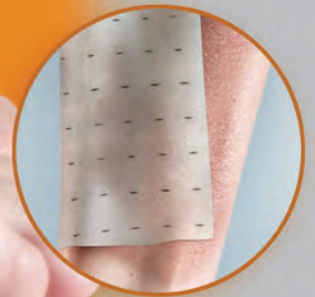
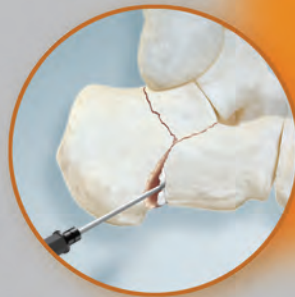
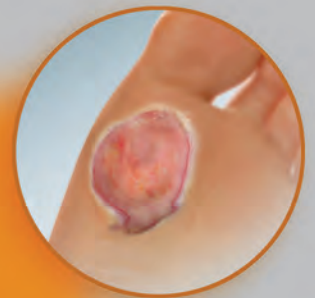


Foot & Ankle

Bone Graft Substitutes Soft Tissue Repair



Foot & Ankle



BONE GRAFT

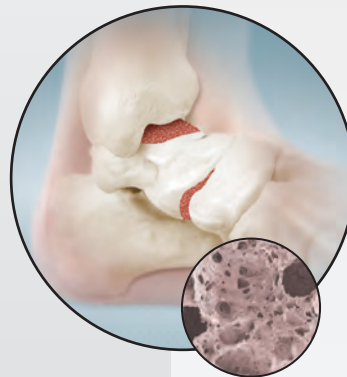
SYNTHETIC **Bone Graft** SUBSTITUTES

Vitoss

Vitoss is the #1 selling Synthetic Bone Graft for one good reason... **IT WORKS.**¹

Human clinical data supports its efficacy²—over 425,000 implantations worldwide.³

Vitoss BA has a unique porosity, bioactivity, and chemistry. Literature shows that bioactive glass stimulates osteoblastic activity and facilitates bone formation in in-vitro and animal models.⁴⁻⁶ Upon implantation, the ionic constituents (Si+, Na+, Ca2+) of bioactive glass are released into the surrounding environment and react with the bodily fluids.⁷⁻¹⁰ This reaction produces the deposition of a thin layer of physiologic calcium phosphate at its surface, favorable for osteoblast attachment.¹¹ This is commonly referred to as an osteostimulatory effect.^{4-6, 9, 12-14} In a direct comparison animal study, glass demonstrated accelerated healing when bioactive glass was added to an osteoconductive scaffold.¹⁵

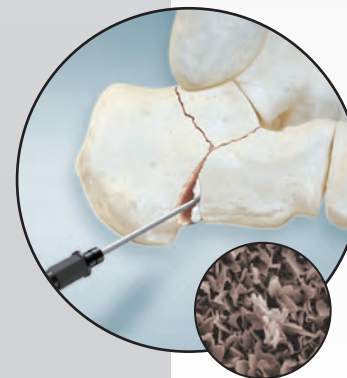


HydroSet

HydroSet is a calcium phosphate cement that converts to hydroxyapatite, the principle mineral component of bone. It is injectable, sculptable and fast setting.

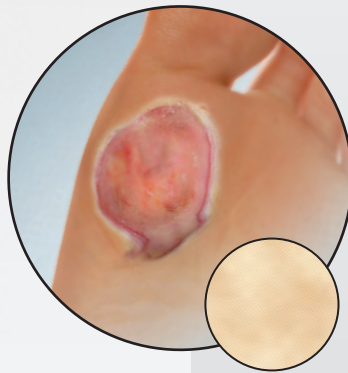
HydroSet can be drilled and tapped to accommodate the placement of provisional hardware during the surgical procedure.

Specifically formulated to set in a wet field environment, HydroSet exhibits outstanding wet-field characteristics.¹⁶



TISSUE

SOFT **Tissue** REPAIR



MemoDerm

MemoDerm is a sterile acellular dermal matrix derived from human allograft skin tissue, specifically designed to play a key role in the revascularization and repopulation of cells.

