

better science, better implants

# CONFIDENCE in BioHorizons

BioHorizons is committed to developing evidence-based and scientifically proven products. This commitment started with the launch of the Maestro implant system in 1997 and remains in full force today with our most recent launches, the Tapered Short implant and Laser-Lok multi-unit abutments.

The focus of BioHorizons on science, innovation and service enables our customers to confidently use our comprehensive portfolio of dental implants, prosthetics, biologics products and digital solutions making BioHorizons one of the fastest growing companies in the dental industry.

BioHorizons helps customers restore smiles in 90 countries throughout North America, Europe, South America, Asia, Africa and Australia.

#### SCIENCE

BioHorizons uses science and research to create unique dental implant products with proven surgical and esthetic results.

#### INNOVATION

Game-changing technologies like Laser-Lok implants and abutments as well as versatile products like the OD Secure, computer-guided surgery and custom-milled abutments have made BioHorizons a leading implant company.

#### SERVICE

BioHorizons understands the importance of providing excellent service. Our global network of professional representatives and our highly trained customer care support team are well equipped to meet the needs of patients and clinicians.



## a history of innovation

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Tapered Short implants | Cytoplast® Dense PTFE Membranes
              ODSecure® | MinerOss® XP | Vulcan Custom Dental
              BioPlug & BioStrip | Snap impression copings | Mem-Lok® Pliable & Pericardium | 18mm implants
             MinerOss® X family of xenografts*
              Computer Guided Surgery | MinerOss® Cortical
              Tapered Plus implants | Tapered 3.0 implants | Multi-unit abutments | MinerOss® Cancellous
              two-piece small diameter implants | Laser-Lok® abutments
             ILS acquisition - introduction of digital dentistry
              Tapered Internal implants featuring Laser-Lok | Mem-Lok® RCM
              BioLok acquisition | Laser-Lok® technology
             Internal implants | MinerOss® Cortical & Cancellous Chips
              Biologics distribution begins (AlloDerm<sup>™</sup> Regenerative Tissue Matrix (RTM) & Grafton® DBM)
             international distribution begins
              1st patent issued | External implants
-1994
             BioHorizons founded
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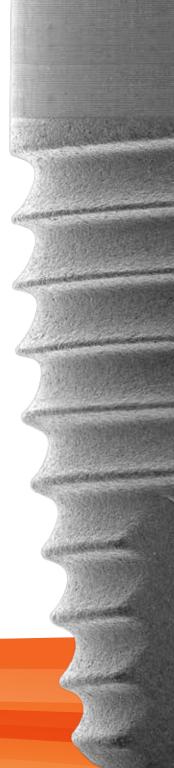
## proven results through evidence-based research

#### dental implants

The BioHorizons Tapered Family of implants give you the flexibility to place bone level, tissue level, platform-matched, platform-switched, small diameter, and regular diameter all with a single drilling protocol. Our dental implants have a 99% average implant success rate<sup>1</sup> and also come with a lifetime warranty giving you peace of mind.

99% average implant success rate<sup>1</sup>







#### computer guided surgery

Take your treatment plan to the next level with precise and predictable implant placement using our computer guided surgery kit.

#### digital solutions

BioHorizons has partnered with Vulcan Custom Dental to offer a complete digital workflow through Guided Restorative Solutions (GRS). GRS combines the efficiency and predictability of guided surgery with hybrid or titanium custom abutments and conveniently delivers everything needed for a case, including BioHorizons implants.





#### prosthetics

BioHorizons offers a broad array of abutments for a wide range of restorative applications and individual needs including the versatile 3inOne abutment, the game-changing Laser-Lok abutments as well as the comprehensive Multi-unit abutment system.



#### biologics

Our Biologics products are scientifically proven for a wide range of soft and hard tissue applications.

BioHorizons is recognized as a global leader for tissue regeneration solutions that feature:

- MinerOss® allografts and xenografts
- Grafton® DBM
- AlloDerm<sup>™</sup> Regenerative Tissue Matrix (RTM)
- AlloDerm GBR<sup>™</sup> Regenerative Tissue Matrix (RTM)
- Cytoplast<sup>®</sup> Dense PTFE Membrane
- Mem-Lok<sup>®</sup> collagen and pericardium membranes
- BioPlug & BioStrip



# Laser-Lok® microchannels better science, better implants

Laser-Lok microchannels is a series of cell-sized circumferential channels that are precisely created using proprietary laser ablation technology. This technology produces extremely consistent microchannels that are optimally sized to attach and organize both osteoblasts and fibroblasts.<sup>2-11</sup> The Laser-Lok microstructure also includes a repeating nanostructure that maximizes surface area and enables cell pseudopodia and collagen microfibrils to interdigitate with the Laser-Lok surface.

