

**FONAR WALK-IN™
FULL-RANGE-OF-MOTION™
MULTI-POSITION™
UPRIGHT™ MRI
Uncovers
“Hidden”
Disc Herniation and
Spinal Instability**

More Proof: Case Study #6

For one month following his automobile accident, this 31-year-old man experienced difficulty with walking and low back pain that radiated into his left leg and left buttock.

His referring clinician requested both upright and recumbent scans in the FONAR Upright™ MRI that would allow comparison of images of the patient's spine supporting its full weight with recumbent images where the weight was removed. The comparison would enable visualization of the full range of the patient's back pathology before deciding on treatment.

The recumbent image showed degenerative disc disease at L5/S1 and a minor disc bulge at this level.

The upright image revealed a focal posterior disc herniation (arrow) at L5/S1 and further narrowing of the disc space. In addition, an intersegmental hypermobile instability (retrolisthesis) was present at the same level when the patient was upright.

[Case Courtesy of Stand-Up MRI of Orlando, P.A. • Orlando, Florida]



Recumbent



Upright



If you can't see it, you can't fix it.

FONAR

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FONAR Upright™ Full-Range-of-Motion Multi-Position™ MRI Uncovers “Hidden Disc”

More Proof: Case Study #5

A 62-year-old woman with chronic neck pain of 30 years duration that radiated into the patient's shoulders, sought upright weight-bearing flexion-extension MRI to visualize the origin of her pain. Her neutral-sitting examination showed a C5-6 herniation, but upon extension an additional herniation appeared at C4-5.

The patient is currently being treated conservatively. She is hoping presently that surgery can be avoided, but the spine surgeon participating in her case, reports that should it come to surgery, it is critical to know of the existence of a herniation occurring on extension at C4-5.

Surgical cervical disk repair invariably includes fusion of the involved cervical level, and since cervical herniation is frequently associated with spinal instability at the involved level, any surgeon, unaware of the herniation and potential instability at C4-5, would fuse C5-6, unaware that a fusion of C5-6 might provoke added instability at C4-5 and added cervical symptoms. The result would be an unsuccessful surgical outcome and no explanation for the unsatisfactory result, since traditional recumbent-only MRI without extension would not have visualized the existence of the herniation at C4-5.

*Case study courtesy of: Richard Marks, M.D.
Board-Certified Orthopedic Surgeon
Up and Open Imaging, Dallas, Texas*



Upright Neutral



Upright Extension

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Reducing Failed Back Surgery

More Proof: Case History #2

A 57-year old woman presented with pain of one year's duration following failed back surgery performed in 2001.*

The patient continued to experience persistent low back-pain, accompanied by sensations of coldness and numbness in both thighs and legs. The patient often required mechanical support to stabilize her walking.

During the year following surgery, the patient sought help from multiple medical specialists. She provided her recumbent MRI images to them. She was told the images showed nothing that could account for her symptoms and that nothing more could be done. Her surgeon rejected the prospect of additional surgery. A Florida neurologist suggested to her that her problem was "in her head."

The imaging center that evaluated her recommended she be scanned in an Upright™ MRI due to the possibility that an Upright scan, unlike the conventional recumbent scan, is weight-bearing and "might uncover something." Her family physician wrote the prescription, and the patient drove from her home in the Florida panhandle to the closest FONAR Upright MRI center, which at the time was in Tampa over 425 miles away.

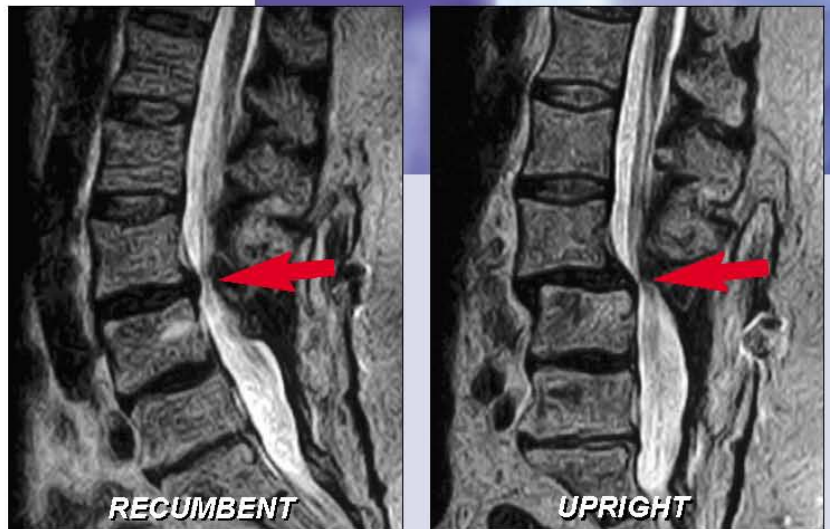
The patient was scanned in the patented FONAR Upright MRI in early 2002, one year after her spinal fusion. Both Upright and recumbent scans were performed on her in the multi-position FONAR Upright MRI.

