

POST-SURGICAL ADHESIONS: A COMMON AND COSTLY CHALLENGE

CLINICAL PROBLEMS^{1,2}

- Post-operative pain
- Loss of range of motion
- Need for repeat surgeries

COMPLICATIONS^{1,2}

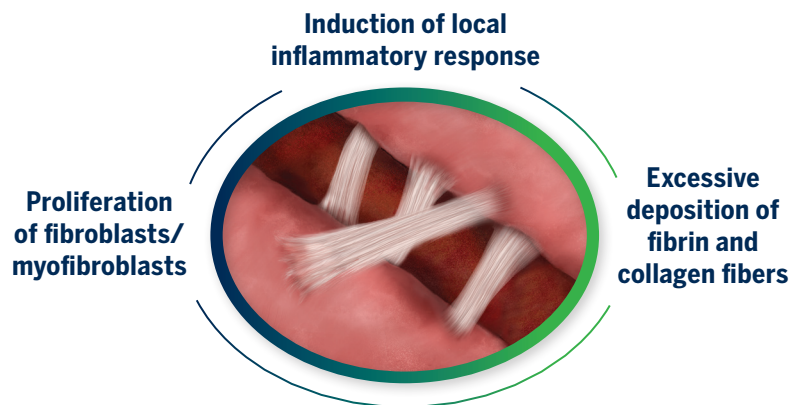
Result in nearly
1 million
additional days of
inpatient care annually

TREATMENT COSTS^{1,2}

\$2.5 billion
annually in the U.S.

ADHESION FORMATION FACTORS

Fibrous bands form as a result of dysregulated tissue repair processes^{1,3}



USING NUSHIELD® TO SUPPORT THE PREVENTION OF ADHESIONS

EXPANDING BARRIER OPTIONS

- Biomaterials are often used as surgical adhesion barriers to separate tissues^{1,4}
- Placental allografts are an emerging barrier option⁵⁻⁸
- Placental allografts have been trusted for over a century⁹



COMPLETE LAYERS SET NUSHIELD APART

- ✓ NuShield is a shelf-stable, dehydrated placental allograft that undergoes a unique preservation method and retains all layers of the placental membrane, including the spongy layer¹⁰⁻¹²
- ✓ NuShield retains its ECM scaffold and growth factors/cytokines^{10,13}
- ✓ NuShield has been used for surgical implantation for nearly a decade¹⁴

ECM=extracellular matrix

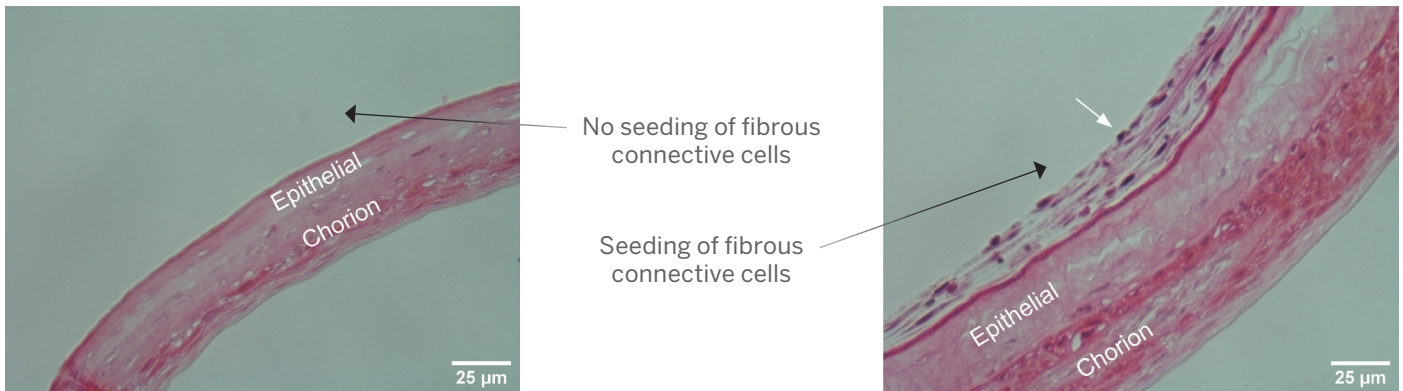
NUSHIELD® EVIDENCE AS A SURGICAL BARRIER

STUDY 1 IN VITRO BARRIER MODEL

Overview: Fibrous connective cells were seeded onto the epithelial (amnion) side of NuShield and assayed for adhesion¹⁵

