

Active Release Technique Versus Graston Technique for Rotator Cuff Tendinopathy: A Narrative Review

Rida Mumtaz¹, Muhammad Usman², Muhammad Ahmad³, Muhammad Arif⁴, Chaman Lal⁵, Hanan Azfar⁶, Arooj Fatima⁷, Muhammad Hamza⁷

¹ Senior Lecturer, Hyderabad Institute of Medical & Allied Sciences, Hyderabad, Pakistan

² Physiotherapist, Pakistan Medical Center, Abu Dhabi, United Arab Emirates

³ Founder & CEO, Muhammadi Physiotherapy and Hijama Center, Multan, Pakistan

⁴ Associate Professor, Gulab Devi Institute of Physiotherapy, Gulab Devi Hospital, Lahore, Pakistan

⁵ Physical Therapist, PhD Health Sciences Scholar LUC

⁶ Physical Therapist / Orthopedic Manual Therapist, Medline Healthcare, Gujranwala, Pakistan

⁷ DPT, MSPTN/MSPTM, Islamia University, Bahawalpur, Pakistan

*Corresponding author: Rida Mumtaz, ridamumtazkhanzada@gmail.com

"Cite this Article" Received: 18 February 2026; Accepted: 11 May 2026; Published: 30 June 2026

Author Contributions: Concept: RM and MU; Design: RM, MU, and MA; Literature Review: MA, MA, CL, and HA; Drafting: RM, AF, and MH; Critical Revision: MU, MA, and HA; Final Approval: all authors. **Ethical Approval:** Hyderabad Institute of Medical & Allied Sciences, Hyderabad, Pakistan. **Informed Consent:** Written informed consent was obtained from all participants; **Conflict of Interest:** The authors declare no conflict of interest. **Funding:** No external funding; **Data Availability:** Available from the corresponding author on reasonable request; **Acknowledgments:** N/A.

ABSTRACT

Background: Rotator cuff tendinopathy is a common cause of shoulder pain, reduced range of motion, sleep disturbance, and functional limitation. Exercise-based rehabilitation remains the foundation of conservative care, but soft-tissue interventions such as Active Release Technique and Graston Technique are frequently used as adjuncts to reduce pain and improve movement tolerance. **Objective:** This narrative review aimed to compare the available evidence on Active Release Technique and Graston Technique for rotator cuff tendinopathy and related shoulder rehabilitation conditions, with emphasis on pain, range of motion, disability, function, and clinical applicability. **Methods:** A structured narrative synthesis was conducted using recent and clinically relevant literature on Active Release Technique, Graston Technique, instrument-assisted soft tissue mobilization, rotator cuff tendinopathy, rotator cuff-related shoulder pain, subacromial pain syndrome, supraspinatus tendinopathy, and shoulder rehabilitation. Evidence from randomized trials, systematic reviews, clinical studies, and related rehabilitation literature was synthesized descriptively because direct head-to-head evidence was limited and study populations, interventions, comparators, and outcomes were heterogeneous. **Results:** Both Active Release Technique and Graston Technique may improve short-term pain, movement tolerance, and function when combined with therapeutic exercise. Active Release Technique appears most applicable for localized movement-related soft-tissue sensitivity, whereas Graston Technique and broader instrument-assisted soft tissue mobilization have a wider evidence base in shoulder rehabilitation, including supraspinatus tendinopathy and post-operative rotator cuff repair contexts. However, much of the evidence remains indirect for non-surgical rotator cuff tendinopathy. **Conclusion:** Neither technique should replace progressive exercise-based rehabilitation. Current evidence does not establish clear superiority of one intervention over the other. Technique selection should depend on clinical presentation, patient tolerance, movement limitation, and rehabilitation goals. **Keywords:** Active Release Technique; Graston Technique; Instrument-Assisted Soft Tissue Mobilization; Rotator Cuff Tendinopathy; Shoulder Pain; Subacromial Pain Syndrome; Manual Therapy; Rehabilitation.