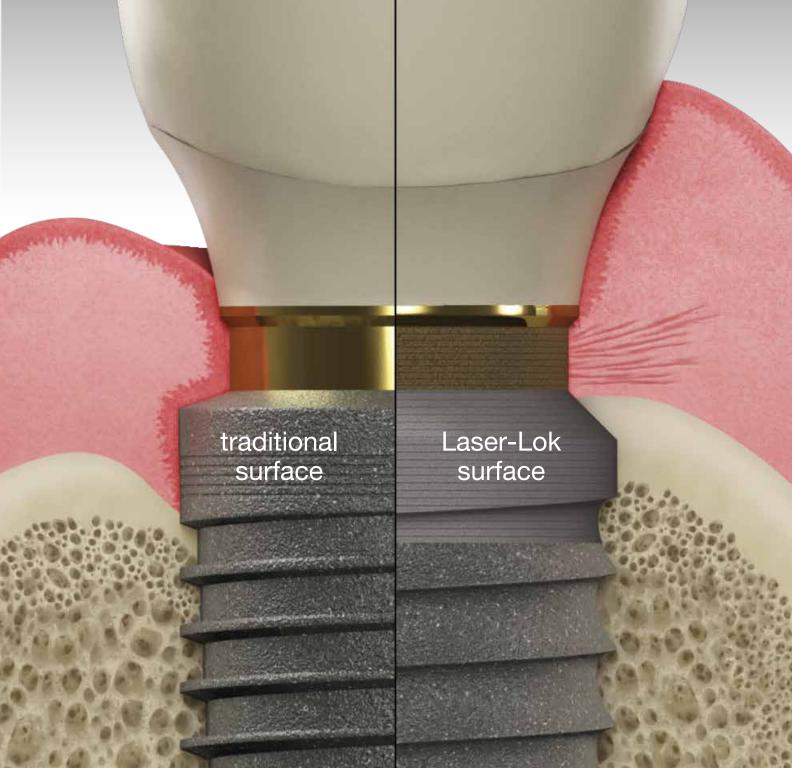
- over 25 years of in vitro, animal and human studies at leading universities<sup>12</sup>
- long-term case studies showing superior bone & tissue maintenance<sup>13</sup>
- only surface shown using light microscopy, polarized light microscopy and scanning electron microscopy to attract
  a physical, connective tissue attachment<sup>14-22</sup>
- overdenture study showing only 0.42mm of bone loss compared to 1.13mm for NobelReplace™ Select<sup>23</sup>
- multi-center prospective study showing only 0.59mm of bone loss compared to 1.94mm for traditional implants<sup>24</sup>

Superior bone osseointegration<sup>1</sup>

reduces bone loss by up to 70% versus leading competitors<sup>2</sup>

Connective tissue attaches to Laser-Lok<sup>3</sup>

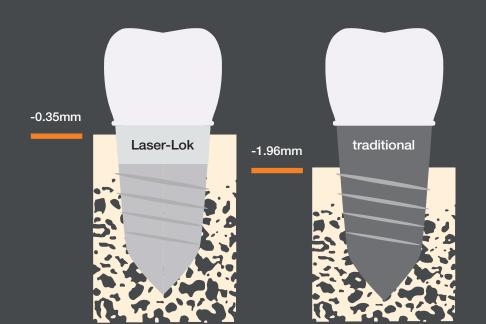
reducing probing depths by up to 1.21mm versus leading competitors<sup>2</sup>



## 100% success rate

## predictable esthetic results

Laser-Lok has demonstrated 100% success rates over 3 years in the anterior esthetic zone<sup>1</sup>, the most challenging implant area.



## maintain crestal bone

The Laser-Lok surface has proven its ability to reduce crestal bone loss by as much as 70% versus leading competitors.<sup>2</sup> Over 3 years, crestal bone loss can be reduced to as little as 0.35mm.<sup>1</sup>

## better results, better esthetics

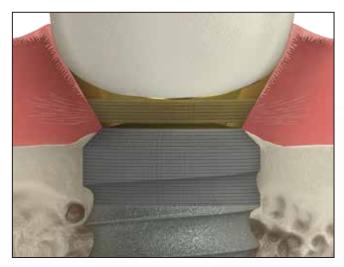


Laser-Lok® dental implant at 15 years shows superior crestal bone, esthetics & tissue maintenance. Case courtesy of Cary A. Shapoff, DDS (Surgical); Jeffrey A. Babushkin, DDS (Restorative)



Laser-Lok Tapered Plus implant at 3 months Colorized histology of a fully lased implant thread showing complete bone attachment.<sup>17</sup> Colorized SEM of Laser-Lok® microchannels showing superior osseointegration.<sup>17</sup>

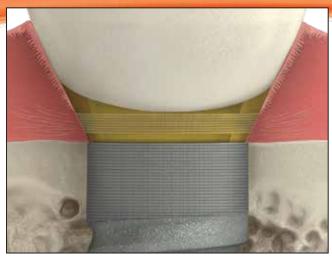
the tapered family of of dental implants features excellent primary stability & proven esthetic results



Tapered Plus



Tapered Tissue Level



Tapered Internal

one surgical kit, unlimited possibilities

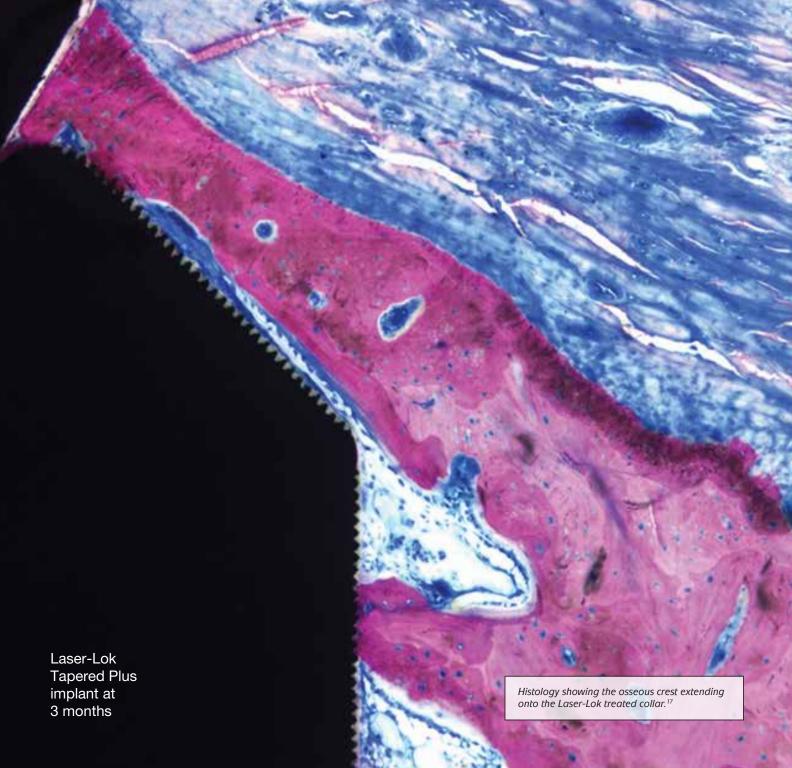
The universal surgical kit is used to place any implant in the Tapered family.\* It features an intuitive color-coded layout that guides the surgeon through the instrument sequence. The drilling section is color-coded by implant diameter. The implant driver section is color-coded by prosthetic connection.

