

Phasix™ ST Mesh

Natural. Not Permanent. Proven Results.

Bioresorbable scaffold featuring proven Sepra® Technology



Unique mesh design

Phasix[™] ST Mesh combines two market-leading technologies into one product: monofilament resorbable Phasix[™] Mesh and a proven hydrogel barrier based on Sepra[®] technology.

Phasix[™] Mesh

- Biologically derived monofilament scaffold: Poly-4-hydroxybuterate (P4HB)
- Monomer form (4HB) is a naturally occurring human metabolite found in the brain, heart, liver, kidney, and muscle
- Phasix[™] Mesh is backed by multiple 5 year studies, showing durable outcomes.



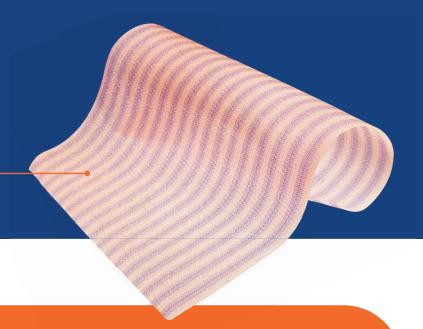
Hydrogel Barrier based on Sepra® Technology

- Hydrogel barrier on posterior side minimizes visceral tissue attachment¹
- Uncoated P4HB monofilament allows for tissue ingrowth on the anterior side¹
- Resorbs within 30 days1
- Used clinically since 2007

Phasix™ ST Mesh

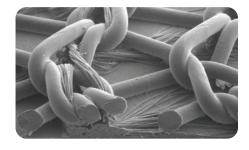
- Handles, sutures and fixates like a synthetic mesh
- Facilitates trocar deployment during laparoscopic placement

Longitudinal stripes aid with orientation and visibility during placement

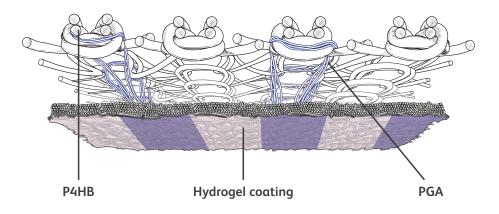


Why monofilament matters

Monofilament mesh designs have been deemed more biocompatible and less susceptible to bacterial adherence and colonization.²⁻⁶



Phasix™ ST Mesh Knitted monofilament base P4HB scaffold SEM Photo, 20X



Phasix™ Mesh: The next phase in hernia repair

Pre-clinical data suggests there are three main components of the Phasix™ Response:









Healthy tissue ingrowth

Pre-clinical and in vitro testing have shown that Phasix[™] Mesh rapidly incorporates while the body naturally initiates an early "repair" response by preferentially up-regulating the anti-inflammatory macrophage.^{7,8,9}

Pre-clinical data suggests that an early upregulation in anti-inflammatory macrophages leads to a regenerative repair while other materials preferentially up-regulate the pro-inflammatory macrophage leading to fibrosis and encapsulation.^{7, 8, 9}



Scan the QR code to see the full mechanism of action of Phasix™ Mesh





In pre-clinical models, Phasix™ Mesh rapidly integrated, resulting in a strong functional repair.

Predictable strength for the long run

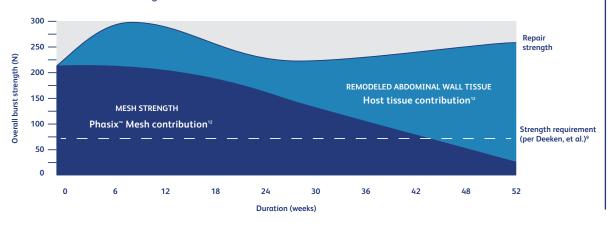
Phasix[™] Mesh gradually and predictably degrades within 12 to 18 months via hydrolysis leaving behind a durable, functional repair with over 3x the strength of the native abdominal wall.¹⁰

Pre-clinical data suggests:

3x strength requirement

Repair strength over time in a 52 Week Pre-clinical Model¹¹

Gradual transfer of strength from mesh to functional tissue





Sustained long-term repair strength after Phasix™ Mesh remodels

Study Design: A 3-centimeter round defect was created in the ventral abdominal wall of 25 pigs. Phasix™ Mesh was fixated directly over the defect with SorbaFix™ resorbable tacks. Ball burst testing was conducted at 6, 12, 26, and 52 weeks.

Results: In this porcine model, Phasix[™] Mesh total repair strength was more than 3 times the strength required for hernia repair based on pre-clinical testing conducted by Deeken and Matthews.

