



UNITE[®]
ORTHOBIOLOGICS

Advanced Orthobiologic Solutions
Intelligently designed to support bone healing.



ACTIVATE
YOUR
FUSION.

A force of nature against non-unions.

Literature shows that non-union rates are notoriously high for hindfoot and ankle fusions due to the physical challenges of those mobile areas: increased mechanical load, restricted blood supply and thin soft tissue coverage.¹ That risk dramatically increases with patient co-morbidities.¹

But it doesn't have to be the case. Research shows that orthobiologics, including bone graft and bone graft substitutes, can help improve fusion rates.² Although autograft is ideal, it has many limitations, including donor site morbidity, increased operative time and limited autograft material.³ **That's where we step in.**

Hindfoot and ankle fusions
in healthy patients



10–18%
non-union rate^{4,5}

Patients with co-morbidities
such as diabetes and smoking



41%
non-union rate⁶



Build new life at the site.

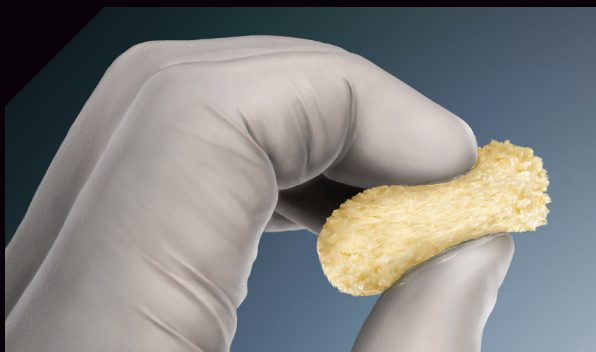
Biologically active grafts fused with
superior handling characteristics.

To rebuild bone and revitalize tissue, the most viable solutions are full of life. That's the science behind our next-generation portfolio of orthobiologics. They're intelligently designed to nurture recovery through vitality, combining the power of biologically active cells and growth factors with superior handling characteristics. Our solutions stand up to every challenge and fill every void, helping to stimulate new life at the surgical site.

Activate your fusion with Medline UNITE orthobiologics.

4 factors for better bone regeneration.

Our advanced orthobiologics deliver on them all.



Superior Handling Shape

Moldability and irrigation resistance to fill voids and defects of all shapes and sizes

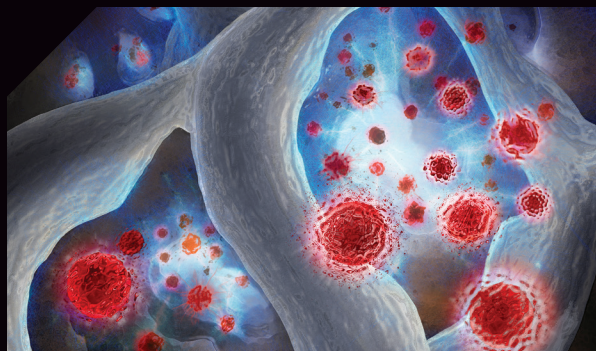
Sources: Cortical Fibers, Synthetic Carriers



Osteoconductive Support

Physical scaffold that supports cellular activity and bony ingrowth

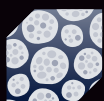
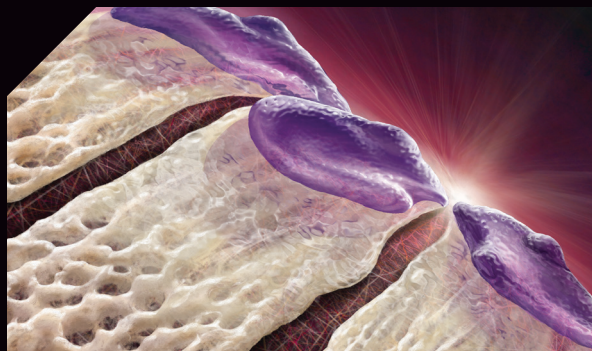
Sources: Allograft bone chips, bone fibers, and synthetics/ceramics, such as β -TCP and HA



Osteoinductive Stimulate

Growth factors such as BMPs that recruit and stimulate a patient's own cells to differentiate into osteoblasts