The recumbent MRI (left image) exhibited only a normal lumbar lordotic curve and a modest bulge of the L3-4 intervertebral disc, consistent with her prior recumbent MRI scans. The FONAR Upright scan (right image) revealed, however, a marked position-dependent subluxation (anterolisthesis) at L3-4 and an accompanying spinal stenosis that were not visible on the recumbent MRI.

The patient's Upright images established that there was a genuine physical basis for her symptoms, whereas her recumbent MRI images had failed to do so. The new Upright images supplied her surgeon with the necessary evidence that additional surgery was warranted to correct her problem.

A spinal fusion was performed at L3-4 one month after the patient's Upright MRI scan. The surgical outcome was positive. To date, almost four years post-op, the patient remains symptom free and reported to FONAR, "Thank you for giving me my life back."

* laminectomy and L4S1 fusion



same patient...same scanner...same day

(Images courtesy of M. Rose, MD; Rose Radiology Centers)

TV Dramatization of Actual Case History



FONAR UPRIGHT™ MRI

"Thank you for giving me my life back."



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Upright™ MRI Produces Excellent Clinical Results!

Case Study

The patient was a 49-year-old male who had had a 20-year history of chronic back pain and a three-year history of right lower extremity radiculopathy.

Prior to the Upright™ scan, the patient was scanned in a recumbent-only MRI (1.5T). It showed a right paracentral disk herniation at L5-S1. Based on the recumbent images, neurosurgeon Bennie W. Chiles III, M.D., said:

"I would have likely performed a discectomy at L5-S1 to relieve pressure on the nerve root, along with an L5-S1 fusion for the back pain. Fusing L4-5 was not an initial consideration because no spinal instability was seen on the recumbent MRI.

When the dynamic flexion and extension images performed in the Upright™ MRI demonstrated an instability at L4-5 and showed the full extent of that instability once the patient's body weight was applied, I chose to also fuse L4-5 during the procedure rather than treat L5-S1 alone.

The result was an excellent outcome for the patient whose severe right leg pain is now gone and whose back pain is much reduced."

Case study courtesy of Bennie W. Chiles III, M.D., F.A.C.S., of Westchester Spine and Brain Surgery, PLLC (Hartsdale, New York) and Upright Imaging of Westchester, P.C. (Yonkers, NY)



FONAR UPRIGHT™ MRI



Neutral-Sit



Flexion



Extension

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Upright™ MRI Saves Professional Ice Hockey Career!



More Proof: Case Study #3

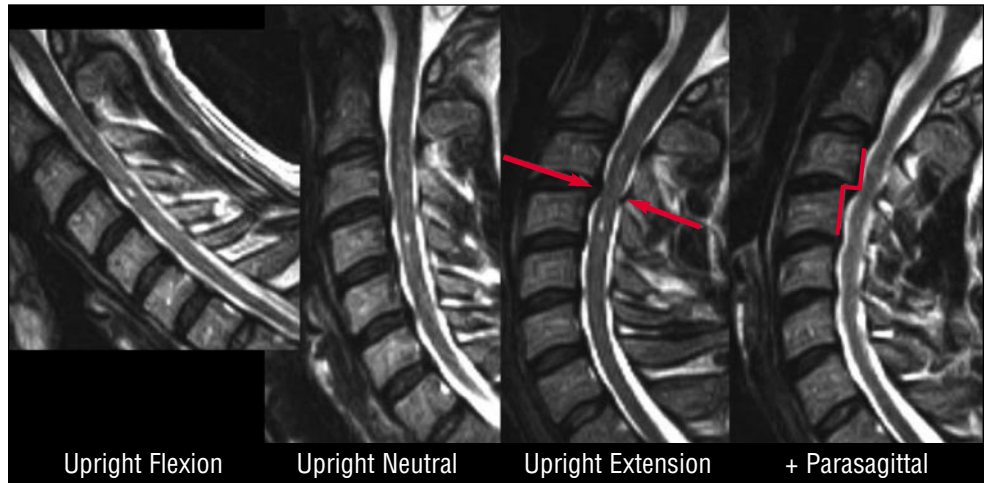
Following a violent body check, a professional ice hockey player experienced a sudden total quadraparesis that paralyzed him during play for a full minute. The upright flexion and extension images showed two centromedullary cord contusions where only one was visible on the neutral upright scan. The two contusions accounted for the quadraparesis that caused his sudden transient paralysis on the ice while playing.

The critically compromising stenosis at C3-4, visualized only by means of the FONAR Upright™ MRI extension images in this athlete with a congenitally tight spinal canal, was responsible for the acute cord compression and centromedullary contusions that resulted in the acute transient paralysis (1 minute duration) of this athlete. His lesions were visible only on upright extension.

Following anterior decompression and interbody fusion with a composite cage, this hockey player, who might otherwise have had his professional athletic career terminated, was back on the ice competing just three (3) months after surgery.



J.P. Elsig, M.D.
Orthopedic Surgeon
Fellow of the Swiss Orthopedic Society
Member of the Board of the Swiss Spine Society
FMRI Zentrum - Zurich, Switzerland



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