\*Tapered Short implants require 5 additional drills.

#### features:

- versatile, removable, hinged lid
- 40% smaller and 40% lighter than other kits
- easy to disassemble and assemble during cleaning
- implant staging area for implant vials during surgery
- use to place Tapered Plus, Tapered Internal, Tapered Tissue Level and Tapered 3.0
- empty spare slots for other instrumentation such as stop drills and extended shank drills





## tapered internal

Tapered Internal dental implants feature an anatomically tapered dental implant body, aggressive buttress threads and advanced Laser-Lok surface technology. The deep 1.5mm internal hex connection with a 45° tapered bevel create a rigid connection and a stable biologic seal.

<b>Q</b>			
delivery options	mount-free   3inOne abutment		
connection	conical internal hex		
placement	bone level or uneven ridges		
surface treatment	Laser-Lok   RBT or Laser-Lok Complete		
platform diameters	3.0mm   3.0mm   3.5mm   4.5mm   5.7mm		
body diameters	3.0mm   3.4mm   3.8mm   4.6mm   5.8mm		
lengths	7.5mm   9mm   10.5mm   12mm   15mm   18mm		
-	B		



X-ray showing an abutment restoration properly seated on a Tapered Internal implant (courtesy of Rick Ferguson, DMD)

## tapered plus

The Tapered Plus implant system offers all the great benefits of BioHorizons highly successful Tapered Internal system PLUS it features a Laser-Lok treated beveled-collar for bone and soft tissue attachment and platform switching designed for increased soft tissue volume.

N N	
delivery method	mount-free
connection	conical internal hex
placement	bone level or uneven ridges
surface treatment	Laser-Lok   RBT
platform diameters	3.0mm   3.5mm   4.5mm
body diameters	3.8mm   4.6mm   5.8mm
lengths	7.5mm   9mm   10.5mm   12mm   15mm
	9



X-ray showing a 4.5mm healing abutment on a 5.8mm Tapered Plus implant (courtesy of Justin Moody, DDS)

## tapered 3.0

Tapered 3.0 dental implants are designed specifically for limited spaces in the esthetic zone and are placed easily with a 2.0 and 2.5mm drill. The two-piece 3mm design offers restorative flexibility in narrow spaces and is designed for ultimate strength in a small package.

•	
delivery options	mount-free
connection	conical internal hex
placement	bone level or uneven ridges
surface treatment	Laser-Lok   RBT
platform diameters	3.0mm
body diameter	3.0mm
lengths	10.5mm   12mm   15mm
	B

BioHorizons is stronger than competitor 3.0 implants.<sup>25</sup>



### tapered short

Tapered Short implants are available in 6 and 7.5mm lengths, offering a solution for cases with limited vertical bone height and minimizing the need for bone grafting. The implant design features an aggressive thread profile and tapered body for primary stability, even in compromised situations. A platform-switched, dual-affinity, Laser-Lok® surface offers crestal bone retention and a connective tissue attachment for flexible placement in uneven ridges.

delivery options		mount-free
connection		conical internal hex
placement		bone level or uneven ridges
surface treatment	1000	Laser-Lok   RBT
platform diameters		3.5mm   4.5mm
body diameters		4.6mm 5.8mm
lengths		6mm   7.5mm

### tapered tissue level

Tapered Tissue Level implants feature a 1.8mm transmucosal collar for one stage procedures and Laser-Lok surface technology to inhibit epithelial downgrowth, attach connective tissue and create a biologic seal around the implant. Tapered Tissue Level implants are available in 4 diameters including the only 3mm tissue level implants currently available for tight spaces. The stage of the stage

delivery options		mount-free
connection		conical internal hex
placement		tissue level
surface treatment		Laser-Lok   RBT
platform diameters		3.5mm   3.5mm   4.5mm   5.7mm
body diameters	ALC:	3.0mm   3.8mm   4.6mm   5.8mm
lengths	學程	7.5mm   9mm   10.5mm   12mm
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## Computer Guided Surgery



