



your surgical expertise, our
peripheral nerve injury solutions



revolutionizing the
science of nerve repair™



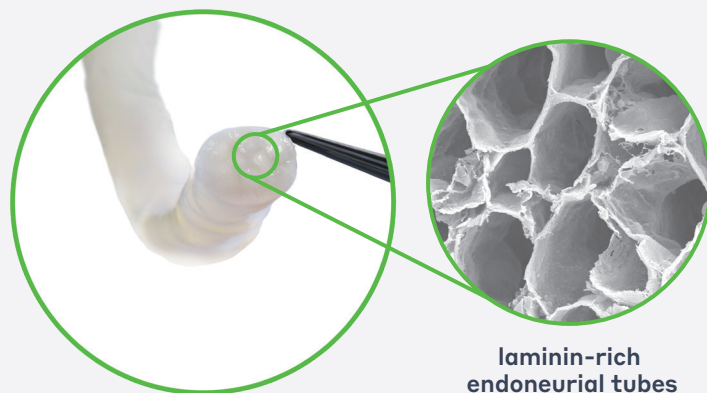
Peripheral nerve repair surgeons and health care providers understand the importance of innovative technologies that improve outcomes and positively impact patient lives.

The nerve repair space is constantly changing and Axogen is leading the science of restoring functionality to damaged nerves. We are passionate about helping restore quality of life to patients by providing innovative, clinically proven, and economically effective solutions.

Only Axogen offers a comprehensive suite of clinically proven solutions for your nerve repair needs – ranging from injured nerves in-continuity, to gaps over 70 mm, and non-reconstructable nerve ends. Depending on the injury, our technologies may be used alone or in conjunction with one another to produce the optimal outcome. Our technologies provide an option for surgeons to reconstruct injured nerves without the comorbidities associated with an additional surgical site.

Axogen has been a pioneer in regenerative medicine and is the only company solely dedicated to peripheral nerve repair. Together we can continue **revolutionizing the science of nerve repair.**





laminin-rich
endoneurial tubes

the **only** off-the-shelf biologically active processed human nerve allograft intended for the surgical repair of peripheral nerve discontinuities

key advantages

Structural support for cellular migration and regenerating axons

Preserves the 3-dimensional (3D) micro-architecture of native human nerve

Organized, linear, and continuous scaffold across the length of the graft

Clinically proven, off-the-shelf solution

82% meaningful recovery in sensory, mixed, and motor nerve gaps in multi-center study¹

Eliminates the comorbidities and operative time associated with a second surgical site

Over 125 peer-reviewed clinical publications

Proprietary cleansing, decellularizing, and sterilizing process

Preserves the extracellular matrix (ECM) of human nerve while removing inhibitors to axon regeneration

Extensive testing to ensure the quality of the graft and guarantee identity, purity, potency, and safety

Decellularization and sterilization methods ensure a safe product without the need for immunosuppression

Intra-operative versatility

Available in a variety of lengths and diameters to meet a range of anatomical needs

Handles, sutures, and flexes at joints similar to native nerve



82%

meaningful recovery
throughout
the body¹



#1

**choice for
hand surgeons**
in digital nerve
gaps of 2 cm²



95%

**meaningful
recovery** after
neuroma excision
and reconstruction¹

options for 5 mm to 70 mm



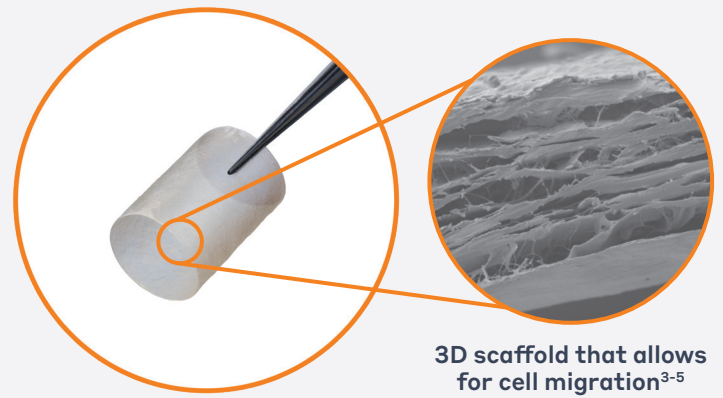
avance®
nerve graft



avance®
nerve graft + **axoguard**
nerve connector®



avance®
nerve graft + **axoguard**
nerve protector®



3D scaffold that allows for cell migration³⁻⁵

semi-translucent coaptation aid designed for Connector-Assisted Repair® (CAR) of transected nerves up to 5 mm

key advantages

CAR alleviates tension and inflammation at the critical zone of regeneration^{6,7}