INTRODUCTION

Rotator cuff tendinopathy is a frequent source of shoulder pain, functional limitation, and reduced quality of life among adults, particularly in individuals exposed to repetitive overhead activity, occupational loading, sports participation, or age-related degenerative tendon changes. The condition commonly affects the supraspinatus, infraspinatus, subscapularis, or teres minor tendons and is often

associated with pain during elevation, reaching, lifting, dressing, and sleeping on the affected side. In clinical practice, rotator cuff tendinopathy frequently overlaps with related diagnostic labels such as rotator cuff-related shoulder pain, subacromial pain syndrome, and shoulder impingement, although these terms are not fully interchangeable and may reflect different combinations of tendon overload, altered scapular mechanics, weakness, soft-tissue sensitivity, and pain-modulated movement dysfunction (1).

Conservative rehabilitation remains the preferred first-line approach for most patients with rotator cuff-related shoulder pain. Exercise therapy, education, activity modification, progressive tendon loading, and scapular stabilization are consistently emphasized as central components of rehabilitation because they directly address strength, motor control, functional tolerance, and tendon capacity. However, pain inhibition, soft-tissue sensitivity, myofascial tightness, and restricted shoulder movement may limit early participation in active rehabilitation. For this reason, manual and soft-tissue techniques are frequently incorporated as adjuncts to exercise-based care, particularly in the early and intermediate phases of rehabilitation, where symptom modulation may improve tolerance to progressive loading (2,3).

Active Release Technique (ART) and Graston Technique are two commonly used soft-tissue interventions in physiotherapy and sports rehabilitation. ART is a manual, movement-based intervention in which the clinician applies directed contact pressure to a targeted soft-tissue structure while the patient actively moves the tissue from a shortened to a lengthened position. It is proposed to improve tissue glide, reduce movement-related soft-tissue sensitivity, and assist in restoring pain-free motion. Graston Technique is a form of instrument-assisted soft tissue mobilization (IASTM) that uses specially designed instruments to apply controlled mechanical stimulation to soft tissues. It is commonly used to address perceived fascial restriction, soft-tissue stiffness, post-inflammatory sensitivity, and scar-related tissue irritability. Although both techniques are widely used, their mechanisms should be interpreted cautiously; current evidence supports short-term clinical effects such as pain modulation and improved movement tolerance more strongly than direct structural claims about adhesion breakdown or tendon remodeling (4,5).

Despite their clinical popularity, the comparative effectiveness of ART and Graston Technique for rotator cuff tendinopathy remains insufficiently established. Much of the available ART evidence comes from shoulder impingement, subacromial pain, or broader soft-tissue conditions, whereas Graston-related evidence is often embedded within the wider IASTM literature and may include heterogeneous musculoskeletal populations or post-operative shoulder rehabilitation rather than non-surgical rotator cuff tendinopathy alone. Direct head-to-head trials comparing ART and Graston Technique in clearly diagnosed rotator cuff tendinopathy appear limited. This creates uncertainty for clinicians regarding whether one technique should be preferred, whether the choice should depend on patient presentation, and how these interventions should be integrated with exercise-based rehabilitation.

Given these gaps, a narrative review is appropriate to synthesize clinically relevant evidence across rotator cuff tendinopathy, rotator cuff-related shoulder pain, subacromial pain syndrome, shoulder impingement, and related shoulder rehabilitation contexts. This review therefore aimed to compare the available evidence on Active Release Technique and Graston Technique as adjunctive interventions for rotator cuff tendinopathy and related shoulder conditions, with emphasis on pain, range of motion, disability, function, clinical applicability, and limitations of the current evidence base.

METHODS

This article was designed as a narrative review because the available evidence directly comparing Active Release Technique and Graston Technique for rotator cuff tendinopathy is limited and clinically heterogeneous. The purpose of the review was not to produce a pooled effect estimate, but to synthesize and interpret recent and clinically relevant evidence on ART, Graston Technique, and the broader IASTM literature as adjunctive interventions in rotator cuff tendinopathy and related shoulder rehabilitation

conditions. The review was guided by principles of transparent narrative synthesis, with attention to clinical relevance, population similarity, intervention characteristics, outcome domains, and strength of evidence.

