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RAPID RESEARCH

March 2022

Inside This Week: Rotator Cuff Tears: Diagnosis & Treatment

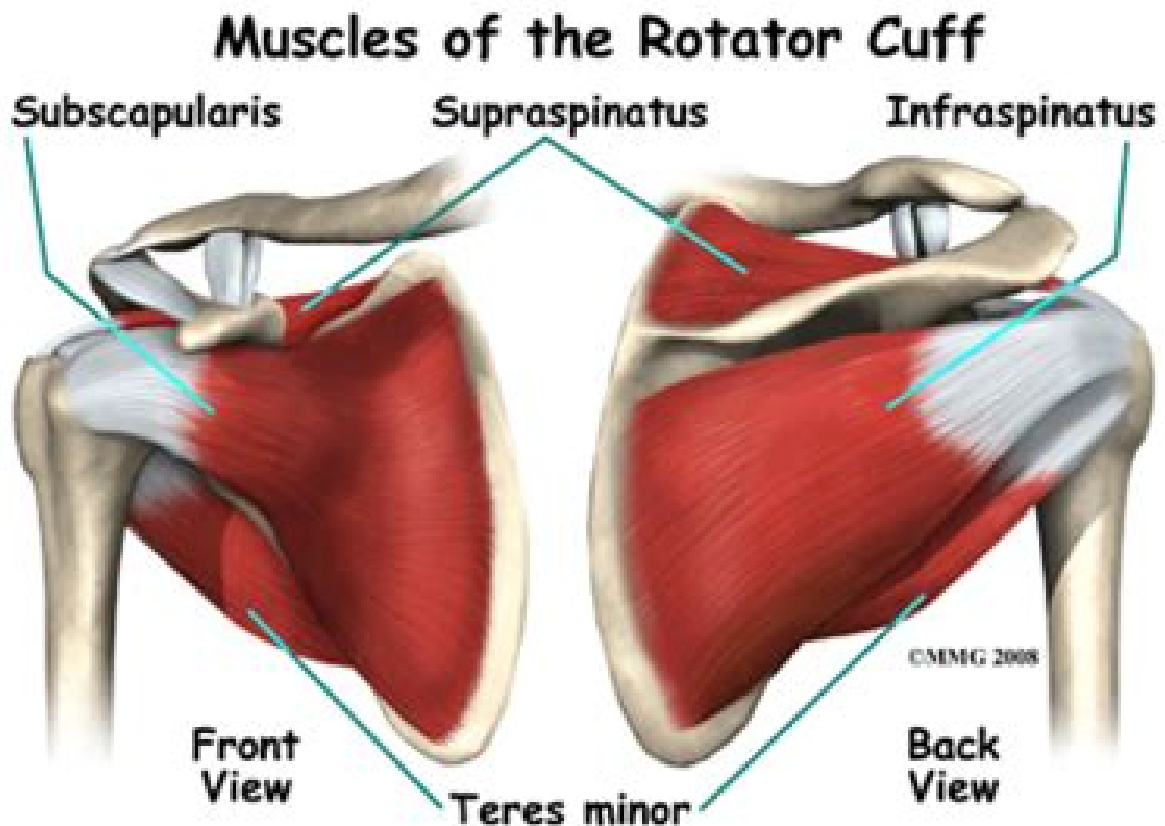
- ✓ Rotator Cuff Pain:
Exercise vs. Advice with or
without Steroid Injection
- ✓ Platelet Rich Plasma Injection
for Rotator Cuff Tears
- ✓ Accuracy of Dynamic 3D MRI to
Diagnose Rotator Cuff Tears



ROTATOR CUFF PAIN: EXERCISE VS. ADVICE WITH OR WITHOUT STEROID INJECTION

[Click for Full Text
\(Hopewell et al 2021\)](#)

This study assessed the clinical effectiveness of exercise compared with best-practice physiotherapy advice, with or without corticosteroid injection, in adults with a rotator cuff disorder.



KEY FINDINGS

708 participants, SPADI score tested over 12 months, 4 groups:

1. Progressive exercise (n = 174)
2. Best-practice advice (n = 174)
3. Corticosteroid injection then progressive exercise (n = 182)
4. Corticosteroid injection then best-practice advice (n = 178)

Avg Baseline SPADI score was 54.1

Overall improvement in all 4 groups over time.

