



Biodesign[®]

ADVANCED TISSUE REPAIR



WHAT IS BIODESIGN[®] MATERIAL?

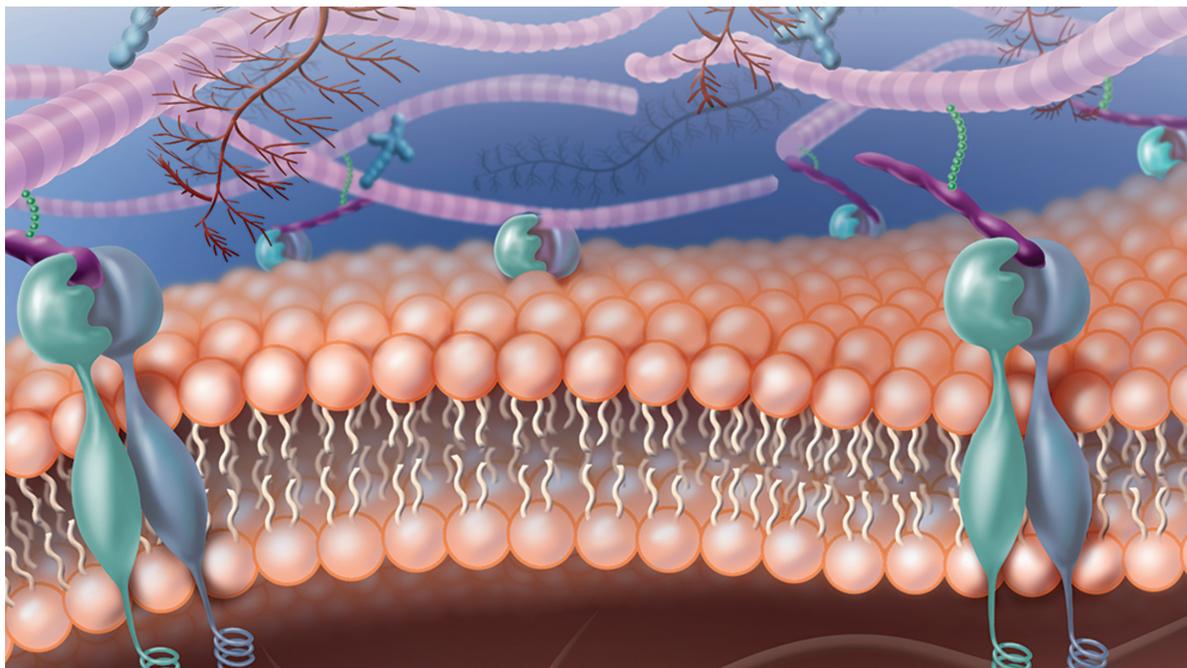
Biodesign[®] grafts are composed of natural extracellular matrix (ECM) derived from **porcine small intestinal submucosa (SIS)**.

SIS is a platform technology behind numerous tissue-repair products that span multiple medical specialties.

The ECM is a complex latticework of proteins and structural molecules that helps guide the growth of cells.¹

The proprietary processing methodology decellularizes the SIS material while preserving natural matrix molecules such as **collagen, proteoglycans, and glycosaminoglycans**.²

The result is a scaffold that, when implanted, provides a location for host cells to infiltrate and remodel into vascularized tissue.³

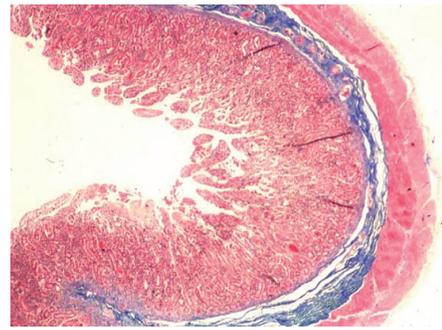
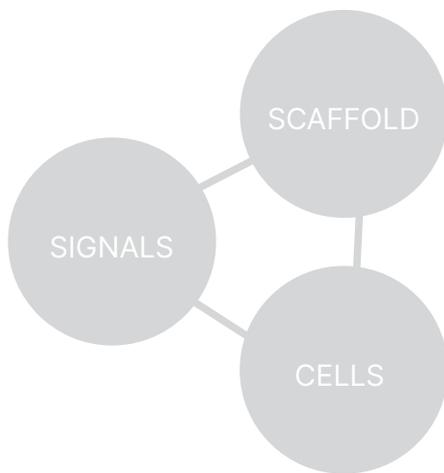


HOW DO BIODESIGN[®] GRAFTS WORK?

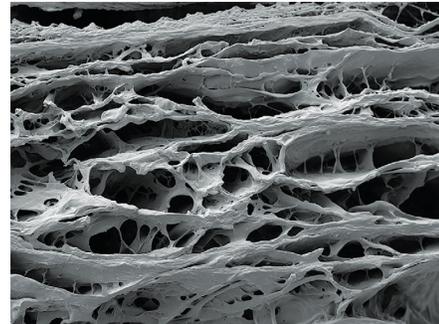
There are three essential components to healing: a scaffold, signals, and cells.

Biodesign material's open lattice structure provides a scaffold for tissue ingrowth.³

The body's signaling mechanisms help patient cells infiltrate the scaffold and remodels into natural host tissue.