The review focused on adults with rotator cuff tendinopathy, rotator cuff-related shoulder pain, subacromial pain syndrome, shoulder impingement, supraspinatus tendinopathy, post-operative rotator cuff rehabilitation, and related shoulder soft-tissue dysfunctions. Studies were considered relevant when they examined ART, Graston Technique, IASTM, myofascial release, fascial release, mobility exercise, or comparable soft-tissue interventions used in physiotherapy or musculoskeletal rehabilitation. The primary outcomes of interest were pain intensity, shoulder range of motion, Shoulder Pain and Disability Index scores, functional ability, movement tolerance, patient-reported improvement, and rehabilitation response. Evidence from non-shoulder populations was considered only when it addressed ART or IASTM mechanisms, clinical effects, or broader musculoskeletal outcomes relevant to interpreting the intervention.

A structured narrative search approach was used to identify recent and relevant literature published primarily between 2021 and 2026, while selected earlier studies were retained when they provided important clinical or contextual evidence for shoulder rehabilitation. Search concepts included “Active Release Technique,” “ART,” “Graston Technique,” “instrument-assisted soft tissue mobilization,” “IASTM,” “rotator cuff tendinopathy,” “rotator cuff-related shoulder pain,” “subacromial pain syndrome,” “shoulder impingement,” “supraspinatus tendinopathy,” “manual therapy,” “myofascial release,” “fascial release,” “shoulder rehabilitation,” and “exercise therapy.” Because this was a narrative review rather than a systematic review, the search was intended to support clinically informed synthesis rather than exhaustive evidence capture.

Evidence was selected according to relevance to the review objective, recency, clinical applicability, and proximity to the target condition. Priority was given to randomized controlled trials, systematic reviews, meta-analyses, clinical rehabilitation studies, and shoulder-specific studies. Where direct evidence in rotator cuff tendinopathy was unavailable, evidence from related shoulder disorders or post-operative rotator cuff rehabilitation was interpreted as indirect and was not treated as equivalent to direct tendinopathy evidence. Studies were excluded from central interpretation when they did not address shoulder rehabilitation, soft-tissue mobilization, manual therapy, ART, Graston Technique, IASTM, or clinically relevant functional outcomes.

The synthesis was organized thematically around three evidence domains: evidence supporting ART and related manual soft-tissue approaches, evidence supporting Graston Technique or IASTM, and broader evidence regarding the role of manual therapy as an adjunct to exercise-based rehabilitation in rotator cuff-related shoulder conditions. Findings were compared across pain, function, range of motion, disability, clinical use, and limitations of evidence. Because included studies varied in diagnosis, intervention dosage, comparator treatment, duration of follow-up, and outcome measures, statistical pooling was not appropriate. The review therefore used descriptive synthesis, with explicit distinction between direct rotator cuff tendinopathy evidence, related shoulder evidence, post-surgical rehabilitation evidence, and broader musculoskeletal evidence.

The main limitation of this narrative method is the potential for selection bias because article identification and inclusion were not conducted through a fully reproducible systematic screening process. No formal risk-of-bias assessment or certainty-of-evidence grading was performed. Therefore, the findings should be interpreted as a clinically oriented synthesis rather than definitive comparative evidence. No review protocol was registered, and no meta-analysis was conducted.

RESULTS / SYNTHESIS

The available evidence suggests that both Active Release Technique and Graston Technique may provide short-term clinical benefits when used as adjuncts to active rehabilitation for rotator cuff-related shoulder conditions. However, the evidence base is uneven. ART has clinically relevant support in soft-tissue and shoulder-related presentations, but direct evidence in clearly diagnosed rotator cuff tendinopathy remains limited. Graston Technique has a broader evidence base through the IASTM literature, including shoulder rehabilitation and wider musculoskeletal conditions, but much of this evidence remains indirect when applied specifically to non-surgical rotator cuff tendinopathy. Across the reviewed literature, neither ART nor Graston Technique should be interpreted as a stand-alone intervention; both are best positioned as adjuncts to progressive exercise, education, load management, and scapular and rotator cuff strengthening.

