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Topic **Physiotherapy for Scoliosis**

Title **Pulmonary Function In Adult Scoliosis: A Prospective Case Report.**

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Abstract **Objective:** To evaluate efficacy of a three-dimensional exercise program for adult scoliosis treatment, when executed on an outpatient basis.

Background: Thoracic scoliosis patients exhibit reduced vital capacity (VC) (<80% predicted for age and height) and chest expansion. To date, the long-term impact of these changes on health and function in scoliosis patients remain unexplored. However, reduced VC (<80%) is correlated with increased mortality in healthy subjects (Mannino et al., 2003 Thorax 58: 388). In a previous study (Weiss, 1991; Spine 16:88), improved VC and chest expansion were documented across a population of 800 patients in a four-week intensive inpatient treatment. In the current study, the potential for implementing the principles of this program on an outpatient basis was explored.

Case: The patient, aged 53 years, presents with a 37^e right thoracic curve from T4 to T11. Treatment constituted a one-on-one three-hour per day Schroth program (Weiss, 1991). This nine-day program over a two-week period includes an initial examination, patient education, specific scoliosis mobilization, Physio-logic exercises, Schroth exercises and ADL's (Activities of Daily Living). Outcome measures included spirometry, chest expansion, Cobb angle, and clinical photographs. Measurements were taken at intervals over five months. A patient of similar age with a curvature that did not involve upper thoracic vertebrae was included for comparison.

Results: Chest expansion improved from 4 cm (9/7/08) to 4.6 cm (9/16/08) to 5.0 cm (1/23/09). At the same time points, VC improved progressively from 2058 ±63 ml (86% predicted) to 2358 ±38 ml to 2517 ±17 ml (105% predicted). No changes in VC or chest expansion occurred in the control case.

Conclusions: A two-week intensive outpatient Schroth scoliosis program resulted in an 18% improvement in VC and a corresponding 20% increase in chest expansion, in an adult patient. The >450-ml increase in VC is comparable to results obtained with adult patients treated on an in-patient basis (Weiss, 1991). Long-term results will be followed.

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