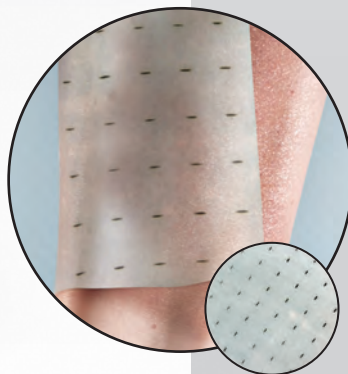
The unique processing method removes the epidermal layer and dermal cells, minimizing the potential for an immunogenic response.



TissueMend

By combining physical properties of strength and thickness with biologic properties that encourage cell and blood vessel penetration, the TissueMend collagen matrix is designed to handle the vigorous demands of tendon repair.

Over time, normal tissue remodeling occurs where TissueMend is incorporated into the native tissue and ultimately replaced by natural, healthy, native cells and tissue.



PriMatrix

PriMatrix is an acellular collagen matrix that provides an environment to support cell repopulation and revascularization during the wound healing process.

PriMatrix uses a proprietary process designed to remove cellular components and potentially infectious agents from raw material, while preserving the biological properties and structure of native collagen.

PriMatrix can be cut into strips to efficiently fill deep or tunneled wounds.

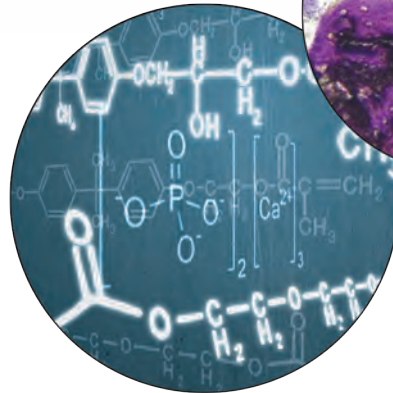
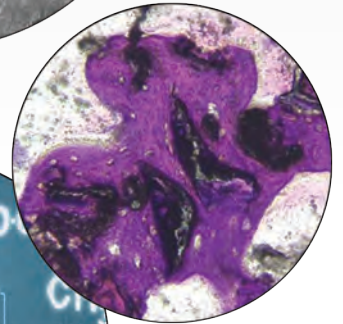
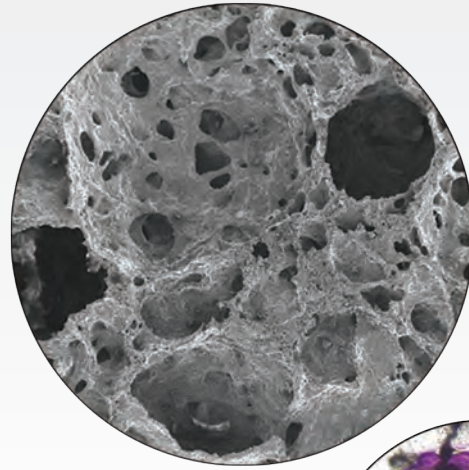
BONE



Vitoss BA features a combination of porosity, structure, bioactivity and chemistry. As a calcium phosphate that is up to 90% porous¹⁷, Vitoss's interconnected porosity allows for 3-D regeneration of bone, as opposed to creeping substitution. The increased porosity has been shown to lead to higher fusion rates in an animal study.¹⁸

Literature shows that bioactive glass stimulates osteoblastic activity and facilitates bone formation in in-vitro and animal models.⁴⁻⁶ Upon implantation, the ionic constituents (Si⁺, Na⁺, Ca²⁺) of bioactive glass are released into the surrounding environment and react with the bodily fluids.⁷⁻¹⁰ This reaction produces the deposition of a thin layer of physiologic calcium phosphate at its surface, favorable for osteoblast attachment.¹¹ This is commonly referred to as an osteostimulatory effect.^{4-6, 9, 12-14} In a direct comparison animal study, glass demonstrated accelerated healing when bioactive glass was added to an osteoconductive scaffold.¹⁵

Chemistry affects the rate of resorption. Bone grafts should resorb as new bone forms in a physiologic time frame. Vitoss is composed of β -TCP and is stable at physiologic pH. It resorbs during the natural remodeling process of bone.