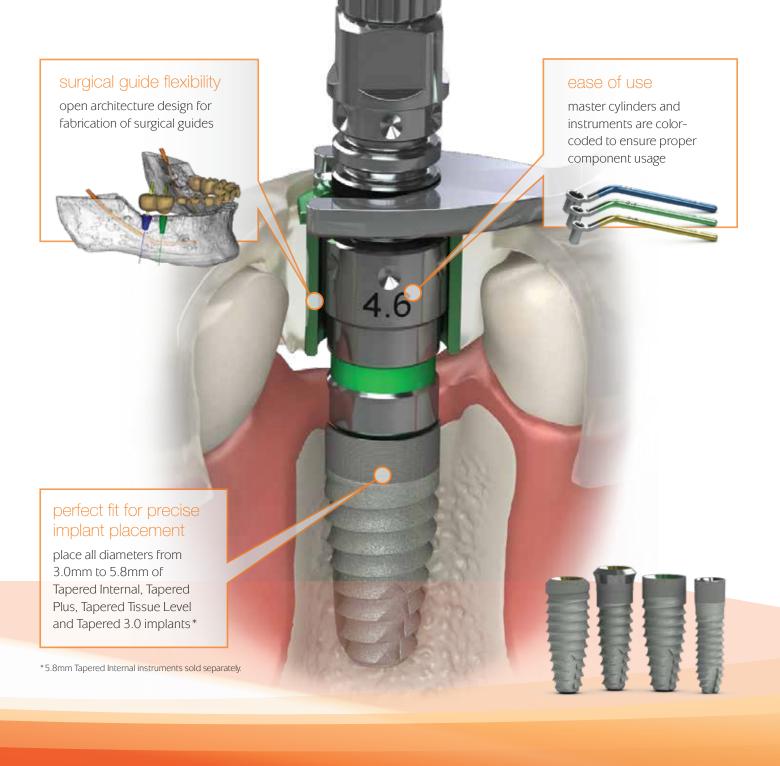
#### treatment planning

A range of popular guide manufacturers have received BioHorizons master cylinders, drilling protocols and .stl files to design and manufacture guides. For a list of these guide manufacturers, please visit guide.biohorizons.com.

## the BioHorizons guided surgery kit

The BioHorizons guided surgery kit offers the precision and predictability of guided implant placement with a streamlined, single kit design. All components are color-coded to avoid the complexity seen with other systems while offering our customers predictable implant placement for optimal esthetic outcomes.





## comprehensive portfolio of digital solutions

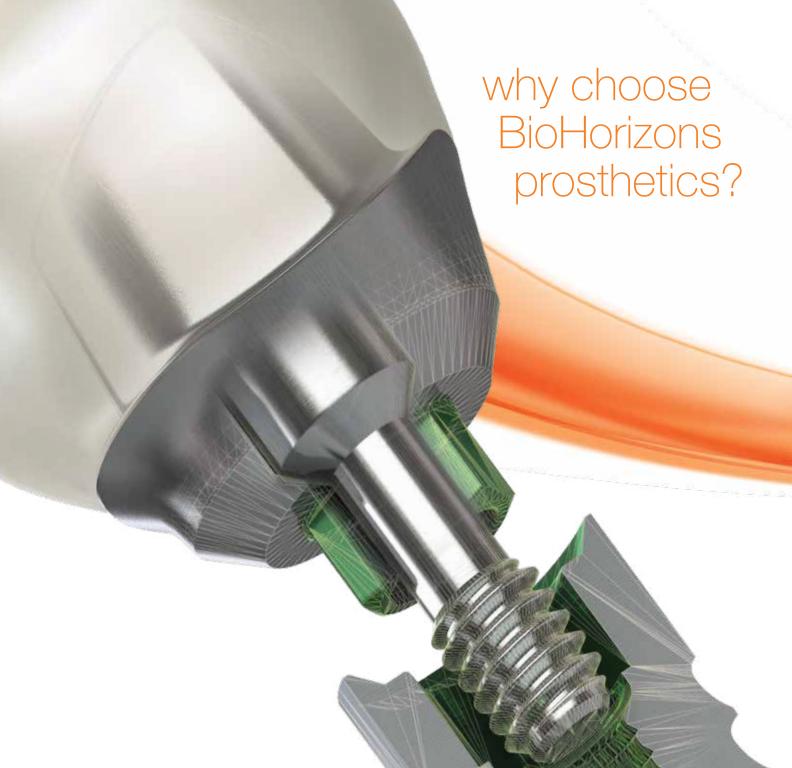
by Vulcan and BioHorizons





Authentic Connection means that Vulcan Custom Dental only uses BioHorizons parts and components.





#### create beautiful restorations in any clinical situation



#### **Pauthentic** connection

Using authentic BioHorizons parts will ensure a precision fit connection between the prosthetic component and implant, avoiding costly component failures that may occur from using third-party prosthetics. Authentic BioHorizons parts are color-coded for easy identification to match the mating implant.

#### advantages:

- lifetime warranty on all implants and prosthetics
- Spiralock® technology minimizes screw loosening
- precise mating geometries reduce prosthetic failures
- advanced design creates a better engineered connection
- color-coded prosthetic components match implant platforms

## simple system identification

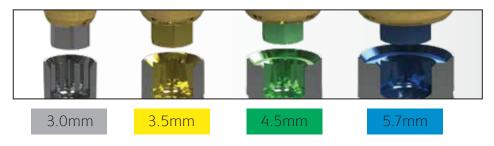
BioHorizons prosthetics include several features to simplify the restorative process. (1) Color coding on all components;

- (2) laser-marking on the healing abutments; and
- (3) matching emergence profiles for soft tissue contour.





BioHorizons prosthetic components are color-coded to match the BioHorizons implant prosthetic platforms.



