss as low as 0.37 mm.7

- **Certain® Internal Connection and the Gold-Tite® Screw:** The Certain Internal Connection in conjunction with the Gold-Tite Screw is designed to reduce microleakage through its exacting interface tolerances and maximized clamping forces.8 The Gold-Tite Screw design increases the clamping force by 113 percent versus non-coated screws, maximizing abutment stability. The Gold-Tite Surface lubricates and compresses to provide a tighter fit between implant components.9

For more information about BIOMET 3i, visit www.biomet3i.com or contact the company at (800) 342-5454; outside the United States, dial (561) 776-6700.

*Bone Bonding is the interlocking of the newly formed cement line matrix of bone with the implant surface.*

References are available upon request from the publisher.
THE LARGEST DENTAL MEETING IN CANADA

Palais des congrès de Montréal
MONTRÉAL CANADA
May 23rd to 27th 2014

FOR INFORMATION
www.odq.qc.ca

ANNUAL CONVENTION
ORDRE DES DENTISTES DU QUÉBEC
submissions
formatting requirements

Please note that all the textual elements of your submission:

- complete article
- figure captions
- literature list
- contact info (include email)
- author bio

must be combined into one Microsoft Word document. Please do not submit multiple files for each of these items. In addition, images (tables, charts, photographs, etc.) must not be embedded in the text document.

All images must be submitted separately, and details about how to do this appear below.

If you are interested in submitting a C.E. article, please contact us for additional instructions before you make your submission.

_Text length

Article lengths can vary greatly—from a mere 1,500 to 5,500 words—depending on the subject matter. Our approach is that if you need more or less words to do the topic justice, then please make the article as long or as short as necessary.

We can run an extra long article in multiple parts, but this is usually discussing a subject matter where each part can stand alone because it contains so much information. In addition, we do run multi-part series on various topics. In short, we do not want to limit you in terms of article length, so please use the word count above as a general guideline and if you have specific questions, please do not hesitate to contact us.

_Text formatting

Please use single spacing and do not put extra space between paragraphs. We also ask that you forgo any special formatting beyond the use of italics and boldface, and make sure that all text is left justified.

If you would like to emphasize certain words within the text, please only use italics (do not use underlining or a larger font size). Boldface should be reserved for article headlines, headers and subheads please.

Please do not “center” text on the page, add special tab stops or use underlines in your text as all of this must be removed manually before layout. If you require a special layout, please let the word processing program you are using help you to do this formatting automatically rather than doing it manually.

If you need to make a list or add footnotes or endnotes, please let the word processing program do it for you automatically.

There are menus in every program that will help you apply all sorts of special formatting.

_Image requirements

Please number images consecutively by using a new number for each image. If it is imperative that certain images are grouped together, then use lowercase letters to designate the images in a group (i.e., Fig. 2a, Fig. 2b, Fig. 2c).

Insert figure references in your article wherever they are appropriate, whether that is in the middle or end of a sentence, but before the period rather than after. Our preference is to have figure references noted in the appropriate place within the text as it helps the readers to orient themselves when moving through the article. In addition, please note:

- We require images in TIF or JPEG format
- These images must be no smaller than 4 x 4 inches in size at 300 DPI
- Images should be 1 MB in size each

If you have an image that is greater than 1 MB, please do not bother “sizing it down” to meet our requirements, but send us the largest file size available. The larger the starting image is in terms of bytes, the more leeway the designer has in terms of resizing the image to fill up more space should there be room available.

Also, please remember that you should not embed the images into the body of the text document you submit. Images must be submitted separately from the textual submission.

You may submit images through a zipped file via email, unzipped individual files via email or post a CD containing your images directly to us (please contact us for the mailing address as this will depend upon where you will be mailing them from).

Please do not forget to send us a head shot photo of yourself that also fits the image requirements noted above so that it can be printed along with your article.

_Abstracts

An abstract of your article is not required. However, if you choose to provide us with one, we will print it in a separate box.

_Contact info

At the end of every article is a contact info box with contact information along with a head shot of the author.

Please note at the end of your article the exact information you would like to appear in this box and format it according to the previously mentioned standards.

A short bio (50 words or less) may precede the contact info if you provide us with the necessary text.

_Questions? Comments?