Sources: BMPs (growth factors) from allograft demineralized bone matrix



Osteogenic Start

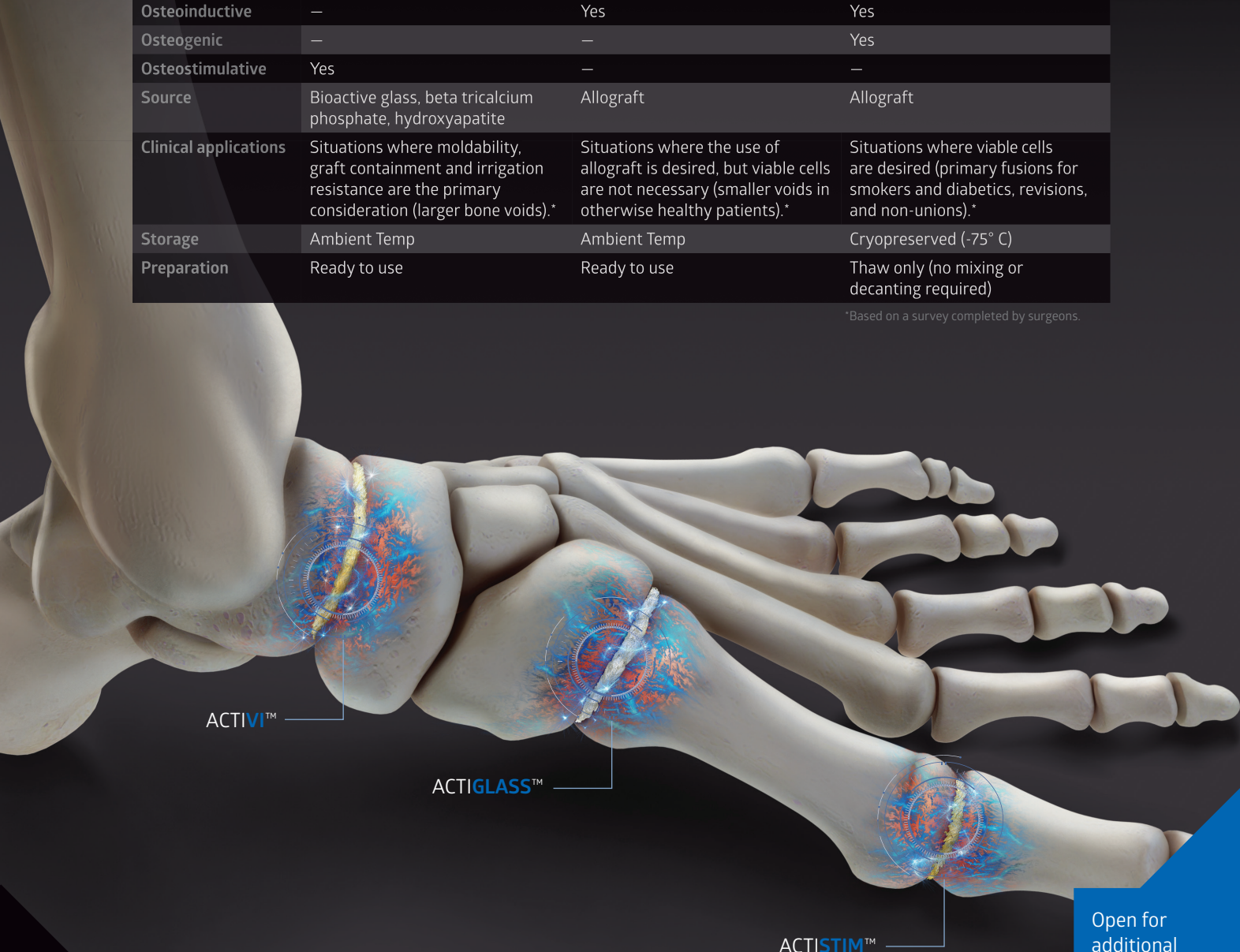
Cells that differentiate and develop into osteoblasts which form new bone

Sources: Cells from autograft bone, bone marrow aspirate (BMA), cryopreserved allograft bone cells

Activate the right bone grafting solution for every case.

	Synthetic Bioactive Putty	Demineralized Fiber Putty	Fiber Viable Bone Matrix
Graft texture			
	ACTIGLASS™	ACTISTIM™	ACTIVI™
Osteoconductive	Yes	Yes	Yes
Osteoinductive	—	Yes	Yes
Osteogenic	—	—	Yes
Osteostimulative	Yes	—	—
Source	Bioactive glass, beta tricalcium phosphate, hydroxyapatite	Allograft	Allograft
Clinical applications	Situations where moldability, graft containment and irrigation resistance are the primary consideration (larger bone voids).*	Situations where the use of allograft is desired, but viable cells are not necessary (smaller voids in otherwise healthy patients).*	Situations where viable cells are desired (primary fusions for smokers and diabetics, revisions, and non-unions).*
Storage	Ambient Temp	Ambient Temp	Cryopreserved (-75° C)
Preparation	Ready to use	Ready to use	Thaw only (no mixing or decanting required)

*Based on a survey completed by surgeons.



