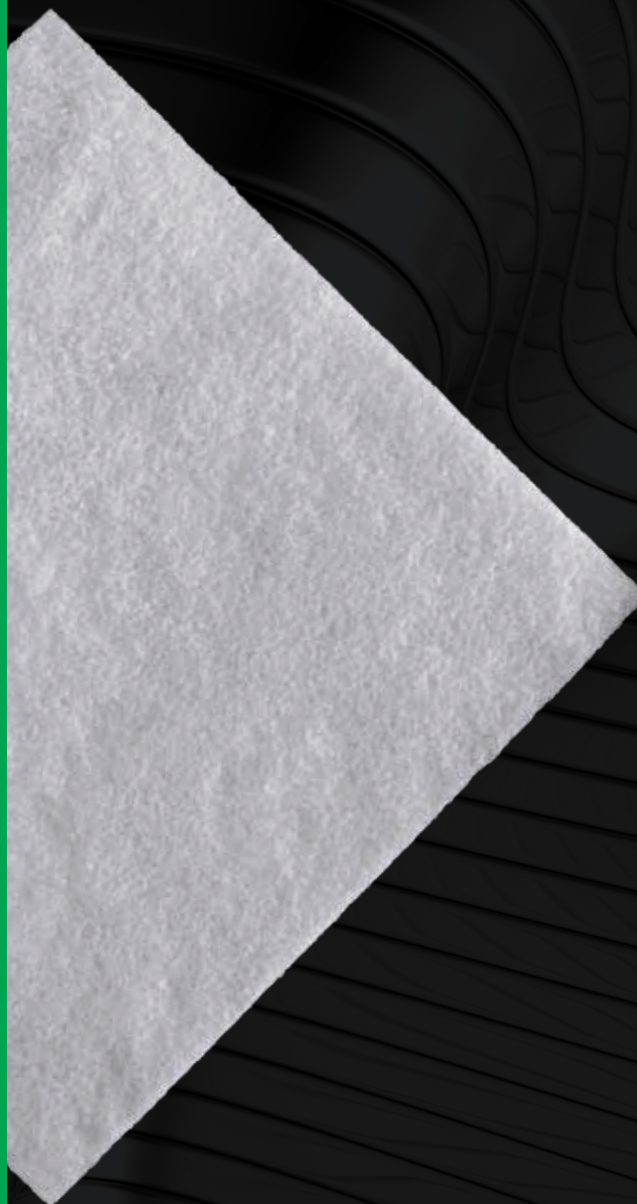


Integra™ DuraGen®

Dural Graft Matrix

Limit uncertainty with the
most clinically proven graft for
natural dural repair.



INTEGRA™
LIMIT UNCERTAINTY



Integra™ DuraGen® Matrix

A Breakthrough in Dural Repair

The Original Onlay Dural Graft



DuraGen matrix is one of the safest and most effective onlay grafts for the restoration and repair of dura mater.

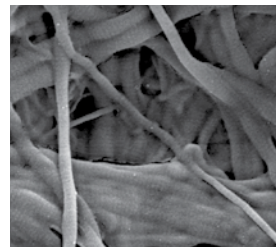
- DuraGen matrix is made from a controlled collagen source and is treated with a proprietary process designed to remove antigenic components, yielding our **Ultra Pure Collagen™**.
- It is conformable and contours instantly and effectively to the complex surfaces of the brain and spinal cord, rapidly forming a biological seal to protect against CSF leakage.
- **Integra pioneered regenerative medicine.**
- **Over 10 million collagen implants.**
- **Integra created the onlay dural graft paradigm.**



How DuraGen Works

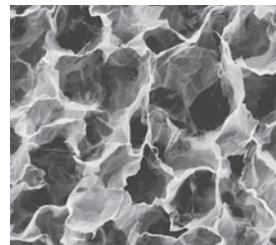
The onlay nature of DuraGen matrix revolutionized duraplasty.

- The highly porous collagen scaffold promotes rapid fibrin clot formation.
- DuraGen matrix rapidly provides watertight closure to prevent CSF leakage while promoting natural dural growth.



It Starts with Ultra Pure Collagen™

Limits the risk of infection, immunological response, and foreign body reaction.



Precisely Engineered Porosity

Allows rapid fibrin clot formation to stop CSF leakage and facilitates uniform tissue regeneration throughout the matrix.



Excellent Conformability and Handling

Provides intimate graft contact with dural margins to keep the graft in place without suture and to reduce leakage.

