

# Minimum 10-year Clinical Follow-up of Anatomic Shoulder Arthroplasty for Primary Glenohumeral Arthritis

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## **Abstract**

**Introduction:** End-stage glenohumeral arthritis is commonly managed with shoulder arthroplasty, but reports on long term outcomes and failures are uncommon. The purpose of this study is present minimum 10-year clinical outcomes of patients undergoing ream-and-run and anatomic total shoulder arthroplasty for primary glenohumeral arthritis.

**Methods:** This study analyzed consecutive patients that had undergone a ream-and-run or an anatomic total shoulder arthroplasty (TSA) with minimum 10-year follow-up. The VAS pain score and Simple Shoulder Test (SST) values were obtained preoperatively and at a minimum of 10 years postoperatively. VAS pain and SST scores were collected at 10 years, and the percentage of maximum possible improvement (%MPI) was also calculated.

**Results:** Of 127 eligible patients, 63 (50%) responded to a 10-year survey. This included 34 patients undergoing ream-and-run arthroplasty and 29 patients undergoing TSA. The ream-and-run patients were significantly younger than the TSA patients ( $60 \pm 7$  vs  $68 \pm 8$ ,  $p < 0.001$ ) and were predominantly male (97% vs 41%,  $p < 0.001$ ). In the ream-and run group, the mean VAS pain score improved from a pre-operative value of  $6.5 \pm 1.9$  to  $0.9 \pm 1.3$  ( $p < 0.001$ ), and the mean SST score improved from  $5.4 \pm 2.4$  to  $10.3 \pm 2.1$  at 10-year follow-up ( $p < 0.001$ ). 28 (82%) achieved an SST improvement above the MCID of 2.6. Four patients (12%) underwent

single-stage exchange to another hemiarthroplasty, while 1 (3%) required a manipulation under anesthesia. In the TSA group, the VAS pain score improved from a pre-operative value of  $6.6 \pm 2.2$  to  $1.2 \pm 2.3$  ( $p < 0.001$ ), and the SST score improved from  $3.8 \pm 2.6$  to  $8.9 \pm 2.6$  at 10-year follow-up. ( $p < 0.001$ ). Of the 29 patients who underwent a TSA, 27 (93%) achieved an SST improvement above the MCID of 1.6. No patient in the TSA group required reoperation.

Conclusion: Excellent and durable functional results can be obtained with the ream-and-run arthroplasty and total shoulder arthroplasty for glenohumeral osteoarthritis.