

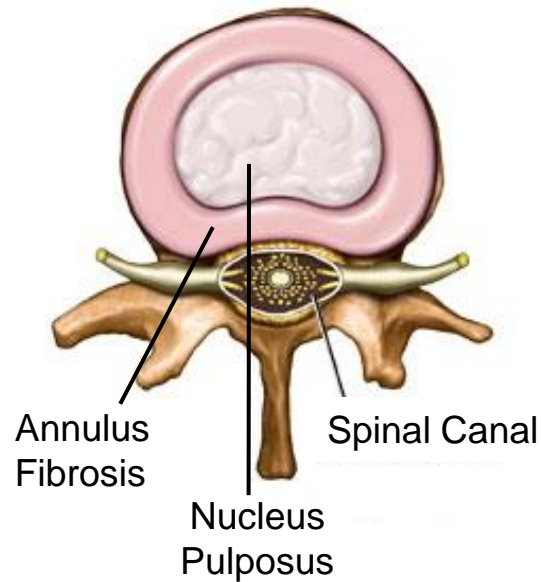
ANNULOPATCH

A thin but strong material that prevents spinal discs from reherniating

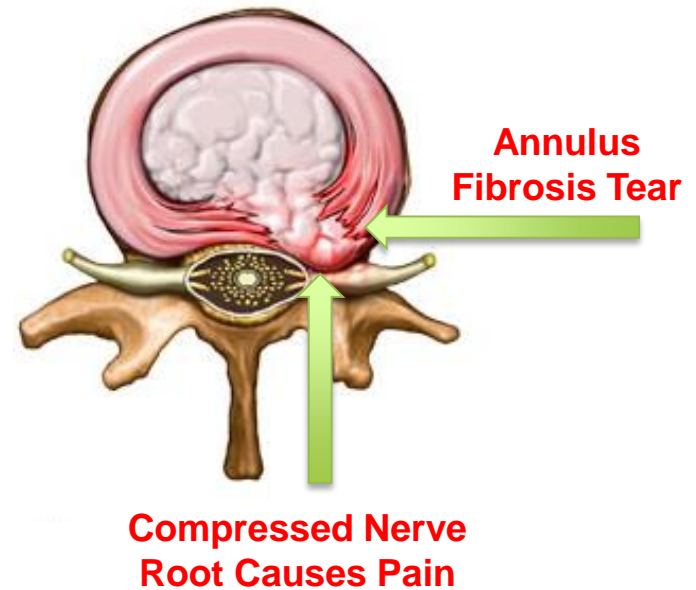
Context

Spinal Disc Herniation affects 2% of the US population resulting in **an annual cost of \$17 Billion**

Normal Lumbar Disc



Ruptured Lumbar Disc

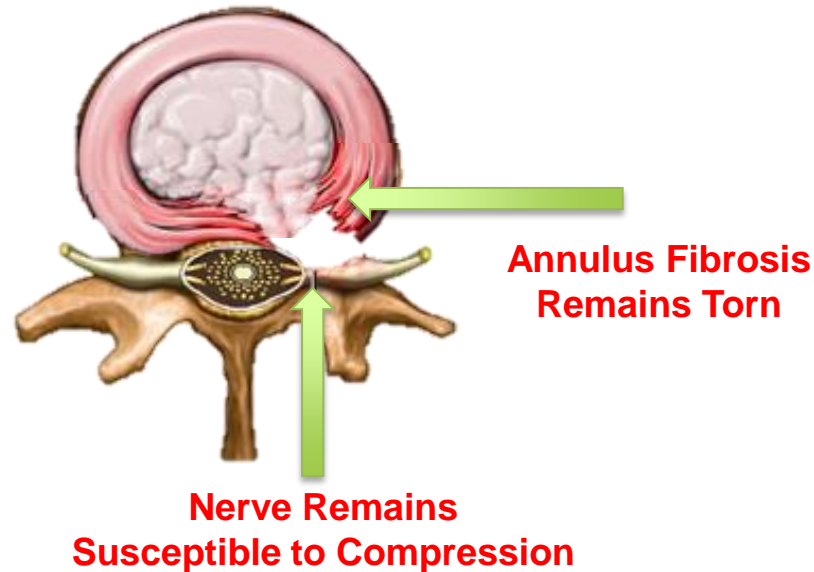


Compressed nerve root causes back and leg pain, numbness, weakness and loss of bladder/bowel control

