

# Predictors of Poor Patient-Reported Outcome Two Years after Surgery for Anterior Shoulder Instability: Results from the MOON Shoulder Instability Study

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## INTRODUCTION:

The National Institutes for Health states that Patient-Reported Outcome Measures (PROMs) "reflect the reason that an individual seeks healthcare services, and that the patients voice in in many performance measures has largely been missing." Predictors of patient-reported inferior outcomes have not been prospectively studied in a large cohort of anterior shoulder instability patients to date. It has been well established that psychosocial factors can weigh heavily on patient outcome after orthopaedic surgeries. Yet, has not been analyzed for the shoulder instability population. The purpose of this study was to identify modifiable patient predictors for worse validated patient-reported outcomes 2 years after surgery for anterior shoulder instability. We hypothesized that patients with greater bone loss and lower baseline mental health will have worse patient-reported outcomes at 2 years of follow up.

## METHODS:

Patients aged 12 and older, undergoing surgery for anterior shoulder instability were prospectively enrolled by 30 surgeons at 10 academic and private institutions in the United States. Primary and revision surgery, as well as arthroscopic and open surgery, were included. Bony augmentation or concomitant rotator cuff repairs were excluded. PROMs were administered preoperatively, as well as at a minimum of 2 years of follow up including Western Ontario Shoulder Instability score (WOSI), American Shoulder Elbow Surgeons score (ASES), Single Assessment Numeric Evaluation (SANE), Shoulder Activity Level, Rand-36, Euroqol-5D, Kerlan Jobe Overhead Athlete Shoulder and Elbow Score, Personality Assessment Screener (PAS) and Iowa Quick Screen. Regression models were fit to determine baseline predictors of the following two-year outcomes: WOSI, ASES, and SANE.

## RESULTS:

A total of 1,021 patients were prospectively enrolled with minimum two-year follow up. The average patient age was 22.0 years and 78% were male. Some 9% of patients had self-reported depression. Predictors of inferior WOSI at 2 years included smoking (p<.05), younger age (p<.02), volitional dislocators (p<.02), revision surgery (p<.001), preoperative WOSI (p<.001), and PAS (p<.001). Predictors of lower ASES at 2 years included revision surgery (p<.02), PAS (p<.01), and preoperative ASES (p<.001). Predictors of lower SANE at 2 years included revision surgery (p<.01), volitional dislocation (p<.01), and PAS (p<.001). Bone loss, number of preoperative dislocations, BMI, Beighton score, presence of cartilage lesion, minority race, and dominant side were not predictive in any model. These models can be seen in the figures below.

**DISCUSSION AND CONCLUSION:** Younger age, revision surgery, smoking, volitional instability, and higher scores on the personality assessment screener (PAS) were predictive of worse patient-reported outcomes after surgery for anterior shoulder instability. The strongest predictor overall was the PAS, which is a validated 22 question instrument assesses the potential for emotional and/or behavioral problems of clinical significance. Further studies need to be performed to see if psychosocial interventions can be performed to improve outcome in these patients.

Figure 1: Anova plot (Wald Statistics) for WOSI showing relative strength of predictors

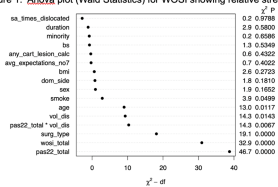


Figure 2: Anova plot (Wald Statistics) for ASES showing relative strength of predictors

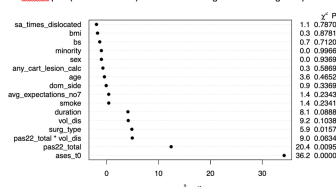


Figure 3: Anova plot (Wald Statistics) for SANE showing relative strength of predictors

