

# Structural Integration (Rolfing) In Persons with Incomplete Spinal Cord Injury

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**BACKGROUND:**  $\frac{3}{4}$  of persons with spinal cord injury have tried various forms of alternative medical treatments, with massage being the most effective at pain control (Cardenas 2006, Norrbrink 2004). Massage has also been shown to decrease anxiety and depression in persons with SCI (Diego 2002) as well as in other populations (Moyer 2004).

Structural integration or Rolfing®, is an alternative medicine technique to adjust tension in the body's fascial layers by pressure on muscle, golgi tendon organs, and fascia as well as movement exercises for the patient. The improved structural alignment of the body allows it to adapt to gravity, environment, and psychological stresses.

**METHODS:** Individuals with incomplete SCI as an adult

**RESULTS:** CASE 1: 38 year old T8 injured age 32 wheelchair dependent unable to ambulate. After ten 60 minute sessions he showed 18 degree increase in ankle dorsiflexion, 13 in neck side bending, hip flexion and straight leg raise and 8 degrees in hip extension and was able to ambulate independently short distances. CASE 2: 56 year old C34 Brown Sequard injured age 38, independent in transfers and short distance ambulation. After the first session he was able to raise his right arm over his head. After 6 more treatments, there were no areas in either leg which triggered spasms, overall pain level was markedly reduced, and he was referred to physical therapy for strengthening and gait training. CASE 3: 46 year old L4 paraplegic from bends at age 44. After session one he was able to tie shoelaces independently without leg spasms. CASE 4-8 Additional cases are being processed with before and after quantitative measurement of balance (Neurocom Equitest SOT), overall physical and psychological function (SF36) and mood (Spielberger Anxiety).

**CONCLUSIONS:** Rolfing has been used for 20 years in wholistic summer programs for SCI by a private organization, Shake-a-Leg. In 2005, the VA Hospital in East Orange started a program in alternative medical therapies, and in 2006 credentialed a practitioner of structural integration. This technique offers promise in the treatment of persons with spinal cord injury. Increased range of motion has been documented, and other measures of physical and psychological function are being collected.

Cardenas DD. Jensen MP. Treatments for chronic pain in persons with spinal cord injury: A survey study. *Journal of Spinal Cord Medicine.* 29(2):109-17, 2006.

Diego MA. Field T. Hernandez-Reif M. Hart S. Brucker B. Field T. Burman I. Spinal cord patients benefit from massage therapy. *International Journal of Neuroscience.* 112(2):133-42, 2002 Feb.

Moyer CA. Rounds J. Hannum JW. A meta-analysis of massage therapy research. *Psychological Bulletin.* 130(1):3-18, 2004 Jan.

Norrbrink Budh C. Lundeberg T. Non-pharmacological pain-relieving therapies in individuals with spinal cord injury: a patient perspective. *Complementary Therapies in Medicine.* 12(4):189-97, 2004 Dec.