

# **Limited Internal Rotation following Reverse Shoulder Arthroplasty: Its Prevalence and Impact on Patients' Subjective Rating of the Procedure**

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## **INTRODUCTION:**

Studies have shown that functional internal rotation of the shoulder is often limited following reverse shoulder arthroplasty (RSA). Commonly used patient-reported outcome measures (PROMs) lack components that are specifically designed to capture the impact of limited internal rotation. The purpose of the study was to investigate the prevalence of limited internal rotation following RSA and how limited internal rotation affects patients' subjective rating of their RSA.

## **METHODS:**

A cross-sectional study on a cohort of patients who had undergone primary RSA with > 6 months of follow up was performed. In-person interview and physical exam were conducted to obtain data for shoulder range of motion (forward elevation, external rotation, internal rotation), patients' subjective rating of their RSA, ability to carry out daily activities requiring internal rotation, and PROMs (ASES, SANE, and PROMIS). Statistical analysis was performed to evaluate the relationships of internal rotation with other demographic and outcome variables.

## **RESULTS:**

Seventy-five patients (45 males, mean age = 70 years) were enrolled. In physical exam, internal rotation was found to be very limited (to the ipsilateral side/buttock) in 36% of the patients. Sixty percent of the patients reported a subjective feeling of internal rotation limitation. As for patients' subjective rating of their RSA, 44% felt that their RSA was perfect, and 56% less than perfect. The presence of objective or subjective limitation of internal rotation was significantly associated with lower subjective rating of RSA ( $p < 0.01$ ), and this finding was more obvious in dominant-side shoulders than in non-dominant shoulders. Inability to manage toileting with the dominant hand was significantly associated with lower rating of RSA and lower PROMs ( $p = 0.001$ ). In multiple regression, limited internal rotation and lower SANE scores were the only independent predictors of less-than-perfect rating of RSA ( $p = 0.02$ ).

## **DISCUSSION AND CONCLUSION:**

Internal rotation limitation was prevalent following RSA affecting up to 60% of patients. It negatively affected patients' subjective rating of their RSA, and this was more obvious in dominant-side shoulders. It is important to consider and devise measures to minimize internal rotation limitation when performing RSA.