



The Florida Chiropractic Foundation (FCF) contributes \$40,000 per year to assist in underwriting costs of the Lincoln College Endowed Chair that are not covered by earnings from the endowment. Pictured at the check presentation for FCF's 2008 donation are, from left: FCF Director Debra Hoffman, D.C.; Lincoln College Endowed Chair, University of South Florida John Mayer, D.C., Ph.D.; FCF Chairman Ken Dougherty, D.C.; FCF Director Keith Walburn, D.C.; and FCF Secretary Debbie Brown.

growth of chiropractic research, practice, and education within a college of medicine at a tier one research university. ◀FCA

Dr. Mayer is the Lincoln College Endowed Chair in Biomechanical and Chiropractic Research, College of Medicine, at the University of South Florida. He is co-director and co-instructor for the "Health Promotion and Wellness" course at USF in Spring 2008. Dr. Mayer serves as manuscript reviewer for several scientific journals, is an advisory editorial board member for one journal, and advisory panel/committee/board member for various health and research agencies. He is also an honorary member of the Florida Chiropractic Association.



Table 1 Research Study

Focused exercise may help correct strength asymmetry and spinal alignment in idiopathic scoliosis

Muscular strength and myoelectric activity during torso rotation is asymmetric in adolescents with idiopathic scoliosis. A recent study conducted by our group and presented at the 2008 annual meeting of the North American Spine Society demonstrated that progressive resistance exercise can help correct this strength asymmetry and improve spinal alignment in persons with idiopathic scoliosis.¹

METHODS: Thirty-one adolescents (two male, 29 female) with idiopathic scoliosis participated in a therapeutic exercise program at physical rehabilitation centers in San Diego, California and Auckland, New Zealand. Pre-treatment scoliosis was documented by plain film x-ray and only individuals with curves of less than 45 degrees were included in the program. Strength testing and exercise training were carried out on a torso rotation exercise device with pelvic stabilization. Training on this device consisted of full range of motion, variable resistance exercise in the seated position. Starting exercise load was 1/4 to 1/2 body weight, depending upon tolerance. Once 20 repetitions were achieved at a given load, resistance was increased at the next exercise session by approximately five percent through plate-loaded mechanisms on the device. Training sessions were held two times per week until a plateau of strength improvement was achieved. After that, strength training was once a

week until x-rays documented no change in curvature. No bracing was used in the course of this study.

RESULTS: The mean curvature was 29.5° (range 10° to 45°) at baseline and 25.1° (minimum decrease 4°, maximum decrease 43°) at the conclusion of treatment. None of the patients demonstrated an increase in curvature during the course of this study. While side-to-side differences in rotation strength were noted in all the patients at baseline, torso rotation strength became symmetric at about four weeks of training. The mean improvement in torso rotation strength was 108.5 percent (range: 35 percent to 200 percent).

CONCLUSIONS: Progressive resistance exercise training may be effective to develop symmetrical torso rotation strength, and reduce spinal curvature or prevent progression in patients with idiopathic scoliosis. While randomized controlled trials are needed to document the efficacy of this intervention, doctors of chiropractic may choose to include torso rotation strengthening exercise for the management of patients with idiopathic scoliosis that are not surgical candidates.

References

1) Mooney V, Mayer J, Woodbridge D. Exercise correction of strength asymmetry and alignment in idiopathic scoliosis. *The Spine Journal*, 2008;8(5 supplement):123S-124S.