Vitoss Products



Foam Pack

Vitoss Foam Pack is a versatile material that is stable in a fluid environment, can soak and hold bone marrow, and is compression-resistant.



Foam Strip

Vitoss Foam Strip is a compression-resistant, pre-formed strip that is flexible when wet, can soak and hold bone marrow, and is easily customized for various grafting applications.



Morsels

Vitoss Morsels are an economical way to provide a quality synthetic product to your patients for large volume grafting applications. Vitoss Morsels offer a cost comparative option to allograft chips.



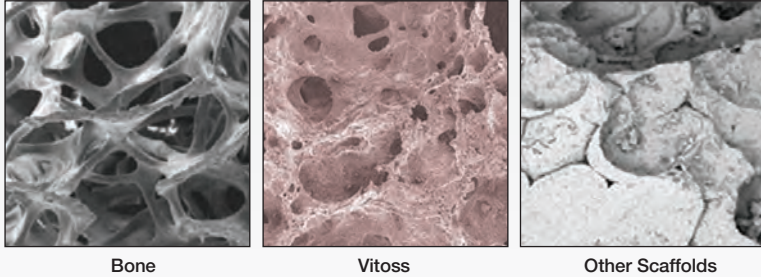
Canisters

Vitoss Canisters offer the handling and delivery of Vitoss Morsels with the use of bone marrow aspirate or blood. It is a closed system designed to minimize handling and exposure to potential contaminants.

HydroSet®

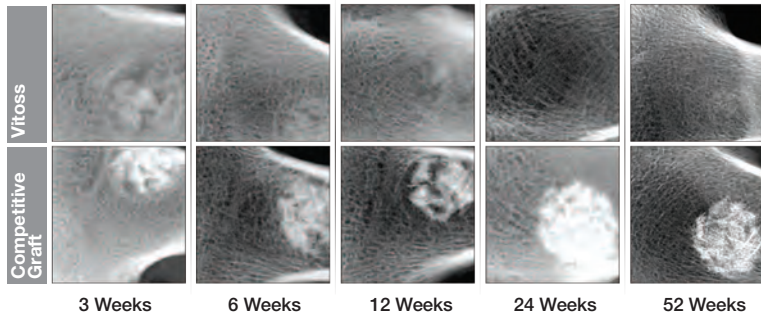
Injectable HA Bone Substitute

Porosity



Materials with interconnected porosity will allow for 3-D regeneration of bone as opposed to creeping substitution. Vitoss is a highly porous calcium-phosphate (up to 90% porous).¹⁷ Additionally, increased porosity has been shown to lead to higher fusion rates in an animal model.¹⁸

Not All Scaffolds are Created Equal



Comparison of Vitoss to competitive graft in a canine metaphyseal study in order to radiologically compare healing at 3, 6, 12, 24, and 52 weeks. A 10mm x 22mm drill defect was created in the canine proximal humerus and filled with 2cc of bone graft.¹⁹

HydroSet is a self-setting calcium phosphate cement indicated to fill bony voids or gaps of the skeletal system—extremities, craniofacial, spine, and pelvis. HydroSet is indicated only for bony voids or gaps that are not intrinsic to the stability of the bony structure.

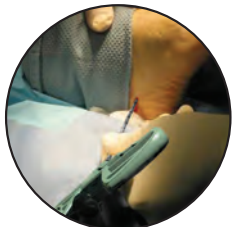
HydroSet cured in situ provides an open void/gap filler than can augment provisional hardware—K-Wires, plates, screws—to help support bone fragments during the surgical procedure. The cured cement acts only as a temporary support media and is not intended to provide structural support during the healing process.

HydroSet can be easily implanted via simple injection or manual application techniques for a variety of applications. It is specifically designed to set quickly once implanted under normal physiological conditions. HydroSet does not release any heat as it sets, preventing potential thermal injury.

