

# **Systematic Review: Treatment of Shoulder Instability in High-Demand Physical Patients: Comparison of In-Season and Off-Season Treatment**

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## **INTRODUCTION:**

Shoulder instability is a common injury in high-performance athletes, affecting their ability to participate in sports. This systematic review compares the effectiveness of shoulder instability treatment during the season versus off-season in high-demand physical patients.

## **METHODS:**

Searches were conducted in PubMed, Cochrane Library, Scopus, and Google Scholar, identifying 135 studies. After applying inclusion and exclusion criteria, 18 comparative studies were selected. The studies included randomized controlled trials, cohort studies, and case series. The methodological quality of the included studies was evaluated using the Newcastle-Ottawa scale for observational studies and the Cochrane Risk of Bias tool for controlled clinical trials.

## **RESULTS:**

The selected studies indicate that in-season treatment for athletic injuries showed better rates of return to sport and more effective pain management compared to off-season treatment. Non-surgically treated athletes were able to continue participating in important competitions during the season with adequate management, despite having a higher risk of instability recurrence (40% average). However, they did not return to the same performance level as before the injury. By the end of the season, these athletes underwent surgery and missed the following season.

In contrast, athletes who received in-season surgical treatment, although losing the current season entirely, were able to recover more completely for the next season. Early surgical intervention is beneficial for young patients with shoulder instability. Patients experiencing their first shoulder dislocation tend to have fewer issues with instability after surgery compared to those who have had recurrent dislocations before surgery. This implies that early intervention can stabilize the shoulder more effectively.

Similarly, first-time dislocation patients require fewer subsequent surgeries, indicating that early surgical treatment addresses the problem more comprehensively the first time around. Given these benefits, it is recommended that young patients with shoulder instability consider early surgical intervention. This proactive approach aims to reduce the likelihood of ongoing instability and the need for additional surgeries in the future.

## **DISCUSSION AND CONCLUSION:**

It appears that in-season surgical treatment may mean losing the current season but ensuring that the athlete is fully recovered for the next one. On the other hand, waiting until the end of the season for surgery increases the risk that the athlete will suffer another episode of injury, a more complex injury, approximately 60% of patients with shoulder instability exhibit bipolar lesions. While larger glenoid defects are generally linked with larger Hill-Sachs lesions, the correlation between their sizes is not particularly strong. Bipolar lesions are commonly seen in patients with recurrent shoulder instability, those who experience repeated dislocations or subluxations, and athletes involved in collision or contact sports. The presence of bipolar lesions is associated with a high recurrence rate of shoulder instability.

Treatment of shoulder instability in high-demand physical patients during the season is associated with better outcomes compared to off-season treatment. Surgical interventions may be more effective than non-surgical therapies in these patients. However, the choice of treatment should be individualized, considering the risks of recurrence and the needs of the athlete.

Off-season training is crucial for injury prevention, as it allows athletes to address muscle imbalances, improve flexibility, and restore balance to reduce the risk of overuse injuries during the season. Proper in-season training should focus on maintaining strength gains through lower-volume, higher-intensity workouts to avoid soreness and further injury.

The next step is to perform a meta-analysis of the data found to provide a more robust evaluation of optimal treatment strategies.