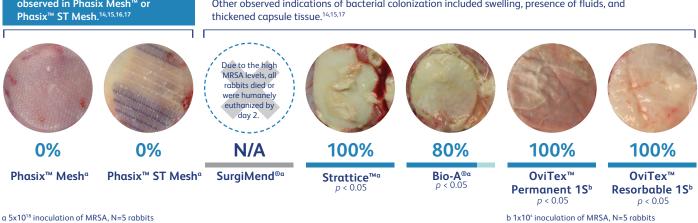
In pre-clinical testing, Phasix[™] Mesh has demonstrated promising results in the presence of MRSA. As degradable mesh is remodeled, the body naturally responds by producing antimicrobial peptides (AMPs). Traditionally, immunology studies link AMP's to fighting bacteria. 13, 14

Bacteria colonization 7 days post inoculation in preclinical testing¹⁰

Pockets with recoverable bacteria (%)

No presence of bacterial colonization observed in Phasix Mesh™ or

Presence of abscess (white material) observed in SurgiMend $^{\circ *}$, Strattice $^{\mathsf{TM}}$, Bio-A $^{\circ}$, and OviTex $^{\mathsf{TM}}$. Other observed indications of bacterial colonization included swelling, presence of fluids, and



a 5x1018 inoculation of MRSA, N=5 rabbits (%) Percentage of recoverable bacteria

No mesh is indicated for use in an infected or contaminated field

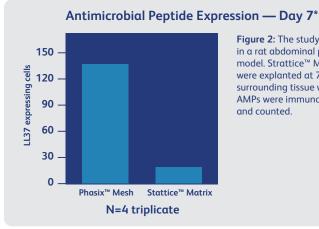


Figure 2: The study was performed in a rat abdominal partial thickness defect model. Strattice™ Matrix and Phasix™ Mesh were explanted at 7 days and the mesh and surrounding tissue was analyzed histologically. AMPs were immunofluorescently labeled, and counted.

Follow the data to a new standard of care Phasix™ Mesh



New Standard of Care

- Expert consensus panel established that a bioabsorbable mesh should be the standard of care for hernias.*19
- Roth, et.al have shown that long term outcomes with Phasix[™] Mesh showed results similar to permanent mesh.²⁰



Patient Quality of Life

 5-year outcomes have shown that patient quality of life following hernia repair with Phasix[™] Mesh can improve immediately and continues to improve up to 5 years following repair. Concluding that quality of life should be the primary outcomes of success.¹⁸



Cost savings

- Budget impact analysis has shown Phasix[™] Mesh may result in a decrease in the total hospital budget of about \$158.87 million, with a savings per patient of about \$799.55.²¹
- Phasix[™] Mesh also results in \$9,570 savings per case when compared to Strattice[™] Matrix.¹¹

See the full growing body of clinical evidence





Commonly used mesh

Surgeons have had to choose between permanent synthetic meshes and biologic grafts — and their inherent pros and cons.

Permanent synthetic meshes

- Easy to use²⁴
- Reduced recurrence vs. primary closure
- Can also be used robotically and laparoscopically
- Postoperative complications can lead to mesh removal or reoperation²⁵

Phasix™ ST Mesh_

A biologically derived scaffold with a hydrogel barrier for intraabdominal placement that is bioabsorbable. It has been designed to provide the repair strength of a synthetic mesh and the remodeling characteristics of a biologic.

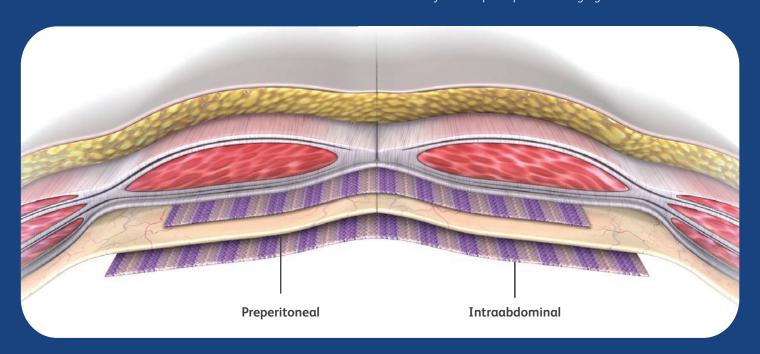
Biologic grafts

- Naturally derived material
- Potentially reduces need for mesh removal if a complication occurs²⁶
- Accelerated degradation in the presence of bacteria may lead to mesh failure/ higher recurrence rate^{27,28}
- Some biologics may be difficult to fixate and handle²

Phasix™ ST Mesh may be placed in either an intraabdominal or preperitoneal position after primary hernia defect closure. Primary hernia defect closure should be achieved prior to placing the mesh.