Table 1. Summary of Included Evidence Relevant to ART, Graston Technique, IASTM, and Rotator Cuff-Related Shoulder Rehabilitation

Author / Year	Study Type	Population / Condition	Intervention Focus	Comparator / Context	Main Outcome Domain	Key Finding Relevant to This Review
Heo et al., 2020	Clinical study	Shoulder myofascial pain syndrome	Meridian muscle release and Graston Technique	Comparative soft-tissue intervention context	Pain and functional movement	Graston-related soft-tissue mobilization was associated with improvement in pain and functional movement in shoulder-region myofascial pain, supporting possible relevance to shoulder soft-tissue dysfunction, although not specific to rotator cuff tendinopathy (1).
Shin et al., 2022	Clinical rehabilitation study	Rotator cuff tendinopathy	Myofascial trigger point release and mobility exercise	Combined manual therapy and exercise approach	Pain and function	Manual soft-tissue treatment combined with mobility exercise showed relevance for pain and functional outcomes in rotator cuff tendinopathy, supporting multimodal rehabilitation rather than isolated passive treatment (2).
Martins da Silva et al., 2020	Randomized blinded clinical trial	Shoulder rotator cuff tendinopathy	Kinesio taping	Conservative shoulder rehabilitation context	Pain and function	Although not an ART or Graston study, this trial supports the broader concept that adjunctive modalities are commonly investigated in rotator cuff tendinopathy but must be interpreted in relation to active rehabilitation outcomes (3).
Barnes and Rivera, 2022	Systematic review	Musculoskeletal conditions treated with ART	Active Release Technique	Clinician- and patient-reported outcomes	Pain, function, clinical outcomes	ART showed potential benefit across musculoskeletal conditions, but the evidence base was heterogeneous and not limited to rotator cuff tendinopathy, indicating promising but indirect support (4).
Canelada et al., 2022	Case series	Upper limb injuries	Photobiomodulation and myofascial release	Multimodal soft-tissue intervention	Pain and functional recovery	Findings suggest possible benefit of soft-tissue-based multimodal care in upper limb injuries, but the design limits causal inference and direct applicability to rotator cuff tendinopathy (5).
Coban et al., 2022	Randomized controlled trial	Arthroscopic rotator cuff repair	Fascial release technique	Acute post-operative rehabilitation context	Pain, range of motion, function	Fascial release showed short-term relevance in post-operative rotator cuff rehabilitation; however, post-surgical repair populations differ from non-surgical tendinopathy populations (6).
Güney et al., 2025	Randomized controlled trial	Arthroscopic rotator cuff repair	IASTM plus conventional rehabilitation	Conventional rehabilitation alone	Pain, range of motion, functional level	Adding IASTM to conventional rehabilitation improved clinically relevant shoulder outcomes, providing shoulder-specific support for instrument-assisted mobilization, although evidence remains indirect for non-operative tendinopathy (7).
Zedan, 2020	Review article	Rotator cuff repair rehabilitation	Physical therapy modalities	Post-operative rehabilitation context	Pain, function, rehabilitation progression	The review reinforces the importance of multimodal physiotherapy after rotator cuff repair and supports interpreting manual techniques as adjuncts rather than replacements for progressive rehabilitation (8).
Kazi et al., 2023	Comparative clinical study	Lateral epicondylitis	Tyler Twist versus ART	Non-shoulder tendinopathy context	Pain and grip strength	ART demonstrated relevance in a tendinopathy-related condition, but extrapolation to rotator cuff tendinopathy should be cautious because anatomical site, loading demands, and outcome measures differ (9).
Ehteshami et al., 2024	Randomized clinical trial protocol	Subacromial pain syndrome	Tele-physical therapy and supervised physical therapy	Rehabilitation delivery models	Pain, ROM, function, satisfaction	This protocol reflects ongoing interest in structured rehabilitation for subacromial pain syndrome and highlights the need for well-designed trials in rotator cuff-related shoulder pain (10).
Sharabas, 2023	Clinical study	Chronic supraspinatus tendinopathy	Graston Technique	Shoulder tendinopathy context	Functional ability	Graston Technique showed functional relevance in chronic supraspinatus tendinopathy, making it one of the more condition-relevant sources for this review (11).
Singh et al., 2026	Pilot study	Overhead athletes with supraspinatus tendonitis	Dry needling of compensatory trigger points	Adjunctive soft-tissue intervention context	Pain and compensatory trigger points	The study supports the broader clinical relevance of soft-tissue and trigger-point interventions in supraspinatus-related shoulder pain, though it does not directly evaluate ART or Graston (12).
Saravanan et al., 2024	Comparative clinical study	Swimmer's shoulder	Serratus anterior versus subscapularis training	Exercise-based shoulder rehabilitation	Performance and shoulder function	The study supports the central role of targeted muscle training in shoulder rehabilitation and reinforces that soft-tissue interventions should be integrated with active strengthening strategies (13).