Please do not hesitate to contact us for our International C.E. Magazine Author Kit or if you have other questions/comments about the article submission process:

Group Editor Kristine Colker
k.colker@dental-tribune.com

Implants Managing Editor Sierra Rendon
s.rendon@dental-tribune.com

Managing Editor Fred Michmershuizen
f.michmershuizen@dental-tribune.com
THE WORLD'S BEST-SELLING IMPLANT
MAKE IT SIMPLE

m/s SEVEN

There’s a solid scientific basis for the popularity of the MIS SEVEN implant system. Advanced design features offer a unique combination of surgical and restorative benefits: long-term stability, better BIC, excellent ossecintegration properties and great esthetic results. To learn more, visit our website: www.misimplants.com or call us: 866-797-1333 (toll-free)
Implants

the international C.E. magazine of oral implantology

U.S. Headquarters
Tribune America
116 West 23rd Street, Ste. 500
New York, NY 10011
Tel.: (212) 244–7181
Fax: (212) 244–7185
feedback@dental-tribune.com
www.dental-tribune.com

Publisher
Torsten R. Oemus
t.oemus@dental-tribune.com

President/Chief Executive Officer
Eric Seid
e.seid@dental-tribune.com

Group Editor
Kristine Colker
k.colker@dental-tribune.com

Implants Managing Editor
Sierra Rendon
s.rendon@dental-tribune.com

Managing Editor
Fred Michmershuizen
f.michmershuizen@dental-tribune.com

Managing Editor
Robert Selleck
rselleck@dental-tribune.com

Marketing Director
Anna Kataoka
a.kataoka@dental-tribune.com

Product/Account Manager
Humberto Estrada
h.estrada@dental-tribune.com

Product/Account Manager
Jan Agostaro
j.agostaro@dental-tribune.com

Education Director
Christiane Ferret
c.ferret@dtstudyclub.com

International Products/Account Manager
Maria Kaiser
m.kaiser@dental-tribune.com

Feedback & General Inquiries
feedback@dental-tribune.com

Tribune America is the official media partner of:

ImplantsCopyright Regulations

_the international C.E. magazine of implants, published by Tribune America, is printed quarterly. The magazine’s articles and illustrations are protected by copyright. Reprints of any kind, including digital mediums, without the prior consent of the publisher are inadmissible and liable to prosecution. This also applies to duplicate copies, translations, microfilms and storage and processing in electronic systems. Reproductions, including excerpts, may only be made with the permission of the publisher.

All submissions to the editorial department are understood to be the original work of the author, meaning that he or she is the sole copyright holder and no other individual(s) or publisher(s) holds the copyright to the material. The editorial department reserves the right to review all editorial submissions for factual errors and to make amendments if necessary.

Tribune America does not accept the submission of unsolicited books and manuscripts in printed or electronic form and such items will be disposed of unread should they be received.

Tribune America strives to maintain the utmost accuracy in its clinical articles. If you find a factual error or content that requires clarification, please contact Group Editor Kristine Colker at k.colker@dental-tribune.com. Opinions expressed by authors are their own and may not reflect those of Tribune America and its employees.

Tribune America cannot assume responsibility for the validity of product claims or for typographical errors. The publisher also does not assume responsibility for product names or statements made by advertisers.

The responsibility for advertisements and other specially labeled items shall not be borne by the editorial department. Likewise, no responsibility shall be assumed for information published about associations, companies and commercial markets. All cases of consequential liability arising from inaccurate or faulty representation are excluded. General terms and conditions apply, and the legal venue is New York, N.Y.
Implant site preparation.

Micrometric, high precision cutting.

Proven safe near delicate anatomy.

LED light on handpiece.

Atraumatic extractions.

New computerized feedback system.

Touch screen for ease of use.
The Tapered Internal family of dental implants provides excellent primary stability, maximum bone maintenance and soft tissue attachment for predictable results. All implant diameters from 3.0 to 5.8 can be placed with the same instrument kit, providing you surgical convenience and flexibility to choose the ideal implants for each patient’s needs. With all these features, you no longer have to accept the clinical compromises that come with other implant systems.

- **Restorative Ease**: 45° conical internal hex connection creates a robust, biologic seal and is color-coded for quick identification and component matching.
- **Connective Tissue Attachment**: Laser-Lok uniquely creates a physical connective tissue attachment and biologic seal.
- **Bone Attachment**: Laser-Lok® microchannels achieve superior osseointegration.

- **Universal Surgical Kit**: Intuitive color-coded instrumentation used to place all BioHorizons tapered implants.*