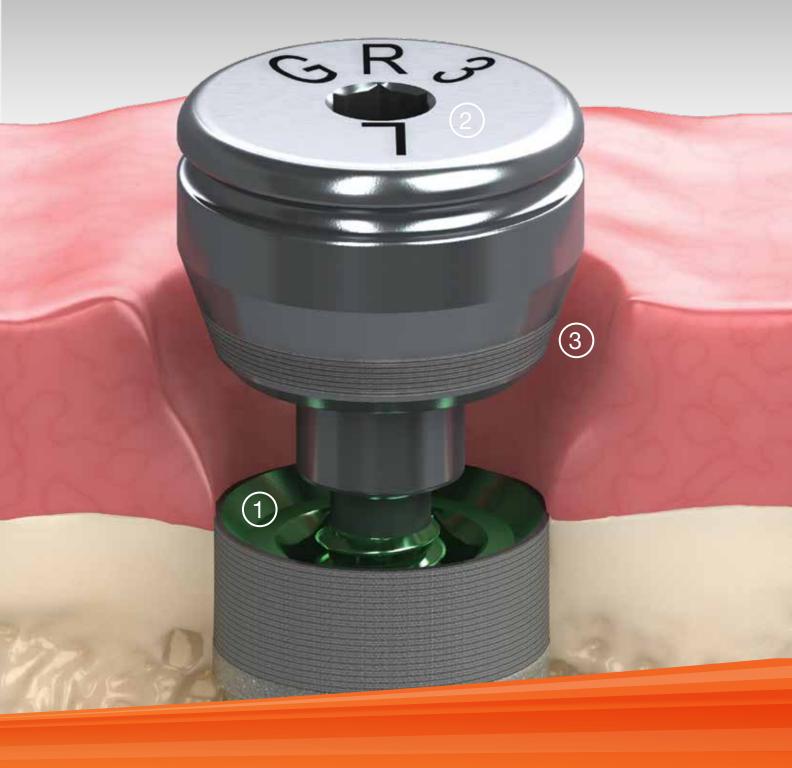
prosthetic connection

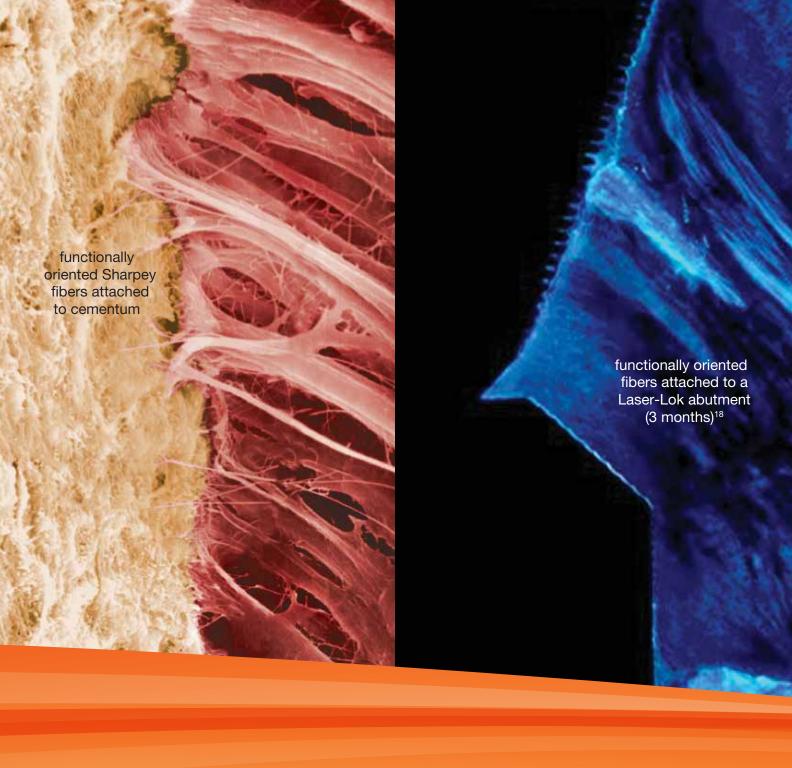
#### (2) laser-marking

BioHorizons healing abutments are laser-marked for easy identification without having to remove them from the implant site. Laser-marking describes the platform size, emergence profile, abutment height and Laser-Lok.

#### (3) emergence profile

Healing abutments, impression copings and final abutments are designed with matching emergence profiles to maximize esthetics and avoid soft tissue impingement during seating.





### Laser-Lok abutments

With the success of BioHorizons Laser-Lok technology on implants, BioHorizons breaks new ground by applying this innovative technology to abutments. This enables our customers to use Laser-Lok abutments to create a biologic seal and Laser-Lok implants to establish superior osseointegration<sup>2</sup> – a solution that offers the best of both worlds.



#### patient-specific abutments

For anterior cases that require a precise, customized esthetic solution, BioHorizons patient-specific abutments are the perfect choice. Available in full titanium and hybrid zirconia, both offer the precision fit of the BioHorizons connection but are milled to accurately meet the individual patient's needs.

