

## **A Case Study on the Effect of a Mobility Focused Exercise Training in Rehabilitation of an Elite Weightlifter with Shoulder Pain and Weakness**

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**Abstract :** Background: Shoulder pain and weakness are associated with complex pathologies and often precludes weightlifters from participation in training. The role and mode of exercise training in weightlifters with shoulder pathology remains unclear. Objectives: This case report described an exercise program in management of an elite weightlifter with primary complaint of right shoulder pain and weakness. Methods: A 22-year-old weightlifter presented with 2-year duration of right shoulder pain and weakness which was worsened by routine weightlifting training, and symptoms were not relieved with steroid injection, manual therapy nor usual physiotherapy. There was a limitation in all active range of motion especially horizontal extension (13°) and external rotation (41°) with pain intensity at 4/10 and 10/10 (numeric pain rating score) respectively. Muscle weakness was most significant at supraspinatus and teres minor, 38% and 27% respectively compared to his left shoulder (hand-held dynamometry, Micro FET2). An exercise training program focusing on improving mobility was designed for this athlete following a comprehensive physical assessment. Exercises included specific stretching, muscle activating and scapular stability training; once per day, and for 60 minutes each session. All exercises were completed under instruction as pain allowed. Quantitative assessment was conducted at the end of each week for 3 weeks. Outcomes: After the program, the athlete was pain-free in all movements except the O'Brien active compression internal rotation test, the pain was however reduced from 10/10 to 3/10. The horizontal extension and external rotation range increased to 79° to 120° respectively, and strength of all rotator cuff muscles returned to normal. At 1-month follow up, the athlete was totally pain-free and had returned to normal function and weightlifting training activities. The outcomes sustained through 6-month and one year. Conclusion: This case report supports the use of a mobility-focused exercise program for management of shoulder pain and weakness in an elite weightlifter athlete.

**Keywords :** exercise training, mobility, rehabilitation, shoulder pain, weightlifting

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