

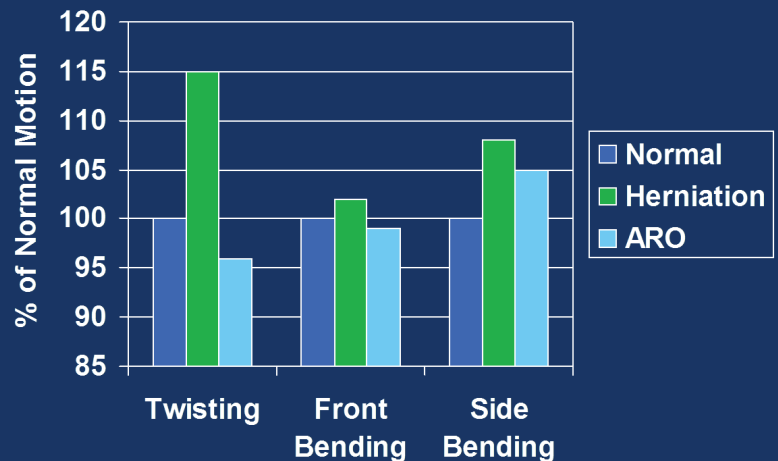
## ARO Medical breaks the degenerative spiral

ARO Medical is introducing a novel spine implant to significantly reduce lower back pain experienced by patients with early spine degeneration. ARO's device stabilizes the spine and aims at preventing further degeneration. The device has recently been approved for clinical testing which will start later this year.

### Testimonial

*"There are key muscles in the spine, which are associated with a variety of painful spinal conditions. Collaborating with AnyBody Technology enabled us to understand the interrelationships between joint mechanics and muscle function, helping to demonstrate the need for our technology"*

**Bruce Robie,**  
CEO and Founder,  
ARO Medical



### Challenge

Patients suffering from disc herniation lose natural stiffness in their lumbar spine, which sets off the following side effects:

1. The loss of stiffness results in increased range of motion in the lumbar spine during axial rotation (twisting).
2. As a consequence of the increased range of motion, key muscles stabilizing the spine become overloaded.
3. The overload causes the muscles to degenerate, which results in further loss of natural stiffness and a negative spiral is in progress.

### Solution

ARO Medical's spine implant is specifically designed based on safety and effectiveness to prevent excessive twisting thereby reducing back pain by slowing further degeneration and by enabling natural healing.

Using a validated lumbar spine model in the AnyBody Modeling System™, ARO Medical was able to:

1. Verify the degenerative chain of events
2. Show how ARO Medical's device breaks the spiral

Subsequently, an extensive series of pre-clinical tests has confirmed these results.

### Benefits

By running simulations in the AnyBody Modeling System™, ARO Medical was able to establish the in-vivo interrelationship between joint mechanics at disc level and how muscles function during a variety of movements, in particular twisting.

Critically, this insight became available to ARO Medical before significant costs and risks had been taken in device design and testing.

Consequently, ARO Medical was able to attract investments that have led the company successfully through pre-clinical testing into the ongoing clinical tests.

References: Dendorfer et al., ORS 2010 - Robie et al., SAS 2010 - Robie et al., AANS/CNS 2011  
Robie et al., ISSLS 2011 - Dendorfer et al., DGB 2011