Open for
additional
product
details.

MEDLINEUNITE
ACTIGLASS™
Synthetic Bioactive Putty



Bioactive glass kickstarts the healing process with an osteostimulative effect.



BIOACTIVE
GLASS



POROUS
SCAFFOLD

Build bone with a pliable synthetic putty that mimics the power of nature.

Surgery-ready and designed to provide a rapid, bioactive response, optimized resorption profile and unparalleled handling characteristics.

Forms an osteoconductive apatite layer as early as **7 days**.

Optimized combination and ratio of biomaterials to support bone healing at all stages

Bioglass facilitates a rapid biological response and stimulates the formation of an osteoconductive apatite layer

Optimized granule structure and porosity mimics human cancellous bone



Controlled resorption profile with biphasic granules (β -TCP and HA components)

Highly moldable and waxy consistency in a rapidly resorbing Alkylene Oxide Polymer carrier

Item No.	Size
Synthetic Bioactive Putty	
MSBG0375	3.75 g
MSBG0750	7.5 g



ACTIGLASS



PARTIALLY HYDRATED



FULLY HYDRATED

MEDLINEUNITE
ACTISTIM™
Demineralized Fiber Putty
and Cortical Fibers



Demineralized cortical fibers increase graft surface area to promote osteoconductivity, powered by the presence of bone morphogenetic proteins (BMP-2).



GROWTH
FACTORS



FIBER
SCAFFOLD



POROUS
SCAFFOLD

Actively stimulate bone growth at the source.

100% human allograft fuses ideal biological properties with excellent handling characteristics to help aid in bone healing.

18x
greater
surface area to
volume ratio.*

Fiber Putty and Cortical Fiber
formats available to accommodate
surgeon preference

3D interwoven fiber scaffold
offers greater osteoconductive
surface area vs. traditional crushed
cancellous bone

Improved handling and wicking
vs. traditional putties and chips



Carrier-free formulation allows
for immediate start to the bone
healing process

Item No.	Size
Demineralized Fiber Putty	
MDBM1010	1 cc
MDBM1025	2.5 cc
MDBM1050	5 cc
MDBM1100	10 cc
Cortical Fibers	
MDBF1025	2.5 cc
MDBF1050	5 cc
MDBF1100	10 cc



ACTISTIM



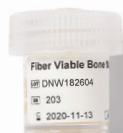
PARTIALLY HYDRATED



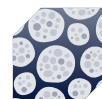
FULLY HYDRATED

*Compared to 1-4mm cancellous chips.

MEDLINEUNITE
ACTIVI™
Fiber Viable Bone Matrix



Optimized proprietary processing improves osteoinductive and osteogenic potential.



VIABLE
CELLS



GROWTH
FACTORS



FIBER
SCAFFOLD



POROUS
SCAFFOLD

Restore vitality with bone-building living cells.

Quality and quantity for unparalleled results. State-of-the-art processing technology is used to preserve a healthier population of 650,000 viable allograft cells per cc, building a solid grafting foundation with a 3D interwoven fiber scaffold.

650,000
viable
cells per cc.**

Unique processing technology
protects healthy cell population
and viability by reducing cell-
damaging processing steps.*

Greater osteogenic potential and
cell proliferation capability vs.
traditionally processed cellular
bone allografts*

Greater osteoinductive potential
and BMP-2/BMP-7 levels vs.
traditional demineralized bone



3D interwoven fiber scaffold
offers greater osteoconductive
surface area versus traditional
crushed cancellous bone

**Improved handling, wicking
and mixing** vs. traditional
cellular allografts

Item No.	Size
Fiber Viable Bone Matrix	
MVBG0010	1 cc
MVBG0020	2 cc
MVBG0050	5 cc
MVBG0100	10 cc



ACTIVI



PARTIALLY HYDRATED



FULLY HYDRATED

*In vitro assays demonstrated greater cellular health. Data on file.
** Including MSCs, osteoprogenitors and osteoblasts.

Grow new possibilities with our complete suite of orthobiologic solutions.