#### esthetic abutments

BioHorizons esthetic abutments are designed to follow the scalloped gingiva in the anterior and minimize the amount of modification



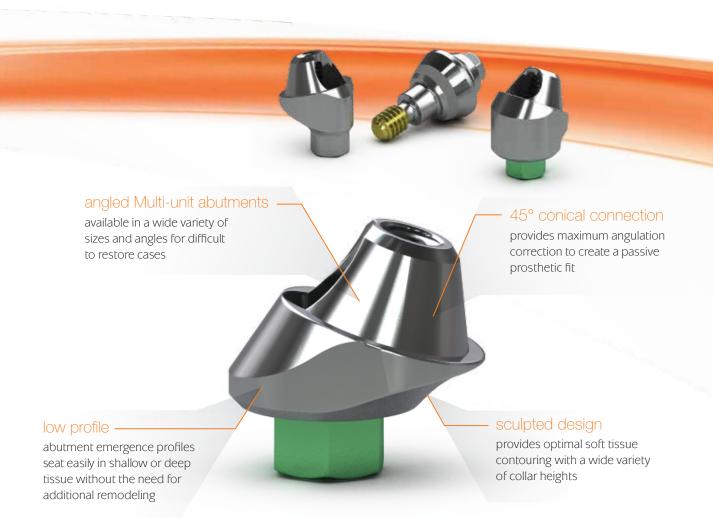


#### Simple Solutions abutments

The Simple Solutions abutments are designed for the posterior and are seated at the time of surgery. These abutments remain in place through final restoration. This simplifies the restorative process, because a single abutment is used for temporization, impression taking and final restoration.

### Multi-unit abutments

The BioHorizons Multi-unit abutment system provides the tools to restore even compromised edentulous cases. With a wide variety of abutment angles, collar heights and platform diameters, no system better equips you to plan for your patients' individual needs. The Multi-unit abutment's intelligent design and restorative flexibility is matched only by its ease of use and surgical efficiency. Straight Multi-units are now available with Laser-Lok.



## TeethXpress<sup>®</sup>

TeethXpress is a biomechanically-stable, immediate load and function protocol for fully or partially edentulous patients. BioHorizons Tapered implants with Laser-Lok technology provide superior primary stability for immediate load. The TeethXpress technique creates a stable and predictable immediate load solution that will make your patients smile.

We have several Continuing Education programs dedicated to full arch conversions with a special focus on team approach, patient identification, case acceptance and business development strategies. Visit teethxpresscourses.com for the latest course listings.





Carly (before)

#### benefits:

- stability and predictability from a biomechanically driven protocol
- versatile implant and prosthetic options to accommodate angled or parallel implants
- reduced treatment time and expense compared to traditional hybrid restorations
- life changing benefits to edentulous and soon-to-be edentulous patients

immediately enhance patients' lives

"When I saw my new teeth for the first time, I couldn't stop smiling. I was so happy - I almost started crying." Carly (after)

## MinerOss® family of allografts

## retains natural osteoconductive properties

Offering a variety of solutions, the MinerOss® family of bone graft products gives each clinician a selection of choices to meet the needs of any grafting application.



#### MinerOss® Cortical & Cancellous Chips

The mixture of cortical and cancellous chips provides limited stability and space maintaining properties during the bone remodeling process. The unique blend forms an osteoconductive scaffold providing volume enhancement and effective site development for successful dental implant placement.

#### MinerOss® Cancellous

The osteoconductive properties along with the fast remodeling time allow for rapid revascularization and predictable results. With a size range of 300–1000 microns, MinerOss® Cancellous provides ideal handling characteristics for a wide range of applications.



Histomorphometric analysis revealed 87% vital bone; type II quality

#### MinerOss® Cortical

The strength of a cortical allograft is ideal in procedures where structural integrity and long lasting stability are needed for proper regeneration. MinerOss® Cortical is available in 300-1000 microns to allow for easy handling and fast hydration.







## MinerOss® X family of xenografts

#### convenience is key

Available in a variety of options, MinerOss® X is an anorganic bovine bone mineral matrix that is physically and chemically comparable to the mineral structure of human bone.

#### MinerOss® X Collagen

MinerOss® X Collagen is a combination of 95% anorganic cancellous bovine bone mineral and approximately 5% highly purified Type I bovine collagen. This block form allows for convenience during placement and is an ideal solution for many applications.



#### MinerOss® X Syringe

MinerOss® X Syringe is cancellous particulate pre-loaded into a delivery syringe to assist with optimal placement at the defect site.

#### MinerOss® X Particulate

MinerOss® X Particulate is available in either cancellous or cortical form. The complex trabecular architecture and natural consistency are designed for ideal bone formation and remodeling at the defect site.

### MinerOss® XP

MinerOss® XP is a highly porous anorganic porcine bone mineral matrix designed for hard tissue grafting applications. Increased porosity allows for optimal osteoconductivity and adequate space for new bone deposition.





### Grafton® DBM

#### clinically proven bone graft substitute

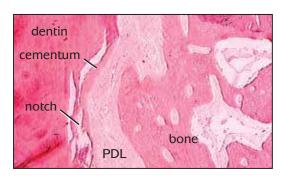
Clinicians desire predictability and flexibility when using a bone graft substitute. Proven in published, peer-reviewed clinical studies, the success of Grafton® DBM in multiple forms gives clinicians options for bone grafting applications.<sup>29</sup> With more than 20 years of clinical history, Grafton® DBM gives you the ability to preserve bone height and width.<sup>30</sup>



- forms include Matrix Plugs, Putty in a Syringe or Jar, and Flex
- validated for osteoinduction in an in vivo model<sup>31,\*</sup>
- exclusive proprietary fiber technology proven to be osteoconductive in preclinical outcomes study







Post-op histology showing bone and PDL opposite reference notch.

There is a low and limited possibility of disease transmission related to the use of allograft derived materials.

 $<sup>^{\</sup>ast}\mbox{\sc Animal}$  studies are not necessarily predictive of human clinical results.



