

axoguard HA+ nerve protector (HA+)
flat sheet design | optimal handling properties
versatile anatomical positioning

axoguard HA+ nerve protector™ is the first SIS, hyaluronate and alginate biomaterial to address peripheral nerve injuries

key advantages

Optimal handling properties

Flat sheet configuration and larger sizes offer flexibility in surgical application

Strength to support suturing¹

Quick to hydrate¹

Sodium hyaluronate and sodium alginate gel layer on both sides

Forms lubrication layer reducing friction through traumatic tissue beds¹

Acts as a temporary barrier between the nerve and surrounding tissue¹

Reformulated SIS is an optimal ECM to rebuild mesoneurium

Greater M2 macrophage response promotes tissue remodeling compared to crosslinked collagen devices²

Extracellular matrix (ECM) promotes vascularization of material^{2,3}

Short- and long-term protection

Gel layer is present during critical scar formation phase¹

ECM layer vascularizes and remodels into a mesoneurium-like layer³

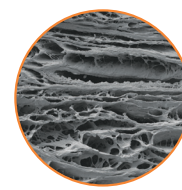
Throughout healing, nerve can glide through the tissue bed with less chance of attachment to adjacent soft tissues¹



HA⁺
gel present during critical phase of scar formation¹

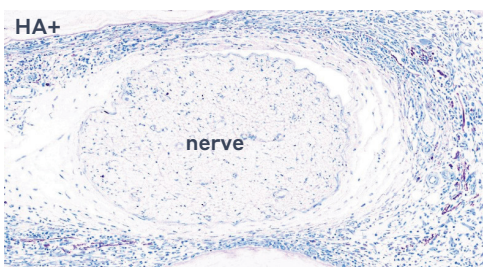


quick & easy
hydration,
placement,
and securing
with preserved
tensile strength¹



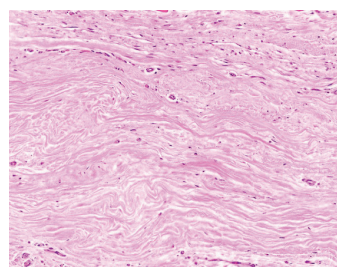
ECM layer
that favors
pro-healing M2
macrophage
response²

Non-constricting protection



Toluidine-blue histology 7 days after implant showing no constriction of the nerve¹

With site-specific remodeling

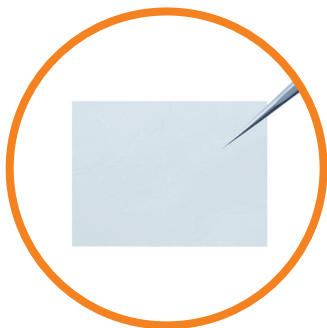
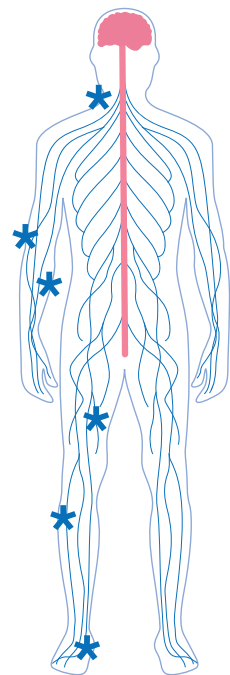


H&E histology after 16 weeks demonstrates remodeling as mesoneurium-like tissue layer begins to form¹

axoguard HA+ nerve protector can protect nerves from soft tissue attachments, secondary issues caused by scarring, and mechanical irritation from adjacent implants.⁴⁻⁶

Applications suitable for axoguard HA+ nerve protector include:

- Spinal accessory nerve after neck dissection
- Radial nerve laying on metal plating for humeral shaft and olecranon fractures
- Ulnar nerve during a revision cubital tunnel release or transposition
- Median nerve through the carpal tunnel in revisions
- Traumatic injuries of the sciatic nerve
- Common peroneal nerve after tibial plateau fractures
- Tibial nerve through tarsal tunnel in revisions



Code	Dimensions
AGHA12	1 cm x 2 cm
AGHA22	2 cm x 2 cm
AGHA24	2 cm x 4 cm
AGHA36	3 cm x 6 cm
AGHA48	4 cm x 8 cm

references

1. Data on file

2. Zhukauskas R, Fischer DN, Deister C, Alsmadi NZ, Mercer D. A comparative study of porcine small intestine submucosa and cross-linked bovine type I collagen as a nerve conduit. *J Hand Surg Glob Online*. 2021; 3(5): 282-288. doi:10.1016/j.jhsg.2021.06.0

3. 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. doi:10.1055/s-0030-1267379

4. Papatheodorou, L. K., Williams, B. G., & Sotereanos, D. G. (2015). Preliminary results of recurrent cubital tunnel syndrome treated with neurolysis and porcine extracellular matrix nerve wrap. *Journal of Hand Surgery*, 40(5), 987-992. <https://doi.org/10.1016/j.jhsg.2015.02.031>

5. Imran, R., George, S., Jose, R., Shirley, C., & Power, D. M. (2022). Clinical outcomes following neurolysis and porcine collagen extracellular matrix wrapping of scarred nerves in revision carpal tunnel decompression. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 75(12), 4496-4512. <https://doi.org/10.1016/j.bjps.2022.04.010>

6. Halsey, J. N., Therattil, P. J., Viviano, S. L., Fleegler, E. J., & Lee, E. S. (2015). Bowler's thumb: Case report and review of the literature. *ePlasty*, 15, e47. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4623560/>

indications and trademark disclaimers

Axoguard HA+ Nerve Protector

INDICATIONS FOR USE: Axoguard HA+ Nerve Protector is indicated for the management and protection of peripheral nerve injuries where there is no gap, or following closure of the gap.

CONTRAINDICATIONS: This device is derived from porcine source and the lubricant coating is composed of sodium hyaluronate and sodium alginate. The device should not be used for patients with known sensitivity to porcine, alginate, or hyaluronate materials.

visit our
website
for more
information



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