Amnion Solutions

Safe, natural graft options in a variety of form factors for use in various foot and ankle soft tissue procedures.



Item No.	Description	Size
MALQ1005D	Ambient Liquid	0.5 mL
MALQ1010D	Ambient Liquid	1.0 mL
MALQ1020D	Ambient Liquid	2.0 mL
MALQ2005D	Cryopreserved Liquid	0.5 mL
MALQ2010D	Cryopreserved Liquid	1.0 mL
MALQ2020D	Cryopreserved Liquid	2.0 mL
MA832	Dual Layer Patch	2 x 3 cm
MA833	Dual Layer Patch	4 x 4 cm
MA834	Dual Layer Patch	4 x 6 cm
MA835	Dual Layer Patch	4 x 8 cm

DBM Crunch

DBM putty mixed with corticocancellous chips to fill larger defects, osteotomies and fusions sites. Ideal for hindfoot and ankle fusions.



Item No.	Size
MA32601C	1 cc
MA32602C	2.5 cc
MA32605C	5 cc
MA32610C	10 cc

DBM Gel Paste

Extrudable and injectable for confined spaces. Ideal for smaller, distal extremity applications.



Item No.	Size
MDBM0010	1 cc
MDBM0025	2.5 cc
MDBM0050	5 cc
MDBM0100	10 cc

Cancellous Chips

100% human allograft

Item No.	Description	Size
MCAN0050	1-4mm	5cc
MCAN0100	1-4mm	10cc
MCAN0150	1-4mm	15cc
MCAN0300	1-4mm	30cc
MCAN1100	4-10mm	10cc
MCAN1150	4-10mm	15cc
MCAN1300	4-10mm	30cc



Ready when you are.

Pre-Hydrated Reconstructive Bioimplants

Pre-hydrated for speed and strength

The patent-pending aqueous calcium chloride solution allows wedges to be stored fully hydrated for immediate use.

- Eliminates idle time
- Preserves structural integrity of the graft
- Reduces the likelihood of intra- and post-operative graft crumbling and subsidence

Pre-shaped for stronger performance

Made of dense cancellous bone, each wedge is pre-shaped to eliminate the time and waste of cutting a bone block.

- Withstands the physical demands placed on structural grafts
- Full incorporates and resorbs
- Removes easily if needed



Item No.	Description	Size
MWCT0005	Cotton	5MM
MWCT0006	Cotton	6MM
MWCT0007	Cotton	7MM
MWEV0006	Evans	6MM
MWEV0008	Evans	8MM
MWEV0010	Evans	10MM
MWEV0012	Evans	12MM
MWUT0012	Utility	12MM

More innovations
to elevate your
outcomes

Associated Instrumentation and Implants

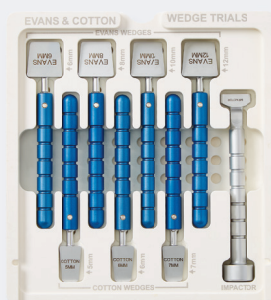
Articulating Pin Distractor

Allows you to adjust the correction, while providing unobstructed access to the osteotomy.