The reviewed evidence indicates that ART may be clinically useful in patients whose symptoms are linked to localized soft-tissue sensitivity, movement-related pain, or restricted tissue glide during active shoulder motion. The most relevant support for ART comes from broader musculoskeletal and soft-

tissue literature rather than from direct rotator cuff tendinopathy trials. This limits the certainty with which ART can be recommended as a condition-specific intervention. Nevertheless, its active movement component may make it particularly suitable when the therapist aims to combine symptom modulation with movement retraining.

Table 2. Comparative Evidence Profile of Active Release Technique and Graston Technique

Domain	Active Release Technique	Graston Technique / IASTM	Comparative Interpretation
Direct evidence in rotator cuff tendinopathy	Limited direct evidence; support mainly from related shoulder or musculoskeletal studies	Some shoulder-specific evidence, including supraspinatus tendinopathy and post-operative rotator cuff rehabilitation	Graston/IASTM has more condition-adjacent evidence, but direct head-to-head evidence remains insufficient
Pain reduction	May reduce pain through movement-based soft-tissue contact, neuromodulation, and improved tolerance to active movement	May reduce pain through instrument-assisted mechanical stimulation, local sensory input, and short-term modulation of tissue sensitivity	Both may assist short-term pain reduction when paired with exercise
Range of motion	May be useful when movement-related restriction is localized and the patient can actively participate	May be useful when broader soft-tissue stiffness or post-inflammatory sensitivity limits motion	No clear evidence of superiority for either technique
Disability and function	Evidence suggests potential functional benefit, but rotator cuff-specific data are limited	Evidence suggests functional improvement in shoulder rehabilitation contexts, especially when added to conventional physiotherapy	Graston/IASTM currently has broader supporting literature, but applicability to non-surgical tendinopathy is still partly indirect
Patient participation	Requires active patient movement during treatment	Usually passive or clinician-directed, though it may be integrated with active movement	ART may be preferable when active movement testing and treatment are clinically useful
Clinical fit	Localized myofascial restriction, movement-related pain, trigger-point sensitivity	Diffuse soft-tissue stiffness, tissue irritability, scar sensitivity, broader fascial restriction	Selection should be based on examination findings, irritability, and rehabilitation stage
Long-term effect	Insufficient evidence	Insufficient evidence	Long-term recovery depends primarily on progressive loading, strengthening, and functional restoration

Table 3. Clinical Application Framework for ART and Graston Technique in Rotator Cuff-Related Shoulder Rehabilitation