## AlloDerm™ RTM

Since its introduction to dentistry in 1994, AlloDerm<sup>TM</sup> RTM has been a widely accepted acellular dermal matrix (ADM) for soft tissue applications. AlloDerm<sup>TM</sup> RTM supports tissue regeneration by allowing rapid revascularization, white cell migration and cell population – ultimately being transformed into host tissue for a strong, natural repair.

- most published ADM in implant dentistry
- reduced post-operative complications as shown in trials<sup>32</sup>
- randomized clinical trials indicated no statistical difference to connective tissue for recession coverage<sup>33</sup>







C) Afferga

# AlloDerm GBR™ RTM

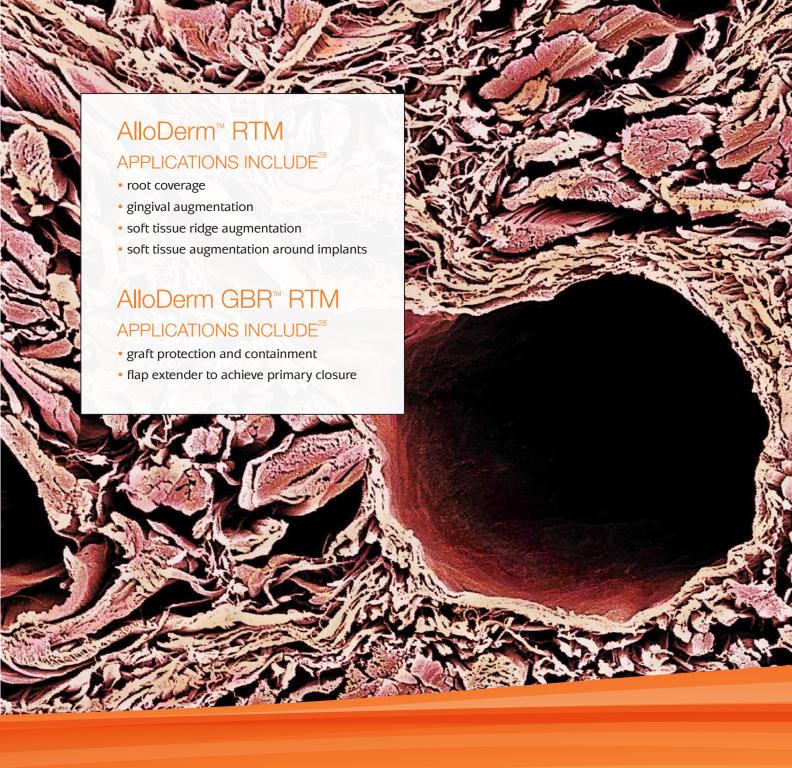
AlloDerm GBR<sup>™</sup> RTM is manufactured utilizing the same proprietary process used for AlloDerm RTM, however AlloDerm GBR<sup>™</sup> RTM is used as an effective barrier membrane that transitions into the patient's own tissue.<sup>34</sup>

- benefits soft tissue quality and serves as a barrier membrane<sup>34</sup>
- less technique sensitive due to its ability to be exposed during healing<sup>35</sup>
- demonstrated alternative to bioabsorbable membranes<sup>36</sup>









# Cytoplast™ Dense PTFE Membranes

The micro-textured TXT-200 & TXT-200 Singles provide a textured surface to increase the area available for cellular attachment without increasing porosity. (200 microns thick)

- patented Regentex<sup>TM</sup> surface for increased stability
- impervious to bacteria (membrane pore size less than 0.3 microns)
- designed to withstand exposure
- · non-surgical removal when left exposed
- for socket grafting and grafting where primary closure is not possible



# Cytoplast™ Titanium-Reinforced PTFE Membranes

The traditional frame design, incorporating delicate and strategically-placed titanium "struts", has more than 25 years of clinical history and successful use in guided bone regeneration. Cytoplast™ Ti-250 membranes provide a wide range of coverage solutions for cases involving extraction sites, bony defects, and ridge augmentation. (250 microns thick)

- non-resorbable material allows the clinician to dictate healing time
- passive fit with no memory retention
- lightweight framework is easy to trim and is compliant with overlying soft tissues



# Mem-Lok®RCM

### easy handling, long lasting

Mem-Lok® RCM is engineered from highly purified type I collagen to provide an increased resorption period and ensure optimal bone regeneration. Clinicians can be confident that Mem-Lok® RCM will serve as an effective barrier membrane for bone regeneration.

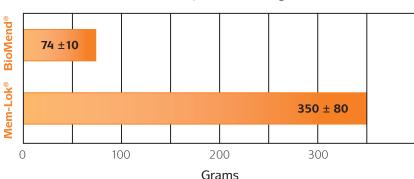


- adapts easily to various bony defects
- predictable resorption period of 26–38 weeks<sup>37</sup>
- macromolecular pore size permeability that permits the exchange of essential nutrients during healing

#### APPLICATIONS INCLUDE<sup>28</sup>

- extraction sockets
- sinus augmentation sinus window
- ridge preservation
- bone augmentation around implants
- bony defects
- peri-implant bone defect around implants

#### Suture pull-out strength



Dense membrane allows for increased mechanical strength.<sup>38</sup>

# Mem-Lok® Pliable

### drapeable, adapts to contours

Mem-Lok® Pliable is a strong, conformable collagen barrier membrane manufactured from highly purified porcine tissue.