- Disperses tension across repair site
- Moves suture inflammation away from coaptation

CAR is a clinically proven alternative to direct suture repair⁶

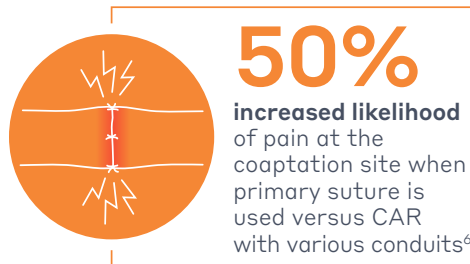
- Reduces the risk of forced fascicular mismatch
- Aids alignment of nerve ends
- Reduces the potential for axonal escape

Vascularizes and remodels

- Small intestine submucosa (SIS) incorporates into the patient's own tissue, creating a physical barrier to surrounding soft tissue^{6,8}
- Supports natural wound healing

Intra-operative versatility

- Available in a variety of lengths and diameters to meet a range of anatomical needs
- Reinforces the coaptation site of direct, graft, or cable graft repairs
- Off-the-shelf option, stored at room temperature with a minimum 18-month shelf life



Porcine SIS material offers excellent flexibility and is semi-translucent compared to opaque competitive collagen products

option for 0 mm to 5 mm



axoguard
nerve connector®

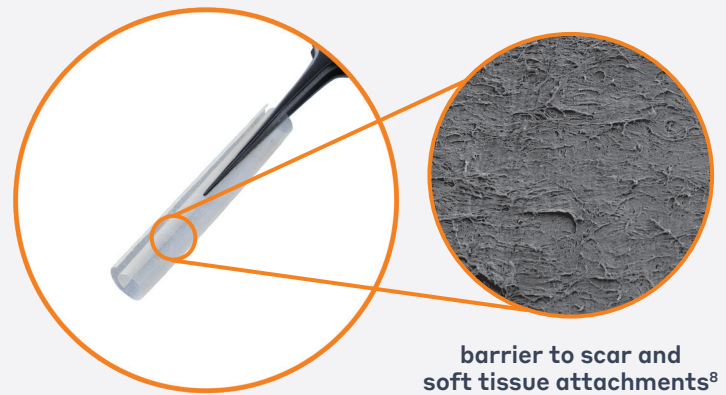
options for 5 mm to 70 mm+



avance®
nerve graft + **axoguard**
nerve connector®

autograft + **axoguard**
nerve connector®

*IQVIA data



the **only** small intestine submucosa (SIS)
implant designed to protect injured and
compressed nerves up to 40 mm

key advantages

Protects and separates

Separates and protects the nerve from the
surrounding tissues during the healing process
Provides a protective barrier to axonal escape⁹

Allows for nerve gliding

Minimizes the potential for soft tissue attachment
and nerve entrapment by protecting the nerve⁸

Vascularizes and remodels

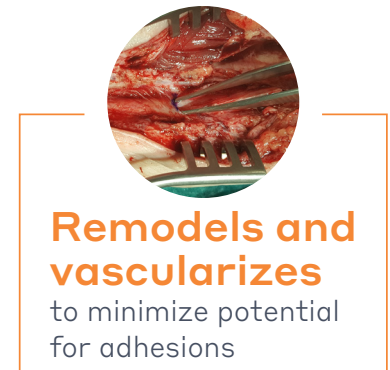
Small intestine submucosa (SIS) incorporates into the
patient's own tissue, creating a physical barrier to
surrounding structures^{10,11}

Supports natural wound healing

Intra-operative versatility

Available in a variety of lengths and diameters to meet
a range of anatomical needs

Off-the-shelf option, stored at room temperature with
a minimum 18-month shelf life



option for no transection
or repaired nerve



axoguard
nerve protector®

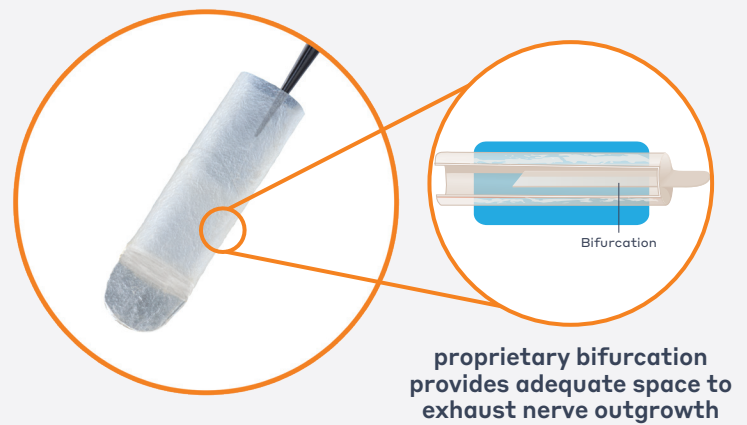
options for 5 mm to 70 mm+



avance®
nerve graft + **axoguard**
nerve protector®



autograft + **axoguard**
nerve protector®



proprietary SIS matrix designed to reduce the development of symptomatic or painful neuromas

key advantages

Protects and isolates

Reduces the development of painful neuromas¹²
Provides a barrier from neurotrophic factors and mechanical stimulation