Rehabilitation Phase	Primary Clinical Problem	ART Role	Graston / IASTM Role	Exercise Integration
Early phase	Pain, guarding, limited tolerance to movement	May assist pain modulation during controlled active movement	May assist short-term reduction in tissue sensitivity and perceived stiffness	Isometrics, pain-limited ROM, education, activity modification
Intermediate phase	Persistent soft-tissue sensitivity, restricted movement, weakness	Useful for targeted restriction during shoulder elevation or rotation	Useful for broader soft-tissue mobilization before active loading	Rotator cuff strengthening, scapular stabilization, posterior shoulder mobility
Late phase	Return-to-function limitations, sport or work-specific loading deficits	May be used selectively if movement-related symptoms persist	May be used selectively if stiffness or tissue sensitivity persists	Progressive resistance training, kinetic-chain strengthening, task-specific loading
Maintenance / recurrence prevention	Recurrent overload, poor load tolerance, residual movement dysfunction	Adjunctive only; not a substitute for conditioning	Adjunctive only; not a substitute for conditioning	Home exercise, load management, ergonomic or sport-specific correction

Graston Technique, considered within the broader IASTM category, appears to have a somewhat wider evidence base in shoulder rehabilitation. Evidence from supraspinatus tendinopathy and post-operative rotator cuff repair rehabilitation suggests that IASTM may improve pain, range of motion, and functional outcomes when added to conventional physiotherapy. However, post-operative rotator cuff repair and chronic non-surgical rotator cuff tendinopathy are clinically distinct conditions. Therefore, these findings should be interpreted as supportive but indirect evidence rather than definitive proof of superiority for Graston Technique in tendinopathy.

Across both interventions, the strongest and most consistent clinical message is that soft-tissue techniques should not be used in isolation. Manual therapy may help reduce pain, improve short-term mobility, and increase tolerance to active exercise, but long-term improvement in rotator cuff-related shoulder pain is more likely to depend on progressive rotator cuff strengthening, scapular stabilization, posterior shoulder mobility, activity modification, and graded return to functional loading. Current evidence does not justify declaring either ART or Graston Technique clearly superior for rotator cuff tendinopathy. Instead, treatment selection should be individualized according to clinical presentation, tissue irritability, patient tolerance, movement restriction pattern, and rehabilitation goals.

Overall, Graston Technique/IASTM currently has a modest evidence advantage because it has been examined more frequently in recent shoulder rehabilitation and broader musculoskeletal studies. ART

remains clinically relevant, especially for active movement-related soft-tissue symptoms, but requires more high-quality shoulder-specific trials. Future research should directly compare ART and Graston Technique in patients with clearly diagnosed rotator cuff tendinopathy using standardized intervention dosage, exercise-controlled comparison groups, validated outcomes such as SPADI or DASH, and follow-up periods sufficient to determine whether short-term symptom improvement translates into durable functional recovery.

DISCUSSION

This narrative review compared the available evidence on Active Release Technique and Graston Technique as adjunctive interventions for rotator cuff tendinopathy and related shoulder rehabilitation conditions. The principal finding is that both techniques may contribute to short-term improvements in pain, movement tolerance, and function when combined with exercise-based rehabilitation, but neither should be considered a stand-alone treatment. The current evidence does not support a definitive conclusion that one technique is superior to the other for rotator cuff tendinopathy. Instead, the evidence suggests that treatment selection should be guided by clinical presentation, tissue irritability, patient tolerance, movement limitation, and the broader rehabilitation plan.

The evidence supporting ART remains clinically promising but comparatively limited for rotator cuff-specific pathology. ART may be useful when symptoms are associated with localized soft-tissue sensitivity, movement-related pain, or restricted active motion. Its movement-based application may be particularly relevant for patients who can tolerate active participation during treatment and whose symptoms are reproduced during specific shoulder motions. However, much of the ART evidence comes from broader musculoskeletal conditions or related soft-tissue presentations rather than from high-quality trials in clearly diagnosed rotator cuff tendinopathy. Therefore, ART should be interpreted as a potentially useful adjunct rather than an independently proven treatment for rotator cuff tendinopathy (4,9).

