

Title: Epidemiology of Acromioclavicular Joint Injuries at a Colorado Ski Resort

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Purpose: Acromioclavicular joint (ACJ) injuries are amongst the most common injuries in winter sports. The purpose of this study was to determine trends with respect to injury mechanism, environmental factors, associated injuries, and demographics amongst patients treated for acute ACJ injuries at the Winter Park Ski Resort clinic in Colorado.

Methods: This was a retrospective descriptive analysis, specifically using an injured patient cohort from the Winter Park Ski Resort clinic. The timeframe used was from 2012 to 2017. All patients diagnosed with an ACJ injury when seen at the ski clinic at the mountain's base were included in the patient cohort. Chart review was performed to confirm diagnosis and obtain case details.

Results: A total of 341 acromioclavicular joint injuries (6.7% of total visits) were encountered during the study period. The majority of ACJ injuries were grade I (41.3%) and mainly occurred in men (86.5%). The majority (96.8%) of the cases were primary ACJ injuries on the right shoulder (56.9%). The average age of patients with ACJ injuries was 30.0 years (range 10-72). More than half (62.2%) of ACJ injuries occurred due to snowboarding injuries and the remaining due to skiing injuries (37.8%). The most common mechanism of injury (93.5%) was fall to snow while skiing/boarding. Women were more likely to have a grade I ACJ injury than men (80.4% vs 35.4%; $P < 0.001$). Women with ACJ injuries were more likely to suffer the injury due to skiing than snowboarding (71.7% vs 28.3%; $P < 0.001$), compared to men who were more likely to suffer the injury due to snowboarding than skiing (67.5% vs 32.5%; $P < 0.001$).

Conclusions: Most of the ACJ injuries were Class I and occurred mostly in men. Snowboarders were more likely to have an ACJ injury than skiers.