Wedge Trials

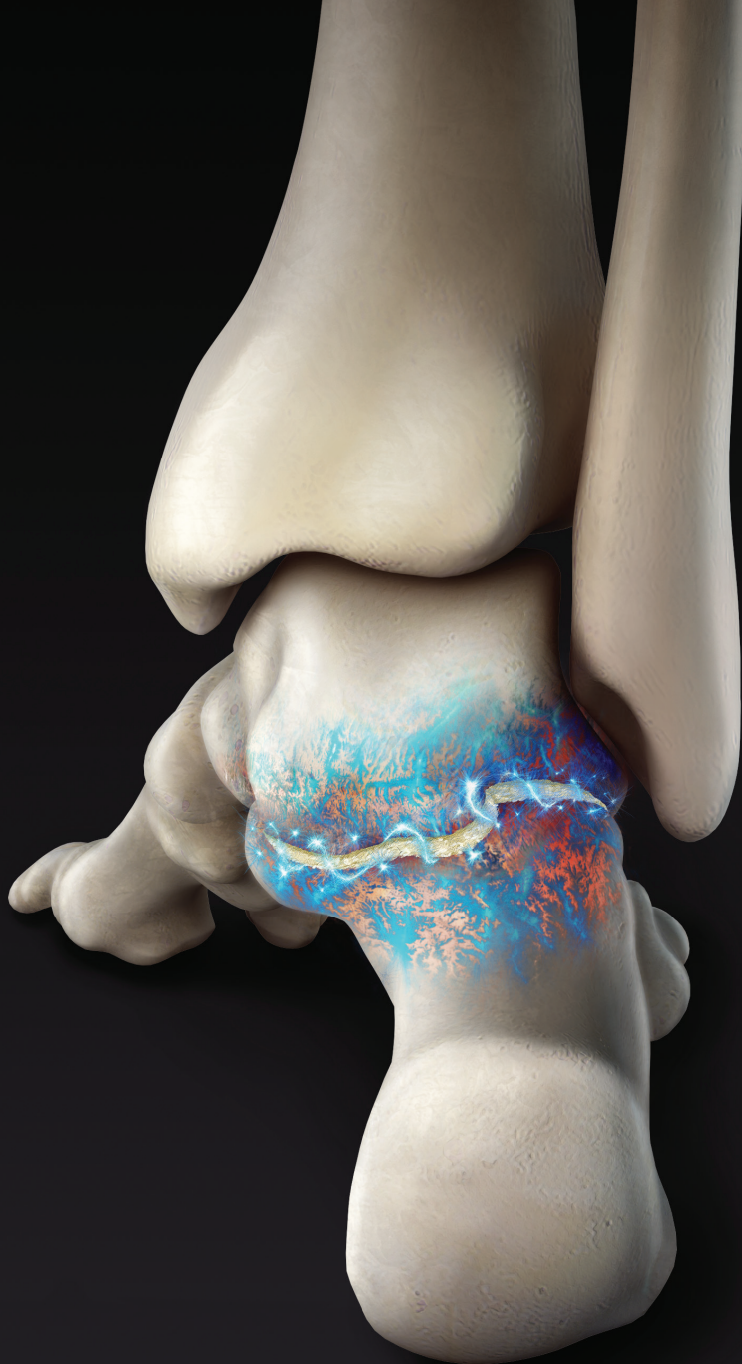
Allows you to view the correction visually and fluoroscopically before selecting the appropriate size wedge.



Evans and Cotton Plates

Graft spanning options for ancillary fixation. A complete selection of implants is available.





One step ahead.

For more than 50 years, we've been helping healthcare run better as the nation's largest privately held manufacturer and distributor of medical products. We're your strategic partner, empowered to innovate and tailor healthcare solutions that flex with your ever-changing needs. So you're always one step ahead.

To learn more or schedule a case, contact your Medline UNITE Representative or visit medlineunite.com.



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REFERENCES. 1. Muller, M.A., et al., Substitutes of structural and non-structural autologous bone grafts in hindfoot arthrodeses and osteotomies: a systematic review. BMC Musculoskelet Disord, 2013. 14(59): p. 1-10. 2. Arner, J.W. and R.D. Santrock, A historical review of common bone graft materials in foot and ankle surgery. Foot Ankle Spec, 2014. 7(2): p. 143-51. 3. Fitzgibbons, T.C., et al., Bone grafting in surgery about the foot and ankle, indication and techniques. J Am Acad Orthop Surg, 2011. 19(2): p. 112-20. 4. Haddad, S.L., et al., Intermediate and long-term outcomes of total ankle arthroplasty and ankle arthrodesis. A systematic review of the literature. J Bone Joint Surg Am, 2007. 89(9): p. 1899-905. 5. Tricot, M., et al., Clinical assessment of 115 cases of hindfoot fusion with two different types of graft: Allograft + DBM + bone marrow aspirate versus autograft + DBM. Orthopaedics & Traumatology: Surgery & Research, 2017(103): p. 697-702. 6. Frey, C., et al., A review of ankle arthrodesis: predisposing factors to nonunion. Foot Ankle Int, 1994. 15(11): p. 581-4.

ACTIGLASS Synthetic Bioactive Putty is manufactured by Bioventus LLC, Durham, NC., ACTISTIM Demineralized Fiber Putty and Cortical Fibers are manufactured by DCI Donor Services, Nashville, TN., ACTIVI Fiber Viable Bone Matrix is manufactured by Aziyo Biologics, Inc., Richmond, CA. Some products may not be available for sale in Mexico or Canada. We reserve the right to correct any errors that may occur within this brochure. © 2019 Medline Industries, Inc. All rights reserved. Medline is a registered trademark of Medline Industries, Inc. MKT19W66101 / LIT871R / 2.5 M / SG / 49