

Improvement in Sleep Disturbance Following Arthroscopic Rotator Cuff Repair

Daniel F Schodlbauer, Casey Michelle Beleckas¹, Austin Vegas, Albert Mousad, Jonathan Chad Levy²

¹Levy Shoulder To Hand Center At the Paley Orthoped, ²Levy Shoulder to Hand Center at the Paley Orthopedic & Spine Institute

INTRODUCTION: Approximately 90% of patients express concerns with sleep shortly after developing shoulder-related symptoms. Previous small cohort studies have demonstrated the impact of rotator cuff repair on sleep, but none have characterized the observed benefits. The purpose of this study is to evaluate sleep improvement after rotator cuff repair including the speed of sleep recovery, the time at which improvement plateaus, and the longer-term maintenance of improved sleep.

METHODS:

A retrospective review of our institution's shoulder and elbow repository identified patients who underwent primary arthroscopic rotator cuff repair from 2012 – 2021 and reported sleep disturbance preoperatively. Patients were evaluated using sleep-related questions from the Simple Shoulder Test (SST) and American Shoulder and Elbow Surgeon (ASES) score. Sleep outcomes were compared from a preoperative visit to 3-month, 6-month, 12-month, and most recent follow-ups to evaluate efficacy of treatment, speed of recovery and improvement plateaus.

RESULTS: Among 677 RCR patients, 95.7% (648/677) reported sleep disturbance preoperatively. A total of 474 met inclusion criteria with median follow-up of 4.1 years (IQR, 2.1-6.1). At most recent follow-up, 81.8% were able to sleep comfortably and 65.7% were able to sleep on the affected side. A plateau in the ability to sleep comfortably was seen at 6 months while no plateau was observed in the ability to sleep on the affected side. More rapid improvement in the ability to sleep comfortably occurred during the first 3 months and from 3 – 6 months for the ability to sleep on the affected side.

DISCUSSION AND CONCLUSION:

This study demonstrates that the majority of patients with sleep disturbance who undergo RCR, report significant, rapid, and lasting improvement in the ability to sleep comfortably and the ability to sleep on the affected side.

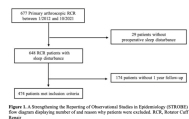


Figure 1. A flowchart showing the selection of 474 patients from 677 RCR patients. 23 patients were excluded (10 without sleep disturbance, 13 without follow-up). 180 patients were excluded (100 without sleep disturbance, 80 without follow-up).

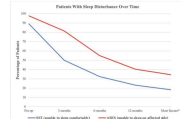


Figure 2. Timeline showing the resolution of sleep disturbance. The number of patients with sleep disturbance decreased over time, while the number of patients without sleep disturbance increased over time.

Table 1. Patient Demographics	Number of Patients (n=474)	Percentage (%)
Age	55.2 (SD 12.1)	55.2 (SD 12.1)
Sex	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%
Side	238 (50.2%)	50.2%

Table 2. Correlation between ASES and Sleep Outcomes	Correlation Coefficient	p-value
Sleep Outcomes	0.75	<0.0001
SST Sleep (ability to sleep comfortably)	-0.15	<0.0001
Preoperative	-0.15	<0.0001
3 months	-0.15	<0.0001
6 months	-0.15	<0.0001
12 months	-0.15	<0.0001
Most recent follow-up	-0.15	<0.0001
ASES Sleep (ability to sleep on affected side)	-0.15	<0.0001
Preoperative	-0.15	<0.0001
3 months	-0.15	<0.0001
6 months	-0.15	<0.0001
12 months	-0.15	<0.0001
Most recent follow-up	-0.15	<0.0001
ASES Sleep (ability to sleep on affected side)	-0.15	<0.0001
Preoperative	-0.15	<0.0001
3 months	-0.15	<0.0001
6 months	-0.15	<0.0001
12 months	-0.15	<0.0001
Most recent follow-up	-0.15	<0.0001

Table 3. Sleep Recovery with Time	Percentage (%)
Preoperative	95.7%
3 months	81.8%
6 months	81.8%
12 months	81.8%
Most recent follow-up	81.8%
ASES Sleep (ability to sleep on affected side)	65.7%
Preoperative	95.7%
3 months	81.8%
6 months	81.8%
12 months	81.8%
Most recent follow-up	81.8%

Table 4. Correlation between ASES and Sleep Outcomes	Correlation Coefficient	p-value
Sleep Outcomes	0.75	<0.0001
SST Sleep (ability to sleep comfortably)	-0.15	<0.0001
Preoperative	-0.15	<0.0001
3 months	-0.15	<0.0001
6 months	-0.15	<0.0001
12 months	-0.15	<0.0001
Most recent follow-up	-0.15	<0.0001
ASES Sleep (ability to sleep on affected side)	-0.15	<0.0001
Preoperative	-0.15	<0.0001
3 months	-0.15	<0.0001
6 months	-0.15	<0.0001
12 months	-0.15	<0.0001
Most recent follow-up	-0.15	<0.0001