KEY FINDINGS

- NuShield acted as a barrier¹⁵
- Demonstrated fibroblast attachment without significant infiltration through the product¹⁵



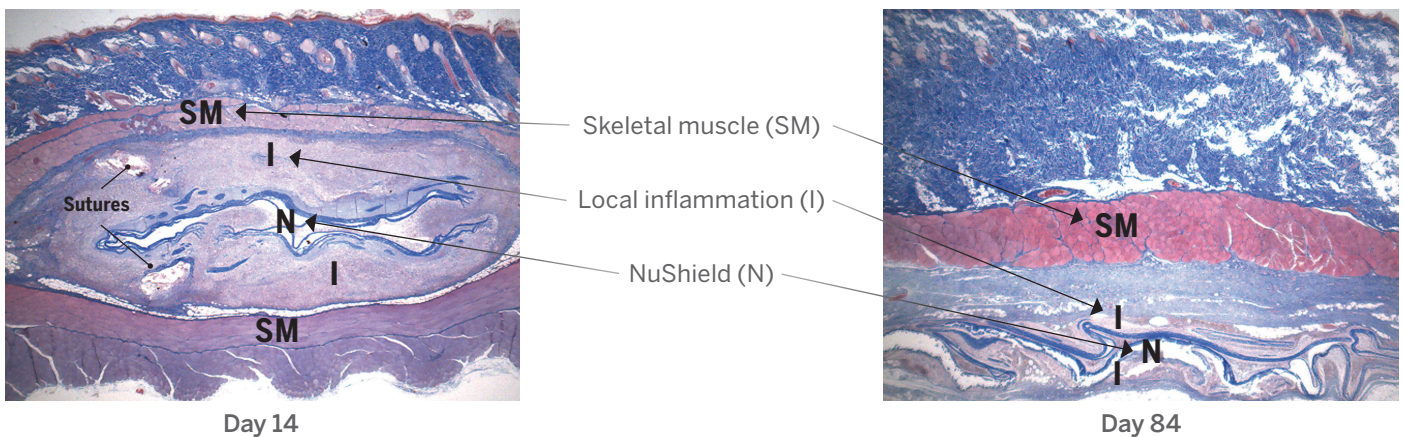
H&E imaging of NuShield with and without seeding of fibrous connective cells on the epithelial side

STUDY 2 IN VIVO DWELL TIME

Overview: Using a Lewis rat model, NuShield was implanted subcutaneously. Animals were assessed for implantation size and inflammation over the course of the study¹⁶

KEY FINDINGS

- NuShield remained intact for up to 84 days¹⁶
- Local inflammatory response decreased over time, with minimal inflammation noted at 84 days¹⁶
- Serum samples displayed no signs of systemic inflammation¹⁶



Representative Masson's Trichrome stained images from day 14 and day 84 post-implantation

References: **1.** Liao J, et al. *Bioact Mater.* 2023;26:387-412. **2.** Fatehi Hassanabad A, et al. *Biomedicines.* 2021;9(8):867. **3.** Fatehi Hassanabad A, et al. *Biomolecules.* 2021;11:1027. **4.** Park H, et al. *Materials (Basel).* 2020;13(14):3056. **5.** Consensus Panel Recommendations on the use of Placental-Based Allografts in the Surgical Setting; Sept 2021. Available at: <https://www.hmpgloballearningnetwork.com/site/eplasty/supplement-consensus-panel-recommendations-use-placental-based-allografts-surgical>. **6.** Ang J, et al. *Clin Podiatr Med Surg.* 2018;35(3):311-321. **7.** Hitscherich PG, et al. *Front Cardiovasc Med.* 2022;9:809960. **8.** Toman J, et al. *Facial Plast Surg Aesthet Med.* 2022;24(1):48-53. **9.** Rizzuti A, et al. *Chronic Wound Care Manage Res.* 2014;1:67-72. **10.** McQuilling JP, et al. *Int Wound J.* 2019;16(3):827-840. **11.** Niknejad H, et al. *Eur Cells Mater.* 2008;15:88-99. **12.** Data on file. Description of BioLoc Process. Organogenesis Inc. **13.** McQuilling JP, et al. *Wound Repair Regen.* 2019;27(6):609-621. **14.** Data on file. NuShield-807. Organogenesis Inc. **15.** Data on file. NS_DR-005. Organogenesis Inc. **16.** Data on file. NS_DR-006. Organogenesis Inc.