

Comparative Effectiveness of Interventions for Rotator Cuff Tears in Adults

Key Clinical Issue

What is the comparative effectiveness of interventions to manage rotator cuff tears?

Background Information

Partial or full tears of the rotator cuff (RC) result from injury or degeneration, and the incidence increases with age. Patients may experience significant disability, including work absenteeism and lost productivity.

Patients who seek treatment for RC tears commonly receive 6 to 12 weeks of nonoperative treatment, which may include pain management, rest, passive and active exercise, among others. Surgical interventions are used when nonoperative therapy fails and for certain patients, including some with traumatic tears. Patients and clinicians face several decisional dilemmas, including whether to opt for early surgical intervention or if and when to forgo nonoperative treatment for operative intervention. Knowing how nonoperative and operative treatments compare in their effectiveness for relieving pain and restoring movement and function is important to these decisions.

Conclusions

Overall, the evidence is too limited to provide support for earlier surgical intervention when compared to the current practice of nonoperative interventions followed by surgery if needed. Significant improvements were seen in both operative and nonoperative interventions. There is limited evidence for benefits and harms to guide choice among various operative approaches, and insufficient evidence to choose between nonoperative approaches. Future studies are required.

A note about this Clinician Guide

A **systematic review** of 137 clinical studies was conducted by independent researchers, funded by AHRQ, to synthesize the evidence on what is known and not known about this clinical issue.

This topic was nominated through a public process. The research questions and the results of the report were subject to expert input, peer review, and public comment.

The results of this review are summarized here for use in decisionmaking and in discussions with patients. The full report, with references for included and excluded studies, is available at www.effectivehealthcare.ahrq.gov.

Clinical Bottom Line

Timing of Surgical Intervention: Evidence is too limited to draw conclusions about the comparative effectiveness of early surgical repair when compared to late surgical repair following nonoperative interventions.

Operative vs. Nonoperative Interventions*: Significant improvements were seen in all study groups regardless of the intervention. Although there was a trend for better outcomes with surgery, results were too limited to permit conclusions.

Nonoperative Interventions†: The variety of interventions and the low quality of studies precludes any conclusions about the most effective nonoperative patient-management strategy.

Operative Interventions:

Functional outcomes were similar for open vs. mini-open repair; mini-open vs. arthroscopic repair; open or mini-open vs. arthroscopic repair; and arthroscopic repair with or without acromioplasty (●●○). However, exceptions were:

- **Mini-open vs. open repair:** Patients may return to work or sports approximately 1 month earlier if they have a mini-open repair ($p < 0.00001$). ●●○
- **Open repair vs. open or arthroscopic debridement:** Open repair results in greater improvement in functional outcomes than does debridement ($p \leq 0.03$). ●●○

Postoperative Rehabilitation‡: Overall, patients improved over the course of postoperative followup. However, there was not enough quality evidence to determine the optimal postoperative rehabilitation protocol.

Adverse Events: In general, complication rates were low for clinically important complications such as retears, stiffness, infection, and neurological injury.

* Nonoperative comparators included shock-wave therapy, steroid injection, physical therapy, modified activity, oral medication, passive stretching, and strengthening. Operative interventions included mini-open, open, arthroscopic debridement, or open repair with acromioplasty.

† Nonoperative interventions included stretching and strengthening, steroid injections, and oral medications.

‡ Postoperative rehabilitation interventions usually included an unspecified physical therapy component; however, the comparisons varied across studies.

Confidence Scale

High: ●●● There are consistent results from good-quality studies. Further research is very unlikely to change the conclusions.

Moderate: ●●○ Findings are supported, but further research could change the conclusions.

Low: ●○○ There are very few studies, or existing studies are flawed.

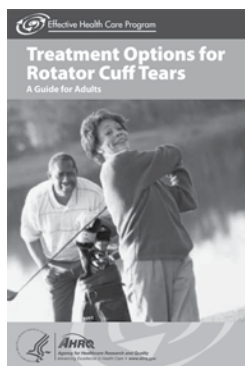
Additional Issues

- Three small comparative studies assessed augmentation, such as grafts or patches, in the repair of an RC tear. However, evidence was too limited to permit conclusions.
- Although older age, increasing tear size, and extent of preoperative symptoms were associated with recurrent tears in several studies, evidence regarding the relationship of patient or disease characteristics to prognosis was too limited to permit definitive conclusions.

What To Discuss With Your Patients

- Whether or not the symptoms of their RC tear can be addressed by nonoperative or operative interventions or both, and their values and preferences regarding these options.
- Their role in adhering to a therapeutic plan, whether it is nonoperative or operative, as well as in postoperative rehabilitation.
- The types of surgery available if surgery is needed.
- How postoperative rehabilitation will affect their overall clinical outcomes.
- How long it may take before they will be able to return to their normal daily activities, depending on the required intervention.
- Any other medical conditions or concerns they may have that will influence the decision to address the RC tear with nonoperative or operative interventions or both.

Resource for Patients



Treatment Options for Rotator Cuff Tears, A Guide for Adults is a free companion to this clinician guide. It can help patients talk with their health care professionals about the many options for treatment. It provides information about:

- Types of nonoperative treatments.
- Types of operative treatments.
- Current evidence of effectiveness and harms.
- Questions for patients to ask their doctor.

Gaps in Knowledge

- Additional comparative effectiveness research of open, mini-open, and arthroscopic approaches is a priority, as arthroscopic procedures are more costly and technically more difficult.
- Studies are needed on the effectiveness of early vs. delayed surgery and nonoperative vs. operative interventions. Also needed are appropriate comparisons of nonoperative treatments, the use of augmentation, analyses of the long-term effectiveness of treatments (minimum of 12 months), and the influence of patient prognostic factors.

Future Research Needs

- Consensus is needed on outcomes that are important to both clinicians and patients to ensure consistency and comparability across future studies.
- Future studies should be randomized, employ a comparison or control group where appropriate and feasible, and ensure comparability of treatment groups.

Ordering Information

For electronic copies of *Treatment Options for Rotator Cuff Tears, A Guide for Adults* (AHRQ Pub. No. 10(11)-EHC050-A), this clinician guide, and the full systematic review, visit www.effectivehealthcare.ahrq.gov. To order free print copies, call the AHRQ Publications Clearinghouse at 800-358-9295.

Source

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