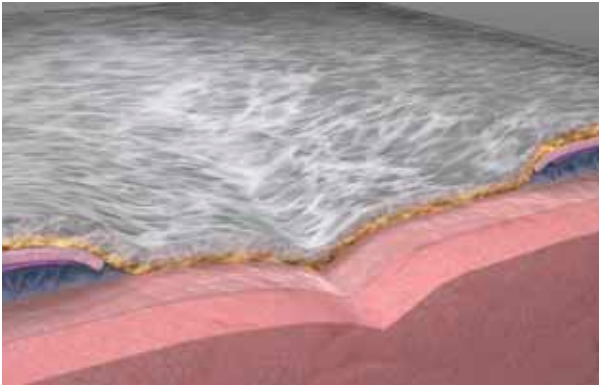
Integra™ DuraGen®

Dural Graft Matrix

- **The original onlay dural graft.**
- **Extensively clinically studied.**
- **Engineered with advanced sealing, flexibility, and resorption capabilities for a safe and simple repair.**

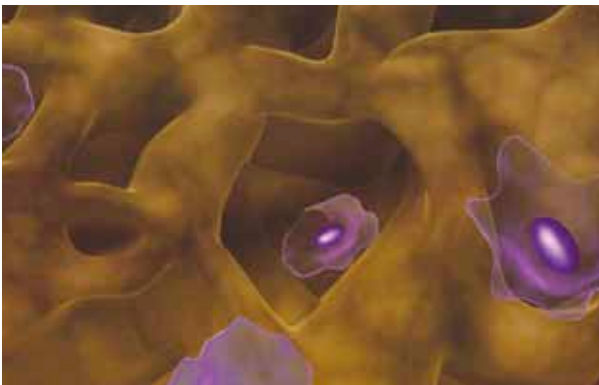
Scientific Superiority

1 Excellent Conformability and Adherence



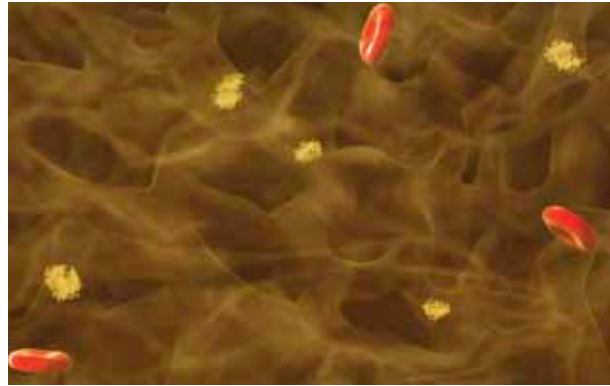
- The hydrated graft conforms intimately to the complex surfaces of the exposed brain or spinal cord.
- Matrix rapidly fills with the patient's blood and plasma exudate.

3 Rapid Fibroblast Infiltration



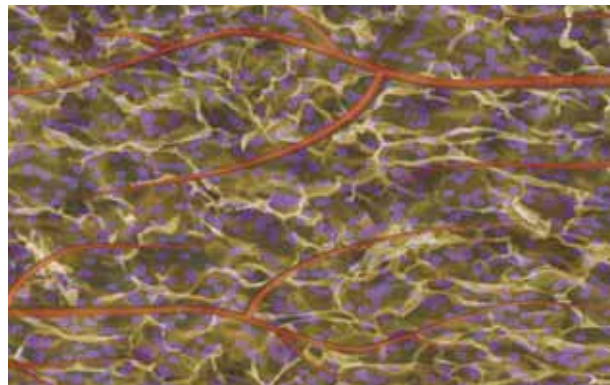
- Ultra Pure Collagen, in combination with the open pore structures, promotes fibroblast activity and acts as a scaffold for cells to deposit new collagen.
- The graft structure features pores of 50 to 150 microns, within the optimal size for rapid fibroblast infiltration.
- Fibroblasts begin to migrate into the matrix 2 to 3 days after implantation and start the process of laying down new collagen.