Vascularizes and remodels

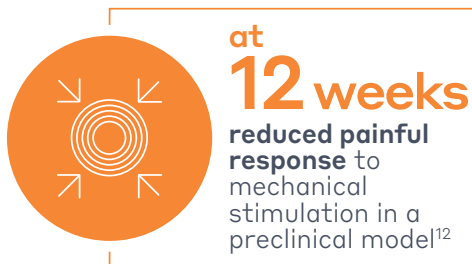
Material gradually incorporates into patient's own tissue, creating a physical barrier to surrounding soft tissue^{3,10,11}

Intra-operative versatility

Ideal for anatomic areas with limited or no musculature
Alternative to historical techniques, such as burying in muscle or bone
Available in a variety of diameters

Ideal handling

End tab facilitates anchoring the device to surrounding tissue, away from the surgical incision and mechanical stimulation
Off-the-shelf option, stored at room temperature with an 18 month shelf life




one company for all your surgical nerve repair solutions

avance®
nerve graft



Biologically active, processed human nerve allograft developed for bridging nerve discontinuities up to 70 mm

axoguard
nerve connector®



Semi-translucent coaptation aid for nerve transections up to 5 mm

axoguard
nerve protector®



Extracellular matrix that remodels to protect injured nerves and reinforce nerve reconstructions

axoguard
nerve cap®



Separates nerve end from surrounding environment to protect from mechanical stimulation and reduce painful neuroma formation

Code	Dimensions
111215	1–2 mm x 15 mm
211215	2–3 mm x 15 mm
311215	3–4 mm x 15 mm
411215	4–5 mm x 15 mm
111230	1–2 mm x 30 mm
211230	2–3 mm x 30 mm
311230	3–4 mm x 30 mm
411230	4–5 mm x 30 mm
111250	1–2 mm x 50 mm
211250	2–3 mm x 50 mm
311250	3–4 mm x 50 mm
411250	4–5 mm x 50 mm
111270	1–2 mm x 70 mm
211270	2–3 mm x 70 mm
311270	3–4 mm x 70 mm
411270	4–5 mm x 70 mm

Code	Dimensions
AGX110	1.5 mm x 10 mm
AGX210	2 mm x 10 mm
AGX310	3 mm x 10 mm
AGX410	4 mm x 10 mm
AGX510	5 mm x 10 mm
AGX610	6 mm x 10 mm
AGX710	7 mm x 10 mm
AGX115	1.5 mm x 15 mm
AGX215	2 mm x 15 mm
AGX315	3 mm x 15 mm
AGX415	4 mm x 15 mm
AGX515	5 mm x 15 mm
AGX615	6 mm x 15 mm
AGX715	7 mm x 15 mm

Code	Dimensions
AG0220	2 mm x 20 mm
AG0320	3.5 mm x 20 mm
AG0520	5 mm x 20 mm
AG0720	7 mm x 20 mm
AG1020	10 mm x 20 mm
AG0340	3.5 mm x 40 mm
AG0540	5 mm x 40 mm
AG0740	7 mm x 40 mm
AG1040	10 mm x 40 mm

