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Myofascial and articular treatment of adolescent idiopathic scoliosis (AIS)

Purpose of Study: This study, supported by NIH Grant and the UNM Foundation, assesses effectiveness of specific myofascial and articular treatment protocol to: (a) decrease and/or reduce progression of spinal curvatures, (b) reduce rib prominence/deformity, (c) decrease incidence of patients requiring corrective bracing and/or corrective spinal surgery, (d) significantly reduce pain, and (e) improve quality of life.

Hypothesis: Regarding Importance of Myofascial Influence on Scoliotic Curvatures. Current research has demonstrated unilateral muscle shortening on the concave side of curvature in AIS: quadratus lumborum, psoas major, and the abdominal obliques and researchers suggest that this muscle imbalance is compensatory to spinal deformities. We suggest that this asymmetry represents asymmetrical muscle tension and results in a tethering effect on the spine. Fascia overlies and interpenetrates these muscles. Asymmetrical muscle imbalances in AIS may be part of larger contracted fascial spiral forces influencing development and progression of deformity. (Preliminary results in this study indicate importance of identifying and treating intersecting planes of fascial contraction as they affect AIS.)

Design: 10 AIS subjects are in both the active treatment group and the control group (n=20): aged 10-15 years, with curvatures ranging from 15° to 30°. (Braced subjects continue in brace.) Active treatment includes myofascial and articular care twice monthly plus arch supports, heel lifts and ischial lifts as indicated, and individualized home exercise, equipment provided.

Principal Investigator, Selina Silva, MD, Pediatric Spinal Surgeon at UNM Carrie Tingley Hospital has been in charge of recruitment and managing the study including the initial and final measurements, performed by blinded Nurse Practitioners.

Measurements (at 0 and 6 months)

1. Scoliosis x-rays
2. Scoliometer readings of rib cage prominence
3. Quality of Life Questionnaire (SRS 22)
4. Visual analog pain scale

Preliminary Results: The study will end in early June, 2022 (full results available by Spine 2022 Conference). Of the 7 subjects who have completed active treatment, 3 subjects are stable: the same, or +/- 3° to 5°. One subject is worse with a 13° increase in primary curvature. Three subjects are very significantly improved in ways that are not generally seen in AIS:

1. Subject with 15° primary curvature completed study with 1° curvature.
2. Subject with 18° primary curvature completed study with 9° curvature.
3. Subject with 28° degree left lumbar curvature completed study with 18°, and 18° right thoracic curvature decreased to 9°.

Importance: The positive results enumerated above would not be possible if changes in vertebral or disc shape were responsible for AIS development. Fascial constriction may be a primary factor in AIS development. Researchers have no conflicts of interest. University of New Mexico HRPO approved the research protocol.

Recent Publications

1. Whyte Ferguson L. Adolescent idiopathic scoliosis: The Tethered Spine III: Is fascial spiral the key? J Bodyw Mov Ther. 2017 Oct;21(4):948-971.
2. Whyte Ferguson L. Adult idiopathic scoliosis: the tethered spine. J Bodyw Mov Ther. 2014 Jan;18(1):99-111. doi: 10.1016/j.jbmt.2013.05.002. Epub 2013 Jun 14.
3. Whyte Ferguson L. Idiopathic scoliosis: the tethered spine II: post-surgical pain. J Bodyw Mov Ther. 2014 Oct;18(4):501-13.

Biography

Whyte Ferguson is a credentialed faculty member at the University of New Mexico, Department of Neurosurgery since 2013 and she has been a consulting doctor at the UNM Pain Consultation and Treatment Center and she has served as a myofascial expert at Project ECHO Chronic Pain and Opioid Management Clinic. Since 1996, she has been co-director of a series of interdisciplinary courses on diagnosis and treatment of Myofascial Pain offered through the University of New Mexico Continuing Medical Education and she is now the director of manual programs at the UNM Myofascial Institute. She learned diagnosis and treatment of Myofascial Pain and Dysfunction from Janet Travell, MD, President John Kennedy's medical doctor starting in 1983 and started teaching with Dr. Travell in 1991. She received the 1996 Janet Travell, M.D. Soft Tissue Pain Management Award from the American Academy of Pain Management (first chiropractor to receive this award). She co-edited with Robert Gerwin, MD: Clinical Mastery in the Treatment of Myofascial Pain; wrote the chapters on Frozen Shoulders and Shoulder Dysfunction, and Hip and Groin Pain and co-authored the chapters on Whiplash Injuries, on Lower Back Pain, and on Heel Pain which was published in 2005 and released in Portuguese in 2007and in Russian in 2008. She has been using myofascial and fascial and articular care to treat scoliosis for the last 20 years, publishing 3 articles on these approaches including: Adolescent Idiopathic Scoliosis: the Tethered Spine III: Is Fascial Spiral the Key? Journal of Bodywork and Movement Therapies, Volume 21, No. 4, pp. 948-971, October, 2017.

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