

Decompression Therapy References Lumbar:

Onel, D et al.: CT Investigation of the effects of Traction on Lumbar Herniation. Spine 14:82-90,1989. 30 patients with lumbar herniations. Underwent traction in a CT scanner at >50% body weight for 20 minutes. Herniation retraction occurred in 70% and good clinical improvements were seen in over 93%. The authors concluded improved blood flow was the source of healing and that the traction did not create negative intradiscal pressure due to inadequate traction force.

Tilaro F. Canadian Journal of Clinical Medicine. 5:1-7,1998. Decompression therapy significantly reduced intradiscal pressure. Promoting retraction of the herniation, improving diffusion gradient into the disc that allows nutrients and healing.

Saal,JA Saal,JS: Nonoperative Treatment of Herniated Lumbar Disc with radiculopathy (leg pain). Spine 14 (4):431-437,1989. 58 subjects, 86% had good-excellent results with inclusive conservative program to include traction and trunk stabilization exercises.

Mathews JA et al.: Manipulation and traction for Lumbago and Sciatica. Physio Pract 4:201,1988. 85% reported substantial relief with a controlled trial of traction combined with manipulative therapy. Traction force applied at 100lbs. for 20 min.

Shealy N, Leroy P: New Concepts in Back Pain Management.AJPM (1) 20: 239-241 1998 . The application of supine lumbar traction altering the angle of pull from 10°-30° and progression to peak force enhanced distraction at specific levels in the lumbar spine. Increase distraction at L5/S1 with 10° angle of pull and L3 with 30° angle of pull.

Weatherall VF:Comparison of electrical activity in the sacrospinalis musculature during traction in two different positions. J Ortho Sports Phys Ther (8):382-390,1995. EMG electrical activity shown to be similar in the prone vs. supine positions.

Letchuman R, Deusinger RH: Comparison of sacrospinalis myoelectric activity and pain levels in patients undergoing static and intermittent lumbar traction. Spine 18 (10): 1361-1365,1993. Improved comfort and less muscle guarding noted in the intermittent traction group.

Decompression Therapy References Cervical:

Constatoyannis C, et al.: Intermittent Cervical traction for Radiculopathy Due to large volume Herniations. JMPT,25 (3) 2002. 4 subjects displayed complete resolution of symptoms after 3 weeks of cervical traction.

Erhard R et al.: Intermittent Cervical traction and Thoracic Manipulation for Management of Mild Cervical Compressive Myelopathy Attributed to Cervical Herniated Disc: A Case Series. JOSPT,34 (11) 2004. Intermittent cervical traction and manipulation of the thoracic spine was useful for the reduction of pain scores and level

of disability in patients with mild cervical compressive myelopathy attributed to herniated disc.

Nanno M: Effects of intermittent cervical traction on muscle pain. EMG and flowmetric studies on cervical paraspinals. *Nippon Med J*; April 61 (2):137-47, 1994.
Intermittent cervical traction was shown to be effective in relieving pain, improving blood flow and increasing myoelectric signals in the effected muscles.

Chung TS, Lee YJ et al: Reducibility of cervical herniation: evaluation at MRI during cervical traction with a nonmagnetic device. *Radiology Dec*; 225 (3) :895-900, 2002. 29 patients and 7 healthy volunteers had intermittent cervical traction while in MR. Substantial increase in vertebral length was seen. Full herniation reduction in 3 patients and partial reduction in 18 was reported.

Hseuh TC et al: Evaluation of the Effects of Pulling Angle and Force on Intermittent Cervical Traction. *J Formos Med Assoc* 90 (12):1234-1249, 1991.
Traction under 30° created longest gap C4-6 and under 35° created longest gap at C6-T1.

Gionis TA, Groteke E. Spinal decompression. Clinical study evaluating the effect of nonsurgical intervention on symptoms of spine patients with herniated and degenerative disc disease. *Orthopedic Technology Review*. Nov-Dec 2003;5 (6):36.
86% of 219 subjects reported completed resolution of symptoms and 84% of this group remained pain-free for 3 months.