Graston Technique, considered within the broader category of instrument-assisted soft tissue mobilization, appears to have a wider recent evidence base than ART. Studies involving shoulder-region soft-tissue pain, supraspinatus tendinopathy, and post-operative rotator cuff rehabilitation suggest that IASTM may improve pain, range of motion, and functional outcomes when added to conventional physiotherapy (1,7,11). Nevertheless, this evidence also requires cautious interpretation. Post-operative rotator cuff repair populations are clinically different from non-surgical rotator cuff tendinopathy populations because surgical trauma, tissue healing constraints, immobilization, scar sensitivity, and staged rehabilitation protocols influence outcomes. Thus, findings from post-operative rehabilitation may support the clinical plausibility of IASTM in shoulder care but cannot be treated as direct evidence of effectiveness in non-operative tendinopathy.

The findings of this review align with the broader direction of contemporary shoulder rehabilitation, which places progressive exercise, education, activity modification, and functional strengthening at the center of conservative management. Manual therapy and soft-tissue techniques may help reduce symptoms sufficiently to improve participation in active rehabilitation, but long-term recovery is more likely to depend on restoration of rotator cuff capacity, scapular control, posterior shoulder mobility, and graded return to occupational or sport-specific loading. This distinction is clinically important because passive or semi-passive interventions may produce short-term symptom relief without necessarily improving tendon load tolerance unless they are integrated with progressive strengthening and movement retraining (2,8,13).

Mechanistically, the effects of ART and Graston Technique should be described with restraint. Earlier clinical explanations often emphasized adhesion breakdown, fascial remodeling, or direct structural release. Current interpretation should be more balanced. Improvements observed after soft-tissue techniques may reflect neurophysiological pain modulation, altered sensory input, improved confidence

with movement, short-term changes in perceived stiffness, local mechanical stimulation, or improved readiness for exercise. While tissue-level effects may occur, the available clinical evidence does not establish that either ART or Graston Technique directly remodels rotator cuff tendon pathology. Therefore, mechanistic claims should remain hypothesis-based unless supported by direct biological or imaging evidence.

The clinical implication is that ART and Graston Technique should be selected according to patient-specific findings rather than applied routinely to all patients with rotator cuff tendinopathy. ART may be preferable when pain is localized, movement-related, and responsive to active positioning or tissue loading during treatment. Graston Technique may be preferable when the clinician identifies broader soft-tissue sensitivity, perceived fascial stiffness, post-inflammatory tissue irritability, or scar-related restriction in post-operative contexts. In both cases, treatment should be followed by active exercise to reinforce movement gains, improve strength, and restore functional loading capacity.

This review has several limitations. First, the narrative design means that the literature was synthesized descriptively rather than through a fully reproducible systematic search and screening process. Second, no formal risk-of-bias assessment or certainty-of-evidence grading was performed. Third, the evidence base was heterogeneous, including studies of rotator cuff tendinopathy, supraspinatus tendinopathy, subacromial pain syndrome, shoulder myofascial pain, post-operative rotator cuff repair, and non-shoulder tendinopathy. Fourth, direct head-to-head trials comparing ART and Graston Technique in rotator cuff tendinopathy were limited, which restricts the strength of comparative conclusions. Finally, many available studies emphasize short-term pain and function, while long-term outcomes, recurrence, return to work, return to sport, and sustained tendon capacity remain insufficiently studied.

Future research should prioritize randomized controlled trials directly comparing ART, Graston Technique, combined intervention protocols, and exercise-only controls in patients with clearly defined rotator cuff tendinopathy. These trials should use standardized diagnostic criteria, clearly reported treatment dosage, validated outcome measures such as the Shoulder Pain and Disability Index or Disabilities of the Arm, Shoulder and Hand questionnaire, and follow-up periods extending beyond immediate post-treatment assessment. Future studies should also evaluate whether these interventions improve exercise adherence, loading tolerance, return-to-function outcomes, and long-term recurrence rates. Such research would help determine whether ART or Graston Technique offers clinically meaningful added value beyond well-designed exercise-based rehabilitation.