Code	Dimensions
AGT215	2 mm x 15 mm
AGT315	3 mm x 15 mm
AGT415	4 mm x 15 mm

references

- Safa B, Jain S, Desai MJ, et al. Peripheral nerve repair throughout the body with processed nerve allografts: Results from a large multicenter study. *Microsurgery*. 2020;40(5):527–537.
- Azouz SM, Lucas HD, Mahabir RC, Noland SS. A survey of the prevalence and practice patterns of human acellular nerve allograft use. *Plast Reconstr Surg Glob Open*. 2018;6(8):e1803.
- Nihsen ES, Johnson CE, Hiles MC. Bioactivity of small intestinal submucosa and oxidized regenerated cellulose/collagen. *Adv Skin Wound Care*. 2008;21(10):479–486.
- Brown-Etris M, Cutshall WC, Hiles MC. A new biomaterial derived from small intestine submucosa and developed into a wound matrix device. *Wounds*. 2002;14:150–166.
- Ko YG, Park JH, Lee JB. Growth behavior of endothelial cells according to electrospun poly (D,L-Lactic-Co-Glycolic Acid) fiber diameter as a tissue engineering scaffold. *Tissue Eng Regen Med*. 2016;13(4):343–351.
- Ducic I, Safa B, DeVinney E. Refinements of nerve repair with connector-assisted coaptation. *Microsurgery*. 2017;37(3):256–263.
- Postlethwait RW, Willigan DA, Ulin AW. Human tissue reaction to sutures. *Ann Surg*. 1975;181(2):144–50.
- Kokkalis ZT, Pu C, Small GA, Weiser RW, Venouziou AI, Sotereanos DG. Assessment of processed porcine extracellular matrix as a protective barrier in a rabbit nerve wrap model. *J Reconstr Microsurg*. 2011;27(1):19–28.
- Thomson SE, Ng NY, Riehle MO, et al. Bioengineered nerve conduits and wraps for peripheral nerve repair of the upper limb. *Cochrane Database Syst Rev*. 2017;2017(3):CD012574.
- Badylak S, Kokini K, Tullius B, Whitson B. Strength over time of a resorbable bioscaffold for body wall repair in a dog model. *J Surg Res*. 2001;99(2):282–287.
- Badylak SF. The extracellular matrix as a scaffold for tissue reconstruction. *Semin Cell Dev Biol*. 2002;13(5):377–383.
- Tork S, Faleris J, Engemann A, Deister C, DeVinney E, Valerio IL. Application of a porcine small intestine submucosa nerve cap for prevention of neuromas and associated pain. *Tissue Eng Part A*. 2020;26(9–10):503–511.

visit our website for
more information



indications and trademark disclaimers

Avance Nerve Graft

REGULATORY CLASSIFICATION: Avance Nerve Graft is a human tissue for transplantation. Avance Nerve Graft is processed and distributed in accordance with U.S. FDA requirements for human cellular and tissue-based products (HCT/P) under 21 CFR Part 1271 regulations, U.S. State regulations and the guidelines of the American Association of Tissue Banks (AATB). Additionally, international regulations are followed as appropriate. This graft is to be dispensed only by or on the order of a licensed physician.

INDICATIONS FOR USE: Avance Nerve Graft is a processed nerve allograft (human) intended for the surgical repair of peripheral nerve discontinuities to support regeneration across the defect.

CONTRAINDICATIONS: Avance Nerve Graft is contraindicated for use in any patient in whom soft tissue implants are contraindicated. This includes any pathology that would limit the blood supply and compromise healing or evidence of a current infection.

Axoguard Nerve Connector

INDICATIONS FOR USE: Axoguard Nerve Connector is indicated for the repair of peripheral nerve discontinuities where gap closure can be achieved by flexion of the extremity. The device is supplied sterile and is intended for one-time use.

CONTRAINDICATIONS: This device is derived from porcine source and should not be used for patients with known sensitivity to porcine material.

Axoguard Nerve Protector

INDICATIONS FOR USE: Axoguard Nerve Protector is indicated for the repair of peripheral nerve injuries where there is no gap. The device is supplied sterile and is intended for one-time use.

CONTRAINDICATIONS: This device is derived from porcine source and should not be used for patients with known sensitivity to porcine material.

Axoguard Nerve Cap

INDICATIONS FOR USE: Axoguard Nerve Cap is indicated to protect a peripheral nerve end and to separate the nerve from surrounding environment to reduce the development of symptomatic or painful neuroma.

CONTRAINDICATIONS: This device is derived from porcine source and should not be used for patients with known sensitivity to porcine material. Axoguard Nerve Cap is contraindicated for use in any patient in whom soft tissue implants are contraindicated. This includes any pathology that would limit the blood supply and compromise healing or evidence of a current infection.

Axoguard Nerve Cap should not be implanted directly under the skin.
NOTE: This device is not intended for use in vascular applications.

Disclaimer: Not all products are available internationally.

Axogen Corporation

Phone 888.Axogen1 (888.296.4361)

Fax 386.462.6801

customer@axogeninc.com

www.axogeninc.com

© 2021 Axogen Corporation.

The stylized "a" logo and Avance Nerve Graft are trademarks of Axogen Corporation. Axoguard is a registered trademark of Axogen Corporation. Axoguard Nerve Connector and Axoguard Nerve Protector are manufactured in the United States by Cook Biotech Incorporated, West Lafayette, Indiana. MKTG-0164 R10

**revolutionizing the
science of nerve repair™**