Porcine small intestine, submucosa in blue.

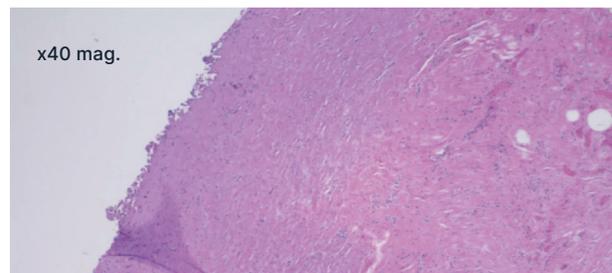


Extracellular matrix structure of lyophilized porcine small intestinal submucosa

MICROSCOPIC VIEW OF THE REMODELING PROCESS⁴



Biodesign graft prior to implantation



8 months after implantation

The Biodesign graft (left) allows for the growth of organized tissue, as seen in this biopsy sample, taken eight months after implantation (right). The above images are of the Biodesign Plastic Surgery Matrix implanted in breast tissue.⁴

A CASE STUDY

Durable repair consisting of vascularized tissue.



Placement of a Biodesign® graft



15 days post-op



40 days post-op



60 days post-op

A PROVEN TECHNOLOGY

With more than 2,000 total published articles, Biodesign material is one of the most well-studied graft technologies on the market.*

>2000

Published articles*

>900

Describing use
in **humans***

35

> 5 year
follow-up*

27

Published
OHNS studies*

38

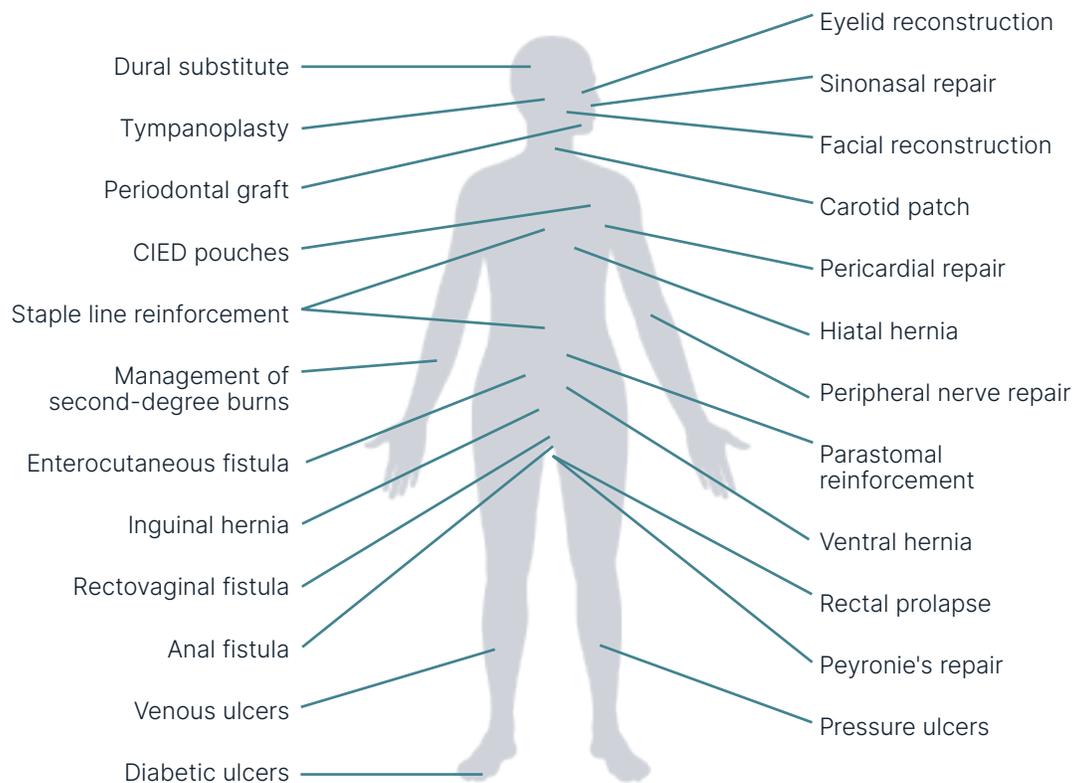
Randomized,
controlled trials*

CLINICAL DATA PUBLICATIONS

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PUBLISHED HISTORY OF THERAPEUTIC USES

The technology behind Biodesign material has been used in numerous applications throughout the body.



Products for SOFT TISSUE REPAIR

References

1. Hubbell JA. Materials as morphogenetic guides in tissue engineering. *Curr Opin Biotechnol.* 2003;14:551-558.
2. Hodde J, Janis A, Ernst D, Zopf D, Sherman D, Johnson C. Effects of sterilization on an extracellular matrix scaffold: Part I. Composition and matrix architecture. *J Mater Sci Mater Med.* 2007;18(4):537-543.
3. Nihsen ES, Johnson CE, Hiles MC. Bioactivity of small intestinal submucosa and oxidized regenerated cellulose/collagen. *Adv Skin Wound Care* 2008;21:479-486.
4. Data on file with Evergen.

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