Hernia defect closure can be achieved through an open or minimally invasive approach (i.e., laparoscopic, robotic). Recent studies suggest potential advantages of defect closure include:^{22,23}

- Decreased "dead" space, which can reduce the risk of postoperative seromas
- May contribute to restoration of a functional abdominal wall
- May reduce postoperative bulging at the hernia defect site



Product codes Phasix™ ST Mesh

Product code	Shape	Dimensions
1200008G	Round	8 cm (3")
1200011G	Round	11 cm (4.5")
1200015G	Round	15 cm (6")
1200710G	Rectangle	7 cm x 10 cm (3" x 4")
1201010G	Square	10 cm x 10 cm (4" x 4")
1201015G	Rectangle	10 cm x 15 cm (4" x 6")
1201020G	Rectangle	10 cm x 20 cm (4" x 8")
1201325G	Rectangle	13 cm x 25 cm (5" x 10")
1201520G	Rectangle	15 cm x 20 cm (6" x 8")
1202025G	Rectangle	20 cm x 25 cm
1202530G	Rectangle	25 cm x 30 cm
1203035G	Rectangle	30 cm x 35 cm

Indications. Phasix™ Mesh is indicated to reinforce soft tissue where weakness exists, in patients undergoing abdominal, plastic, and reconstructive surgery in ventral hernia repair and other abdominal fascial defect procedures. Contraindications. 1. Because Phasix™ Mesh is fully resorbable, it should not be used in repairs where permanent wound or organ support from the mesh is required. Warnings. 1. Phasix™ Mesh must not be put in direct contact with the bowel or viscera. 2. The use of any mesh or patch in a contaminated or infected wound can lead to fistula formation and/or extrusion of the mesh. 3. Mesh manufacture involves exposure to tetracycline hydrochloride and kanamycin sulfate. The safety and product use for patients with hypersensitivities to these antibiotics is unknown. The use of this mesh in susceptible patients with known allergies to tetracycline hydrochloride or kanamycin sulfate should be avoided. 4. The safety and effectiveness of Phasix™ Mesh in the following applications has not been evaluated or established: a. Pregnant or breastfeeding women b. Pediatric use c. Neural and cardiovascular tissue. 5. If an infection develops, treat the infection may require the removal of the mesh. 6. To prevent recurrences when repairing hernias, the mesh should be sized with appropriate overlap for the size and location of the defect, taking into consideration any additional clinical factors applicable to the patient. Careful attention to mesh fixation placement and spacing will help prevent excessive tension or gap formation between the mesh and fascial tissue. 7. The mesh is supplied sterile. Prior to use, carefully examine package and product to verify neither is damaged and that all seals are intact. Do not use if the foil pouch or package is damaged or open, or if the center of the temperature indicator on the foil pouch is black. 8. This mesh has been designed for single use only. Reuse, reprocessing, resterilization, or repackaging may compromise the structural integrity and/or essential material

Indications. Phasix™ ST Mesh is indicated for use in the reinforcement of abdominal soft tissue, where weakness exists, in ventral and hiatal hernia repair procedures.

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Mesh manufacture involves exposure to tetracycline hydrochloride and kanamycin sulfate. The safety and product use for patients with hypersensitivities to these antibiotics is unknown. Use of this mesh in patients with known allergies to tetracycline hydrochloride or kanamycin sulfate should be avoided. 2. Ensure proper orientation; the coated side of the mesh should be oriented against the bowel or sensitive organs. Do not place the uncoated mesh side against the bowel or sensitive organs. Do not place the uncoated mesh side is placed in direct contact with the bowel or viscera. (Reference Surface Orientation section.) 3. The safety and effectiveness of Phasix™ ST Mesh in bridging repairs has not been evaluated or established. 4. The safety and effectiveness of Phasix™ ST Mesh in laparoscopic/robotic ventral hernia repair procedures has not been evaluated or established. 5. The use of any mesh or patch in a contaminated or infected wound could lead to fistula formation and/or extrusion of the mesh and it is not recommended. 6, If an infection develops, treat the infection aggressively. Consideration should be given regarding the need to remove the mesh. An unresolved infection may require the removal of the mesh. 7. To prevent recurrences when repairing hernias, mesh should be sized with appropriate overlap for the size and location of the defect, taking into consideration any additional clinical factors applicable to the patients. Careful attention to mesh fixation placement and spociating will help revent excessive tension or gog fromation between the mesh and fascial tissue. 8 For hiotal hernia repair, the use of Phasix™ ST Mesh in the following applications has not

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