Kinetic magnetic resonance imaging

Kinetic MRI is effective for diagnosing, evaluating, and managing degenerative disease within the spine; however, it still has some limitations [1].

Kinetic magnetic resonance images (kMRIs) of 587 lumbar and 459 cervical spines of symptomatic patients in axially loaded, upright neutral (0 degrees), flexion (40 degrees), and extension (-20 degrees) positions were evaluated. Imaging took 10 to 12 minutes to complete in each position. Cervical kinematics were significantly affected by intervertebral disc degeneration, cervical cord compression, and sagittal alignment of the cervical spine. kMRI was effective in diagnosing lumbar disc herniations that are often missed using conventional MRI. kMRI is effective for diagnosing, evaluating, and managing degenerative disease or injury within the spine [2].

Kinetic magnetic resonance imaging of the cervical spine

1)
Lao LF, Zhong GB, Li QY, Liu ZD. Kinetic magnetic resonance imaging analysis of spinal degeneration: a systematic review. Orthop Surg. 2014 Nov;6(4):294-9. doi: 10.1111/os.12137. PMID: 25430713; PMCID: PMC6583656.
2)
Morishita Y, Hymanson H, Miyazaki M, Zhang HH, He W, Wu G, Kong MH, Wang JC. Kinematic evaluation of the spine: a kinetic magnetic resonance imaging study. J Orthop Surg (Hong Kong). 2008 Dec;16(3):348-50. doi: 10.1177/230949900801600316. PMID: 19126904.