2 Rapid CSF Leak Prevention

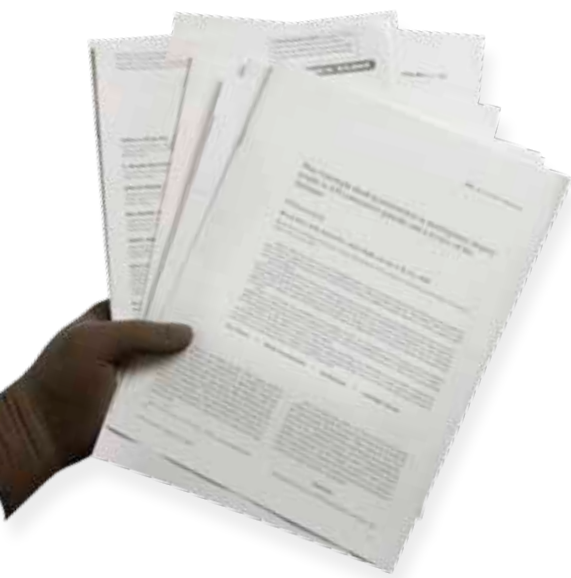


- Type 1 collagen matrix rapidly initiates platelet aggregation.
- Upon contact with the collagen matrix, platelets degranulate and release clotting factors that initiate fibrin clot formation.
- The fibrin clot creates a watertight barrier and binds the implanted matrix to the patient's dura.

4 Uniform Tissue Formation



- Within two weeks of implantation, a neodural membrane has formed between the dural margins to permanently close the dural defect.
- After 6-8 weeks, the implant is resorbed and replaced by dura.
- After 1 year, the neodura has developed into mature dura.



Over 1,400 patients in 10 published clinical studies

- 0% Foreign body response
- 1.9% Infection rate
- 2.1% Leakage rate

Integra's DuraGen products have more published human clinical data than any other collagen-based dural graft. Clinical studies have shown effective protection against CSF leakage with sutureless closure and no reports of foreign body reactions or graft rejections.

Summary outcome statistics derived from the following 10 clinical studies:

1. Danish SF, et al: Experience with acellular human dura and bovine collagen matrix for duraplasty after posterior fossa decompression for Chiari malformations. *J Neurosurg Pediatrics* 104:16-20, 2006
2. Harvey RJ, et al: Closure of large skull base defects after endoscopic transnasal craniotomy. *J Neurosurg* 111: 271-329, 2009
3. Horaczek JA, et al: Collagen matrix in decompressive hemicraniectomy. *Operative Neurosurgery* 63: ONS176-81, 2008
4. Lee JH, et al: Dural reconstruction in meningioma surgery in, Lee JH (ed): *Meningiomas: Diagnosis, Treatment and Outcome*. London: Springer, 2009, pp 619-624
5. Litvack ZN, et al: Dural augmentation: Part I: evaluation of collagen matrix allografts for dural defect after craniotomy. *Neurosurgery* 65:890-897, 2009
6. Narotam PK, et al: Collagen matrix (DuraGen) in dural repair: analysis of a new modified technique. *SPINE* 292:861-2867, 2004
7. Narotam PK, et al: Collagen matrix duraplasty for cranial and spinal surgery: a clinical and imaging study. *J Neurosurg* 106:45-51, 2007
8. Narotam PK, et al: Collagen matrix duraplasty for posterior fossa surgery: evaluation of surgical technique in 52 adult patients. *J Neurosurg* 111:380-386, 2009
9. Sade B, et al: Non-watertight dural reconstruction in meningioma surgery: results in 439 consecutive patients and a review of the literature. Clinical article. *J Neurosurg* [epub ahead of print August 13, 2010. DOI: 10.3171/2010.7.JNS10460]
10. Stendel R, et al: Efficacy and safety of a collagen matrix for cranial and spinal dural reconstruction using different fixation techniques. *J Neurosurg* 109:215-221, 2008

DuraGen Dural Graft Matrix

Catalog Number	Size	Units/Case
ID-1101	1 in x 1 in (2.5 cm x 2.5cm)	1
ID-1105	1 in x 1 in (2.5 cm x 2.5cm)	5
ID-1301	1 in x 3 in (2.5 cm x 7.5cm)	1
ID-1305	1 in x 3 in (2.5 cm x 7.5cm)	5
ID-2201	2 in x 2 in (5 cm x 5cm)	1
ID-2205	2 in x 2 in (5 cm x 5cm)	5
ID-3301	3 in x 3 in (7.5 cm x 7.5cm)	1
ID-3305	3 in x 3 in (7.5 cm x 7.5cm)	5
ID-4501	4 in x 5 in (10 cm x 12.5cm)	1

1 Million Implants and Counting

Only Integra DuraGen grafts provide the confidence of utilizing a dural matrix which has been implanted over one million times.

For more information or to place an order, please contact:

Integra ■ 311 Enterprise Drive, Plainsboro, NJ 08536

800-997-4868 USA ■ 609-936-5400

integralife.com