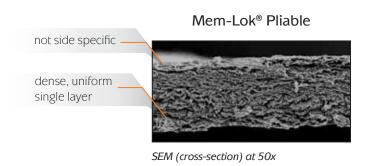
- single layer intact collagen
- not side specific
- cell occulusive
- 12-16 week resorption time
- high suture pull-out strength

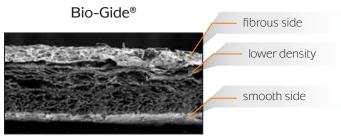
### APPLICATIONS INCLUDE<sup>28</sup>

- extraction sites
- ridge augmentation
- graft containment around immediate implants
- periodontal defects



SEM (cross-section) at 50x





# Mem-Lok® Pericardium

#### the natural containment barrier

Mem-Lok® Pericardium is a long lasting, conformable barrier membrane that drapes easily for graft site contours. It has excellent strength and stability for optimal graft site protection.

- tear resistant, can be sutured or tacked
- 5-year shelf life

#### APPLICATIONS INCLUDE<sup>28</sup>

- extraction sites
- ridge augmentation



# BioPlug & BioStrip

### resorbable wound dressings

BioPlug and BioStrip are collagen wound dressings designed to absorb blood or fluids and protect the site for optimal regeneration.

- fully resorbed in 10-14 days
- quantity of 10 units per box
- packaged sterile

# BioStrip APPLICATIONS INCLUDE<sup>28</sup>

- closure of grafted sites
- dressing of minor wounds



# BioPlug APPLICATIONS INCLUDE<sup>28</sup>

- extraction sockets
- biopsy sites



# **v** patientconnect™

your pathway to practice success

#### what is PatientConnect?

PatientConnect is our comprehensive, innovative portfolio of practice development offerings that allow you to:

- attract and educate patients
- secure referrals
- increase treatment plan acceptance

### start connecting with patients today

BioHorizons customers have access to a variety of print and digital practice development options to promote success and enhance patient relations, including:

- patient education
- online marketing
- direct-to-patient advertising

Our solutions are simple, cost-effective and proven to promote practice growth. Getting started is easy!

Contact your BioHorizons representative today for more information or visit us online at patientconnect.biohorizons.com.

### professional marketing & patient education solutions





print materials

advertising



consultation models













multimedia patient education

Progressive Dental marketing services

PatientConnect Services	Restorative Clinician	Surgeon
Print materials	<b>~</b>	<b>✓</b>
iPad app	<b>✓</b>	<b>✓</b>
Patient websites	<b>~</b>	<b>✓</b>
Media gallery	<b>✓</b>	<b>✓</b>
Patient education PowerPoint presentation	<b>~</b>	<b>✓</b>
Patient education video loop	<b>✓</b>	<b>✓</b>
Patient education images	<b>~</b>	<b>✓</b>
TeethXpress patient education magazine	\$	\$
Consultation models	\$	\$
Progressive Dental marketing services	\$	\$
Direct-to-patient advertising	\$	\$
→ = offered services \$ = additional costs involved	Not all PatientConnect services are available in all countries.	

# why choose BioHorizons?

#### value

BioHorizons provides the highest quality products and the most value. For example, Tapered Internal can be ordered with a pre-mounted, gold-hued, esthetic final abutment, an abutment screw, and a cover cap for submerged protocol.

### leadership

BioHorizons has a rich history of working with key thought leaders within the periodontal, oral surgery, prosthodontic and general practitioner communities to enhance our designs and adopt the latest techniques.

### simplicity

All BioHorizons implants
and prosthetics are
color-coded for
easy identification.
Restorative dentists
can quickly identify
implant type and
diameter while
the patient is
in the chair

### design

Dental professionals want tools and components that work and fit well.
BioHorizons parts feature tight machine tolerances that provide a great surgical & restorative experience.

#### convenience

Our interactive website gives visitors a valuable online experience with useful information. The new graphics-based, online catalog enables visitors to view detailed product specs and US & Canadian customers to review account history, place orders 24/7, and track shipments.

#### confidence

All BioHorizons
implants and prosthetic
components come
with a lifetime
warranty so you can
place and restore
implants with

#### materials

All BioHorizons implants are made of titanium alloy which is 1.5 to 3.5 times stronger than pure titanium implants from other companies. This strength difference can affect the long term success of an implant and is critical for small diameter implants.

#### education

Continuing education is crucial to the rapidly changing field of implant dentistry. With our support of over 800 surgical and restorative educational events each year, BioHorizons is committed to advancing technologies and the quality of care.

#### service |

BioHorizons is dedicated to effectively meeting your needs with our team of professionallytrained customer care and technical support representatives, and product support specialists around the world.

### references

- Implant success rate is the weighted average of all published human studies on BioHorizons implants. These studies are available for review in BioHorizons document numbers ML0606 and ML0130.
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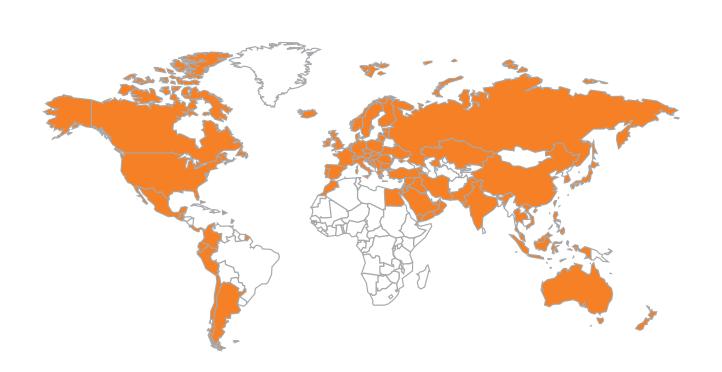
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