



## Instrumented Disc Distractor

Surgery for degenerative disc disease of the cervical spine continues to be one of the procedures most frequently performed by spine surgeons. A common surgical treatment for degenerative disk disorder is anterior cervical discectomy with fusion (ACDF), which involves the removal of a spinal disc and the insertion of an intervertebral graft. In ideal circumstances an intervertebral graft is placed with a snug fit to avoid spinal distraction. If the spine is over-distracted, there is an increased risk of subsidence and/or fracturing the vertebral bodies, whereas, if the spine is under-distracted, there is an increased risk of pseudarthrosis (fibrous non-union) or graft dislodgement.

In general, graft size is currently determined by subjective evaluation, without knowledge of the intra-operative compressive load or distraction pressure. The mechanical performance of disc replacement devices is highly dependent upon the size of the implant and compression across the disc space, which is a direct function of the intra-operative distraction of the space. Thus, there is a need for a device that would provide surgeons with timely distraction-related measurements.

Researches at Colorado State University have developed a surgical instrument that displays the real-time distraction force and displacement data. This instrument is a redesigned commercial cervical disc distractor with internalized instrumentation. Internalizing the instrumentation will streamline the design, isolate the instrumentation from human tissue/fluids and allow repeated sterilization.

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**Patent Information**  
Patent pending

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### Features and Benefits

- Provides real-time surgical measurements of distraction force and displacement data to surgeons inserting intervertebral grafts
- Mitigates the need for surgeons to make subjective judgements about graft size
- Internalized instrumentation allows for a streamlined design, prevents contact with human tissue/fluids, and allows repeated sterilization

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