- HydroSet is chemically formulated to set in a wet field environment,¹⁶ eliminating the need to meticulously dry the operative site prior to implantation.
- The composition of hydroxyapatite closely matches that of bone mineral, thus imparting osteoconductive properties.²⁰
- HydroSet can be drilled and tapped to accommodate the placement of provisional hardware during the surgical procedure.



Iliac Crest (PSIS, ASIS)



Calcaneus



Imbibe is a system of disposable bone marrow aspiration devices. The Imbibe bone marrow aspiration needles provide a minimally invasive way to harvest bone marrow. The needles come with both bullet-tip and sharp-trocar stylets, which are color coded. Bone marrow aspirate harvested using Imbibe bone marrow aspirate syringes can then be used to rehydrate Vitoss.

Product Specifications

Chemical Composition

Powder: Dicalcium phosphate dihydrate, Tetracalcium phosphate and Tri-sodium citrate

Liquid: Sodium phosphate, Polyvinylpyrrolidone and water
Packaging Contains: Bowl of powder, Liquid-filled syringe, Delivery syringe, Cannula and spatula.

Shelf Life: 1 year Sterilization: Ethylene oxide and Gamma irradiation

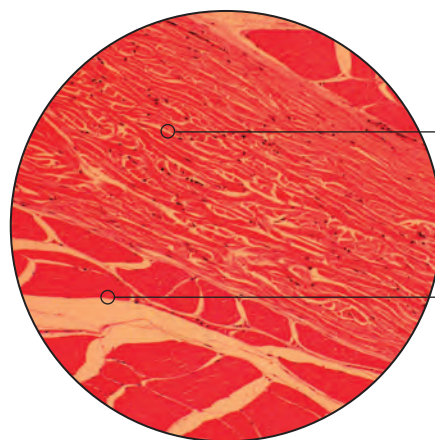
TISSUE

TissueMend[®] Soft Tissue Repair Matrix

The TissueMend Soft Tissue Repair Matrix is an acellular, collagen membrane used to repair and reinforce soft tissues where weakness exists.

A unique collagen composition and structure makes TissueMend an excellent biologically inspired scaffold for tissue remodeling. Non-artificial cross-linking helps to provide a medium for normal cellular growth and maturity, allowing for the development of new, healthy tissue.

When implanted, TissueMend provides an environment where host cells and supporting vasculature can take up residence and mature. Over time, normal tissue remodeling occurs where TissueMend is incorporated into the native tissue and ultimately replaced by native collagen fibers.



Host fibroblasts have migrated into and populated TissueMend beginning the remodeling process.

Note the lack of foreign body reaction to TissueMend. Inflammatory cells are absent and the implant has not been encapsulated.

Three month rat intramuscular biocompatibility evaluation

As a direct result of its technologically advanced production process, the TissueMend Soft Tissue Repair Matrix has demonstrated a lack of inflammation and foreign body reaction when implanted into native tissue.²¹

- Composed of 99% pure, non-denatured collagen
- Available as a rectangular patch with dimensions of 3cm x 3cm, 5cm x 6cm, or 6cm x 10cm
- As a result of its thickness, external forces are distributed over a greater surface area
- Can be easily cut and trimmed both before and after graft hydration
- Hydrates in seconds
- Non-crosslinked
- Rich in Type III Collagen
- Potential for reduced scarring²²

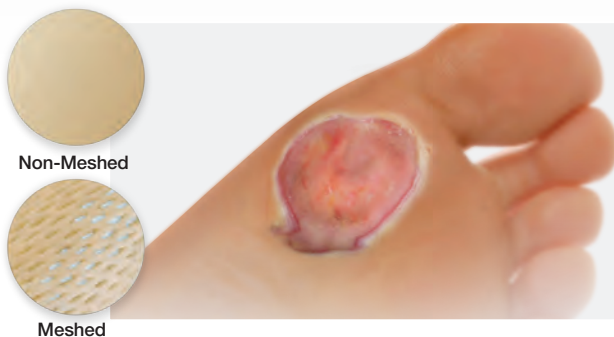
MemoDerm®

ACELLULAR DERMAL MATRIX

MemoDerm Acellular Dermal Matrix is derived from human allograft skin tissue that is terminally sterilized. The unique processing method removes the epidermal and dermal cells, minimizing the potential for an immunogenic response. The resulting acellular dermal matrix has the natural histomorphology preserved.

