

SHIELDED DISCECTOMY KNIFE FOR SAFER INTERVERTEBRAL DISC INCISION

[Acland, Benjamin](#), [Molina, Camilo](#), [Yahanda, Alexander](#)

[Weilbaecher, Craig](#)

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Value Proposition: *Novel surgical cutting tool that allows for more precise annular incisions during spinal surgeries.*

Technology Description

Researchers at Washington University in St. Louis have developed a shielded surgical cutting instrument named the “Lysotome” for controlled incision of the annulus fibrosis during spine surgery. Incision of the annulus fibrosis is a required step in a wide range of spinal procedures, including microdiscectomies, full discectomies, interbody fusions, tumor resections, and deformity corrections. Current surgical instruments used for annular incision (e.g. standard scalpels, annular cutters, nerve hooks, or Cobb elevators) rely on the surgeon's visual confirmation of tissue planes and manual control of the cutting path. These existing tools do not provide integrated physical protection for adjacent structures during the cut. The result is a set of persistent, unresolved problems.

This instrument is comprised of a blade or cutting element positioned between two guards -- a long guard and a short guard -- that extend from a common body. The two guards define an open mouth oriented toward the blade's cutting edge. During use, the instrument is advanced so that the annular tissue of the disc enters the open mouth between the guards and is engaged by the blade. This allows for integrated physical protection for the dura and guidance for the cutting plane during annular incision. The instrument is mechanically simple, compatible with existing surgical workflows, and applicable across a broad range of spinal procedures and surgical approaches.

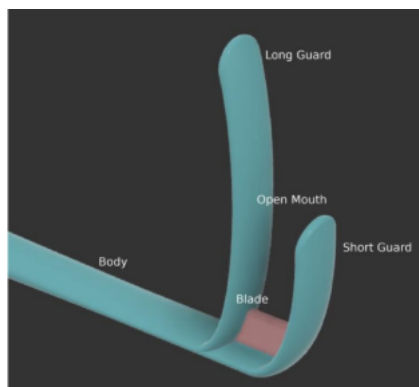


Figure 3: Annotated view identifying the key functional elements of the distal working end.

Stage of Research

Prototype developed

Applications

- Intervertebral disc/spine surgery
- Spinal procedures

Key Advantages

- Safer, more controlled incision of the annulus fibrosis
- Provides integrated physical protection of the dura
- Simple and compatible with existing surgical workflows
- Can be applied across a broad range of surgical approaches

Patents

Patent pending

Related Web Links – [Camilo Molina Profile](#)