

## **Treatment of Atypical Acromioclavicular Joint Instability in a 15 year old Female**

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**Background:** Acromioclavicular (AC) joint instability is most often the result of a traumatic injury such as a fall on the shoulder. Inappropriate muscle activation patterns are generally not considered as a contributing factor to chronic AC joint instability; therefore most treatment protocols focus on a phase of immobilization followed by range of motion and gradual return to activity. Treatment of AC joint instability guided by a Movement System Diagnosis has not been discussed in the literature.

**Purpose:** The purpose of this presentation is to describe how a Movement System Diagnosis guided the treatment for a 15 year old female with an unusual case of acromioclavicular joint instability.

**Case Description:** The patient was referred with the diagnosis of multidirectional instability of the shoulder. She reported that her right shoulder pain and clunking had started 1 year prior to her initial therapy visit. Her pain began after her elevated arm was “snapped back” while she was blocking a shot in a volleyball game. She complained of a sense of instability and although her shoulder would “clunk” almost every time she raised arm there were no episodes of dislocation. She reported constant pain in superior shoulder and scapular region as well as the anterior shoulder. Pain level varied from 3 to a 7 on 0-10 scale. Her DASH score was 14.2/100 and sports section was 43.8/100. All diagnostic testing was negative. Examination revealed alignment impairments of scapula and thorax. Active shoulder flexion was accompanied by pain and frequent audible popping which appeared to be her AC joint subluxing repeatedly during arm elevation. Multiple scapular movement impairments were noted during the motion: internal rotation, anterior tilt, depression and insufficient upward rotation. Recruitment of her pectoralis major was thought to be excessive during shoulder flexion. Muscle testing found weakness of the trapezius and serratus anterior muscles. Accessory joint motion was increased in the AC joint bilaterally. A movement system impairment diagnosis of Scapular Internal Rotation with Anterior Tilt and Depression Syndrome was assigned to guide her treatment. Her initial treatment focused on alignment correction and modification of her movement pattern. The performance of trapezius and serratus muscles was addressed. Focusing on restoring a more normal pattern of scapular movement during arm elevation encouraged optimal activation of her shoulder girdle musculature.

**Outcomes:** The patient was seen for 5 visits and at her last visit she reported that she was pain free for the majority of her day. After participating in sporting activities, she reported she sometimes had soreness which rated at 2/10 at worst. She could elevate her arm without any popping in the AC joint. She was able to resume playing volleyball. Her DASH score was 8.33 and the sports section was 6.25.

**Discussion:** Although the mechanism of her injury was not likely to have caused more than a mild sprain, the patient developed a chronic instability at the AC joint. Many factors contributed to this unusual presentation of AC joint instability. The underlying

hypermobility of her AC joint was compounded by her injury as well as her faulty alignment and altered recruitment pattern of scapular muscles. Addressing the impairments that were presumed to be the cause of her pain rather than treating the AC joint in isolation resulted in an excellent outcome for this patient.