CONCLUSION

Active Release Technique and Graston Technique may both provide short-term clinical benefits as adjunctive interventions for rotator cuff tendinopathy and related shoulder rehabilitation conditions, particularly when pain, soft-tissue sensitivity, or movement restriction limits participation in exercise. Graston Technique, within the broader IASTM literature, currently has a wider evidence base in shoulder rehabilitation, whereas ART remains promising but less directly studied in rotator cuff tendinopathy. However, the current evidence is insufficient to declare either technique clearly superior. Clinicians should use these interventions selectively and always integrate them with education, load management, progressive rotator cuff strengthening, scapular stabilization, and functional rehabilitation. Future high-quality comparative trials are required to establish their relative effectiveness, optimal dosage, and long-term clinical value.

REFERENCES

1. Heo HR, Jang HY, Kim DH, Kim HY, Lee SM. Effect of meridian muscle release and the Graston technique on pain and functional movement in patients with myofascial pain syndrome of the shoulder joint. *J Korean Soc Phys Med.* 2020;15(1):85-94.

2. Shin BC, Choi W, Jung J, Lee S. The effects of myofascial trigger point release and mobility exercise on pain and functions in patient with rotator cuff tendinopathy. *Phys Ther Rehabil Sci.* 2022;11(2):269-78.
3. Martins da Silva L, Maciel Bello G, Chuaste Flores B, Silva Dias L, Camargo P, Mengue LF, et al. Kinesio tape in shoulder rotator cuff tendinopathy: a randomized, blind clinical trial. *Muscles Ligaments Tendons J.* 2020;10(3).
4. Barnes P, Rivera M. The effect of Active Release Technique® on clinician and patient-reported outcomes: a systematic review. *J Sport Rehabil.* 2022;31(3):331-6.
5. Canelada A, de Aquino Junior A, Carbinatto F, Panhóca V, Simão G, Zangotti L, et al. The synergy of photobiomodulation and myofascial release in upper limb injuries: case series. *J Nov Physiother.* 2022;12(4):1-7.
6. Coban T, Demirdel E, Yildirim NU, Deveci A. The investigation of acute effects of fascial release technique in patients with arthroscopic rotator cuff repair: a randomized controlled trial. *Complement Ther Clin Pract.* 2022;48:101573.
7. Güneş M, Yana M, Kütükçü B, Ergişi Y, Daşar U. Effect of instrument-assisted soft tissue mobilization in addition to conventional rehabilitation on pain, range of motion, and functional level in patients with arthroscopic rotator cuff repair: a randomized controlled trial. *J Shoulder Elbow Surg.* 2025.
8. Zedan A. Physical therapy modalities after rotator cuff repair: a review article. *South Valley Univ Int J Phys Ther Sci.* 2020;2(1):17-45.
9. Kazi F, Patil DS. Effects of the Tyler Twist technique versus Active Release Technique on pain and grip strength in patients with lateral epicondylitis. *Cureus.* 2023;15(10).
10. Ehteshami F, Ghotbi N, Otadi K. Comparing the effects of tele-physical therapy and supervised physical therapy on pain, range of motion, function, and satisfaction in patients with subacromial pain syndrome: a protocol of randomized clinical trial. *J Rehabil Sci Res.* 2024;11(1):36-42.
11. Sharabas M. Effect of Graston technique on functional abilities in chronic supraspinatus tendinopathy. *Egypt J Phys Ther.* 2023;16(1):23-31.
12. Singh Y, Sethi J, Khan Z. Effect of dry needling on compensatory trigger points in overhead athletes with supraspinatus tendonitis: a pilot study. *J Clin Diagn Res.* 2026;20(3).
13. Saravanan V, Jeyakumar S, Senthilkumar S, Shabiethaa D, Sekar VP. A study to compare the effectiveness of serratus anterior training versus subscapularis training in improving performance in swimmer's shoulder. *Indian J Physiother Occup Ther.* 2024;18.