

# Outcomes of Shoulder Instability Surgery in Competitive Wrestlers: Outcomes, Reoperations, and Return to Play at 5 Years Mean Follow Up

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**INTRODUCTION:** Wrestling is a physically demanding sport with young athletes prone to traumatic shoulder instability (SI). However, there is a paucity of data evaluating the results of shoulder instability surgery (SIS) in this cohort. Therefore, the purpose of this study was to assess reoperation rates, patient-reported outcomes (PRO), and return to wrestling (RTW) following SIS in a cohort of competitive wrestlers.

**METHODS:** All competitive wrestlers with a history of shoulder instability and subsequent surgery at a single institution between 1996 and 2020 were identified. All directions of shoulder instability (anterior SI [ASI], posterior SI [PSI], and multidirectional SI [MDI]) were analyzed. Exclusion criteria included revision SIS and less than 2 years of clinical follow up. Patients were contacted for determination of reinjury rates; current sport status; and Western Ontario Shoulder Instability index (WOSI) scores.

**RESULTS:** Ultimately, 104 wrestlers were included at a mean follow up of 5.2 years (range, 2.0 – 22.0) (Table 1). At presentation, 58 (55.8%) wrestlers presented after a single SI event while 46 (44.2%) sustained multiple events. ASI was the most common direction (n = 79; 76.0%) followed by PSI (n = 14; 13.4%), and MDI (n = 11; 10.6%). Radiographically, 13 (12.5%) wrestlers had a Hill-Sachs lesion and 9 (8.7%) had a Bony Bankart at the time of presenting radiographs (Table 2). Surgical treatment was most commonly an arthroscopic soft tissue stabilization (n = 88; 84.6%), followed by an open soft tissue repair (n = 13; 12.5%) and open bony augmentation (n = 3; 2.9%) (Table 3). RTW occurred in 50.7% of wrestlers at a mean of 9.8 ± 9.6 months (Table 4). Recurrent instability was the most common complication in 18 (17.3%) wrestlers. Revision SIS was performed in 15 (14.6%) wrestlers. Across the entire cohort, Kaplan-Meier survivorship free from recurrent instability and revision surgery was 91.4% and 98.1% at 1 year, 90.4% and 92.5% at 2 years, 71.9% and 70.7% at 5 years, and 71.9% and 66.5% at 10 years, respectively (Figure 1, 2).

**DISCUSSION AND CONCLUSION:** Anterior shoulder instability was the most common direction among competitive wrestlers presenting for SIS. Though surgery led to favorable outcomes within the first 2 years, rates of recurrent instability and revision surgery remain a concern for this cohort over time.

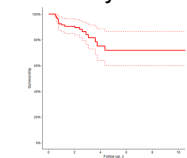


Figure 1: Kaplan-Meier survivorship curve demonstrating progression to recurrent instability.

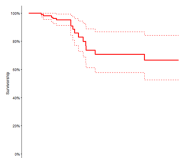


Figure 2: Kaplan-Meier survivorship curve demonstrating progression to recurrent instability and revision surgery.

| Characteristic | Count    | Percentage | P     |
|----------------|----------|------------|-------|
| Age (years)    | 184 (11) | 11 (11)    | 0.001 |
| Sex            | 184 (11) | 11 (11)    | 0.001 |
| Side           | 184 (11) | 11 (11)    | 0.001 |
| Event          | 184 (11) | 11 (11)    | 0.001 |
| Direction      | 184 (11) | 11 (11)    | 0.001 |
| Surgery        | 184 (11) | 11 (11)    | 0.001 |
| RTW            | 184 (11) | 11 (11)    | 0.001 |
| Follow-up      | 184 (11) | 11 (11)    | 0.001 |

\*Values presented as mean ± standard deviation or n (%). Values in parentheses represent percentages.

| Characteristic | Count    | Percentage | P     |
|----------------|----------|------------|-------|
| Event          | 184 (11) | 11 (11)    | 0.001 |
| Direction      | 184 (11) | 11 (11)    | 0.001 |
| Surgery        | 184 (11) | 11 (11)    | 0.001 |
| RTW            | 184 (11) | 11 (11)    | 0.001 |
| Follow-up      | 184 (11) | 11 (11)    | 0.001 |

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| Surgery        | 184 (11) | 11 (11)    | 0.001 |
| RTW            | 184 (11) | 11 (11)    | 0.001 |
| Follow-up      | 184 (11) | 11 (11)    | 0.001 |

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