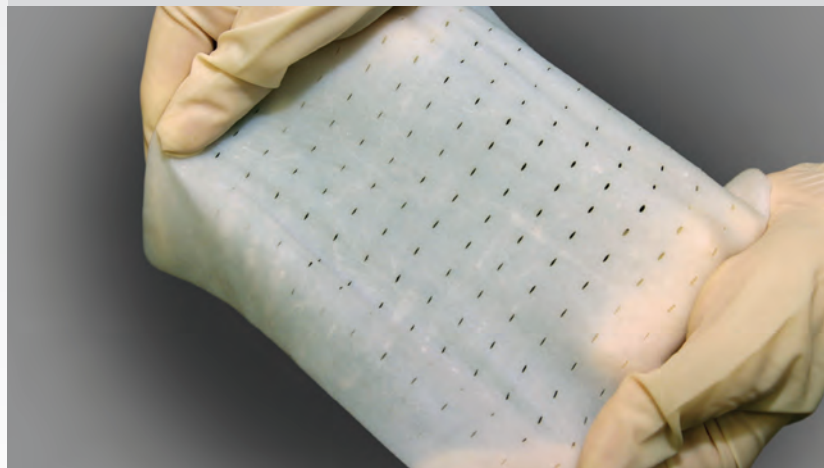
MemoDerm is specifically designed to play a key role in the revascularization and repopulation of cells. The proprietary gamma irradiation sterilization process does not damage the matrix. The cellular elements, typically considered immunogenic, are absent.

- Proprietary Gamma Precision Dose Sterilization process provides a Sterility Assurance Level (SAL) of 10^{-6}
- Excellent Tensile Strength
- Excellent Suture Retention Strength
- Indicated for the repair or replacement of damaged or inadequate integumental tissue. Note - meshed MemoDerm is to be used for wound care only (burns, ulcers)



PriMatrix™

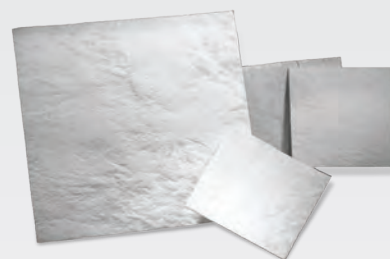
Dermal Repair Matrix



Providing an Environment to Manage Wound Healing

PriMatrix

PriMatrix is an acellular collagen matrix derived from fetal bovine dermis. This biologic matrix helps provide an environment to support the cell repopulation and revascularization process essential to wound healing. In addition to non-denatured Type I collagen, PriMatrix is rich in Type III collagen, which is active in developing and healing tissues. The product delivers this unique fetal collagen composition and architecture into the wound bed.



PriMatrix uses a proprietary process designed to remove cellular components and potentially infectious agents from raw material, while preserving the biological properties and structure of native collagen.

PriMatrix is offered in a variety of sizes and configurations; large and small pieces may be applied. PriMatrix can be cut into strips to efficiently fill deep or tunneled wounds. All configurations of PriMatrix may be used in conjunction with vacuum-assisted wound healing systems.

- Available in both fenestrated and non-fenestrated versions
- Three-year shelf life
- Biocompatible and cell-friendly with no artificial chemical crosslinking
- Terminally sterilized

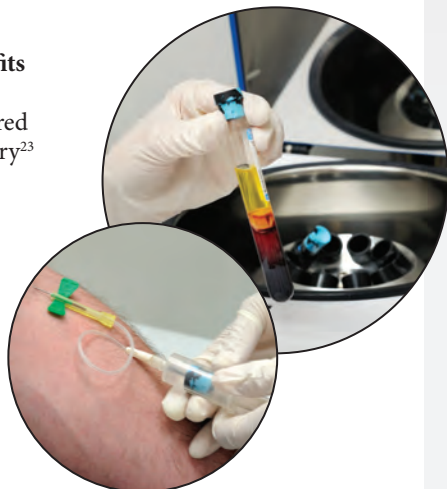
RegenKit® THT

Autologous Platelet Rich Plasma (A-PRP)

The RegenKit THT is designed to be used for the safe and rapid preparation of autologous platelet-rich plasma (A-PRP) from a small sample of blood at the patient's point of care. After the simple 4-step preparation, the A-PRP can be applied to an orthopedic surgical site, as deemed necessary by clinical use requirements.

