

# Arthroscopic Rotator Cuff Repair with Concomitant Subacromial Decompression is Associated with Lower Reoperation Rates at 2, 4, and 6 Years

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**INTRODUCTION:** There is conflicting evidence regarding the risks and benefits of rotator cuff repair (RCR) with concomitant arthroscopic subacromial decompression (ASD). Some evidence suggests no difference in reoperation rates following RCR with or without ASD, while other studies have found that those undergoing concomitant ASD may experience higher reoperation rates. The purpose of this study was to compare the two, four, and six-year reoperation rates in patients undergoing RCR with or without concomitant ASD.

**METHODS:** A retrospective cohort analysis was performed using a national all-payer claims database. Current Procedural Terminology (CPT) and International Classification of Disease (ICD) 10 codes were used to identify patients undergoing primary open or arthroscopic RCR with or without concomitant ASD. Laterality of the procedure was identified by pairing laterality-specific ICD-10 codes to CPT codes. The primary study outcome was reoperation rates at two, four, and six years. Univariate analysis was performed on demographic variables (age, gender, and comorbidities contained within the Elixhauser Index) using Student T-tests and Chi-squared tests. Multivariate analysis was performed using logistic regression. To control for potential confounding variables, demographics and comorbidities with a p-value <0.2 were incorporated as independent variables in the logistic regression.

**RESULTS:** A total of 969,183 patients who underwent RCR were identified; 19,403 patients met the inclusion/exclusion criteria. Of those 13,779 (71%) received concomitant ASD and 5,629 (29%) did not. Patients undergoing RCR with concomitant ASD had lower odds of subsequent RCR at two (0.68; 0.58-0.79; p<0.001), four (0.61; 0.52-0.71; p<0.001), and six years (0.58; 0.51-0.67; p<0.001) compared to those who underwent RCR without ASD. Patients with concomitant ASD also had lower odds of any reoperation to the ipsilateral shoulder at two (0.65; 0.57-0.73; p<0.001), four (0.59; 0.54-0.67; p<0.001), and six years (0.59; 0.53-0.68; p<0.001) compared to those without ASD.

**DISCUSSION AND CONCLUSION:** RCR with concomitant ASD is associated with reduced odds of revision rotator cuff repair and all-cause reoperation in the ipsilateral shoulder at two, four, and six years. Reduced mid-term reoperation rates within our dataset suggest a low threshold for performing concomitant ASD at the time of primary open or arthroscopic RCR.

Table 1. Multivariable analysis of reoperation after RCR with or without ASD.

	Odds Ratio	Lower 95% CI	Upper 95% CI	P-value
<b>2 Year Reoperation</b>				
RCR	0.68	0.58	0.79	<0.001
BT	0.74	0.52	1.05	0.094
Tenotomy/Debridement	0.90	0.74	1.11	0.340
Distal Clavicle	0.66	0.47	0.93	<b>0.017</b>
Other Scope	1.10	0.89	1.36	0.352
Arthroplasty	0.47	0.37	0.59	<0.001
Any	0.65	0.57	0.73	<0.001
<b>4 Year Reoperation</b>				
RCR	0.61	0.52	0.71	<0.001
BT	0.68	0.49	0.93	<b>0.014</b>
Tenotomy/Debridement	0.79	0.66	0.95	<b>0.014</b>
Distal Clavicle	0.56	0.42	0.75	<0.001
Other Scope	0.92	0.77	1.11	0.406
Arthroplasty	0.49	0.40	0.61	<0.001
Any	0.59	0.54	0.67	<0.001
<b>6 Year Reoperation</b>				
RCR	0.58	0.51	0.67	<0.001
BT	0.68	0.51	0.92	<b>0.012</b>
Tenotomy/Debridement	0.76	0.64	0.91	<b>0.002</b>
Distal Clavicle	0.52	0.39	0.69	<0.001
Other Scope	0.88	0.73	1.05	0.152
Arthroplasty	0.49	0.40	0.59	<0.001
Any	0.59	0.53	0.68	<0.001

Significance level = 0.05 (bolded). BT, Biceps tenodesis; RCR, Rotator cuff repair.