The Problem

Current surgical techniques to address herniation remove the displaced nucleus pulposus, but do not address the Annulus Fibrosis tear, leaving open the possibility of reherniation

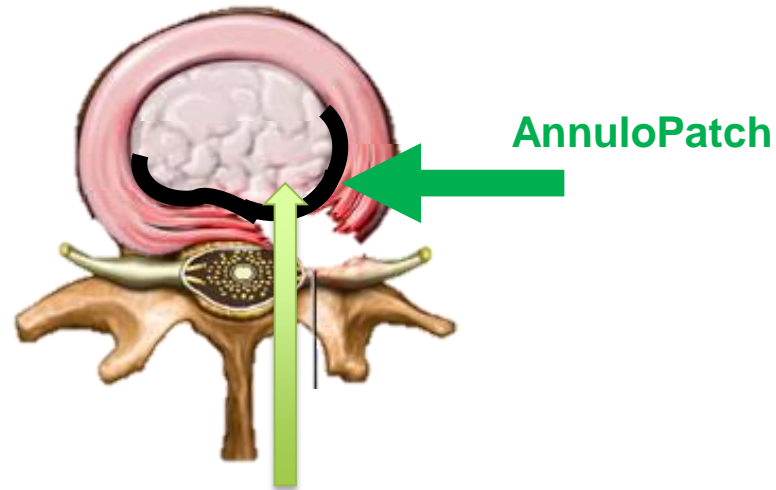
Ruptured Lumbar Disc



30% of lumbar discectomy surgeries result in reherniation and ongoing symptoms, representing a \$3 billion market

Our Solution: AnnuloPatch

We have developed a patch that prevents discs from reherniating

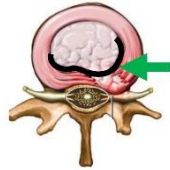


**Nucleus pulposus remains in place, eliminating
recurring nerve root compression
→ No More Pain**

**The AnnuloPatch is a simple, thin, strong, long-lasting product to
eliminate disc reherniation**

Our Implant vs. Competition

Other products are overly invasive or do not fully address the Annulus Fibrosis tear



Product	AnnuloPatch (pre-market)	Barricaid Prosthesis (marketed)	Octopus Spinal Annular Repair System (pre-market)
Strong	●	◐	ND
Simple	●	◑	◑
Long-lasting	◐	◐	ND
Low Profile	◐	○	ND
Other	<ul style="list-style-type: none"> Soft (but strong) material Flush to AF wall Will not protrude toward nerve 	<ul style="list-style-type: none"> Metal implant Requires implanting into bone Protrudes toward nerve root 	<ul style="list-style-type: none"> Metal implant Does not repair AF tear Protrudes toward nerve root

The AnnuloPatch is the simplest and least invasive solution addressing AF repair



Technology Progress and Next Steps

The AnnuloPatch technology is ready for strategic partnership and additional investment to bring the product to market

Progress to date

Development Milestones

- US/International Patent Filed
- IACUC Approval
- Prototypes
- Cadaver Studies

Funding milestones

- Columbia-Coulter Translational Partnership Award
- Hospital for Special Surgery Matching Innovation Funds

Next steps

Product Development (2014-2015)

- Material & Adhesive Testing (*In Progress*)
- Biocompatibility Testing
- Large Animal Study

Strategic Partnership

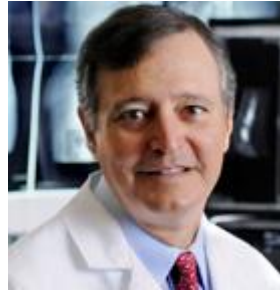
- **Strategic Investment or Partnership (2015)**

Team

An interdisciplinary team from HSS and Columbia are committed to bringing the AnnuloPatch to market



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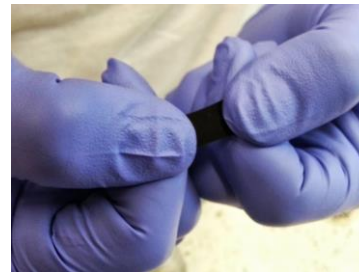
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Summary

- Spinal Disc Herniation affects 2% of the US population resulting in an annual cost of \$17 Billion
- We have developed a patch that prevents discs from reherniating
- The AnnuloPatch technology is ready for strategic partnership and additional investment
- An interdisciplinary team from HSS and Columbia are committed to bringing the AnnuloPatch to market

THANK YOU!

Additional Information:
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Come see us after the presentation if you are interested in partnering, investing, or learning more