Features and Potential Benefits

- Simplicity
- Low blood volume required
- Optimum platelet recovery²³
- Consistent isolation of platelet concentrate and plasma²³
- Leukocytes at physiological levels²³
- Erythrocyte depletion²³



DESCRIPTION PART NUMBER

Vitoss

Foam pack - Also available in Vitoss BA2** / BA*

1.2cc	**2102-2101
	*2102-1601, 2102-1401
2.5cc	**2102-2102
	*2102-1602, 2102-1402
5cc	**2102-2105
	*2102-1605, 2102-1405
10cc	**2102-2110
	*2102-1610, 2102-1410

Foam Strip - Also available in Vitoss BA*

25 x 100 x 4mm - 10cc	*2102-1500
25 x 100 x 4mm - 10cc..	2102-1100
25 x 100 x 8mm - 20cc	*2102-1520
25 x 100 x 8mm - 20cc..	2102-1120
25 x 240 x 4mm - 24cc..	2102-1101
25 x 50 x 4mm - 5cc.....	*2102-1505
25 x 50 x 4mm - 5cc.....	2102-1105
25 x 50 x 8mm - 10cc....	*2102-1510
25 x 50 x 8mm - 10cc....	2102-1110
75 x 100 x 4mm - 30cc..	2102-1130

Morsels

15cc Macro	2102-0020
30cc Macro	2102-0021
1.2cc Blocks	2102-0013
10cc Blocks	2102-0006
30cc Macro (x10)	2102-0131

Canisters

5cc Micro.....	2102-0026
5cc Standard	2102-0030
10cc Micro.....	2102-0027
10cc Standard.....	2102-0031
15cc Micro.....	2102-0028
15cc Standard.....	2102-0032
30cc Micro.....	2102-0029
30cc Standard.....	2102-0033

Imbibe

Syringes

10cc	2105-0010
20cc	2105-0020
30cc	2105-0030

Needles

11 gauge x 4in	2090-0027
11 gauge x 6in	2090-0028
8 gauge x 6in	2090-0029
8 gauge x 8in	2090-0047

Fenestrated

8 gauge x 6in	2090-0030
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TissueMend

5cm x 6cm.....	6495-9-001
6cm x 10cm.....	6495-9-004
3cm x 3cm.....	6495-9-006

MemoDerm

Non-Meshed

2cm x 4cm (0.33-0.61mm thickness)	HTM0330204
4cm x 8cm (0.80-1.40mm thickness)	HTM0800408
5cm x 5cm (0.80-1.20mm thickness)	HTM0900505
5cm x 5cm (1.00-2.00mm thickness)	HTM1500505
5cm x 10cm (2.00-3.50mm thickness)	HTM2000510

Meshed

4cm x 4cm (0.40-0.80mm thickness)	HTM0400404M
4cm x 8cm (0.40-0.80mm thickness)	HTM0400408M

RegenKit THT

RegenKit THT	8495-9-001
Universal Centrifuge.....	8495-9-010
Balancing Tube 3Pk	8495-9-998

PriMatrix

4cm x 4cm.....	6495-9-104
6cm x 6cm.....	6495-9-106
8cm x 8cm.....	6495-9-108
4cm x 4cm Fenestrated .	6495-9-114
6cm x 6cm Fenestrated .	6495-9-116
8cm x 8cm Fenestrated .	6495-9-118

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325 Corporate Drive
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t: 201 831 5000

www.stryker.com

Vitoss is manufactured by:

Stryker Orthobiologics
77 Great Valley Parkway
Malvern, PA 19355

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