Progressive Exercise vs. Best Advice:

No difference in pain and function at 12 months.

No difference overall at 8wk, 6 & 12 months time points.

Injections:

Improvement in pain and function at 8wks but not at 6 or 12mo.

No serious adverse events.

Cost Analysis:

Adding injection to advice increased cost by £10/participant

Exercise alone was £52 more/participant vs. advice

Injection + advice had a 54.93% probability of being the most cost-effective treatment.

MAIN TAKEAWAYS

Implications for health care:

This trial shows 6 progressive exercise interventions was not superior to a single best-practice advice session with a physiotherapist.

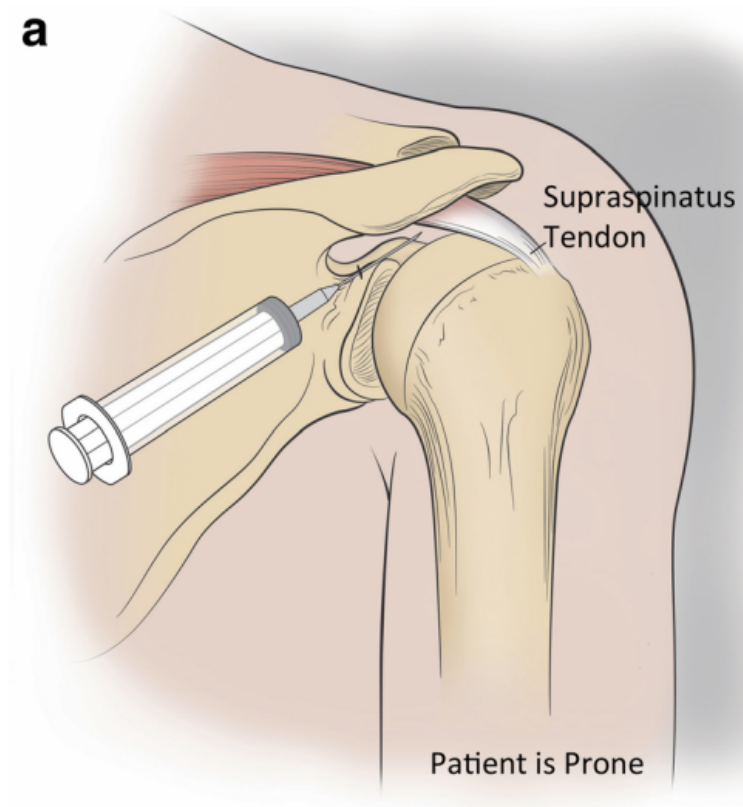
Subacromial corticosteroid injection improved shoulder pain and function at 8 weeks, but provided modest short-term benefit only.

Best-practice advice in combination with corticosteroid injection has a 54.93% probability of being the most cost-effective intervention for the NHS.

PLATELET RICH PLASMA INJECTION FOR ROTATOR CUFF TEARS

[Click for Full Text](#)
[\(Prodromos et al. 2021\)](#)

This study assessed the efficacy and safety of dual injection PRP into the shoulder of patients with rotator cuff pathology who have failed conservative treatment with a 2-year follow-up.



KEY FINDINGS

71 (MRI confirmed) pathological shoulders

Global improvement, Quick DASH and Pain scores collected at 6, 12, and 24 months.

Gobal Rating Scores; Positive Improvements:

77.9 % of patients at 6 months | 71.6 % at 1 year | 68.8 % at 2 years.

Avg. Pain Scores (0-100, 100 worse); (Baseline of 50.2 pre-injection)

6 months (26.2) | 12 months (22.4) | 2 year (18.2).

Avg Q- DASH scores (0-100, 100 worse); (Baseline of 39.2)

6 months (20.7) | 12 months (18.0) | 2 years (13.8)

Patients with > 50 % partial tear had the best overall improvement.

Patients with tendinitis had the poorest outcomes.

No adverse events were seen in any patient.

MAIN TAKEAWAYS

Dual PRP injection is consistently **safe & effective to treat partial rotator cuff tears** after failed conservative treatment.

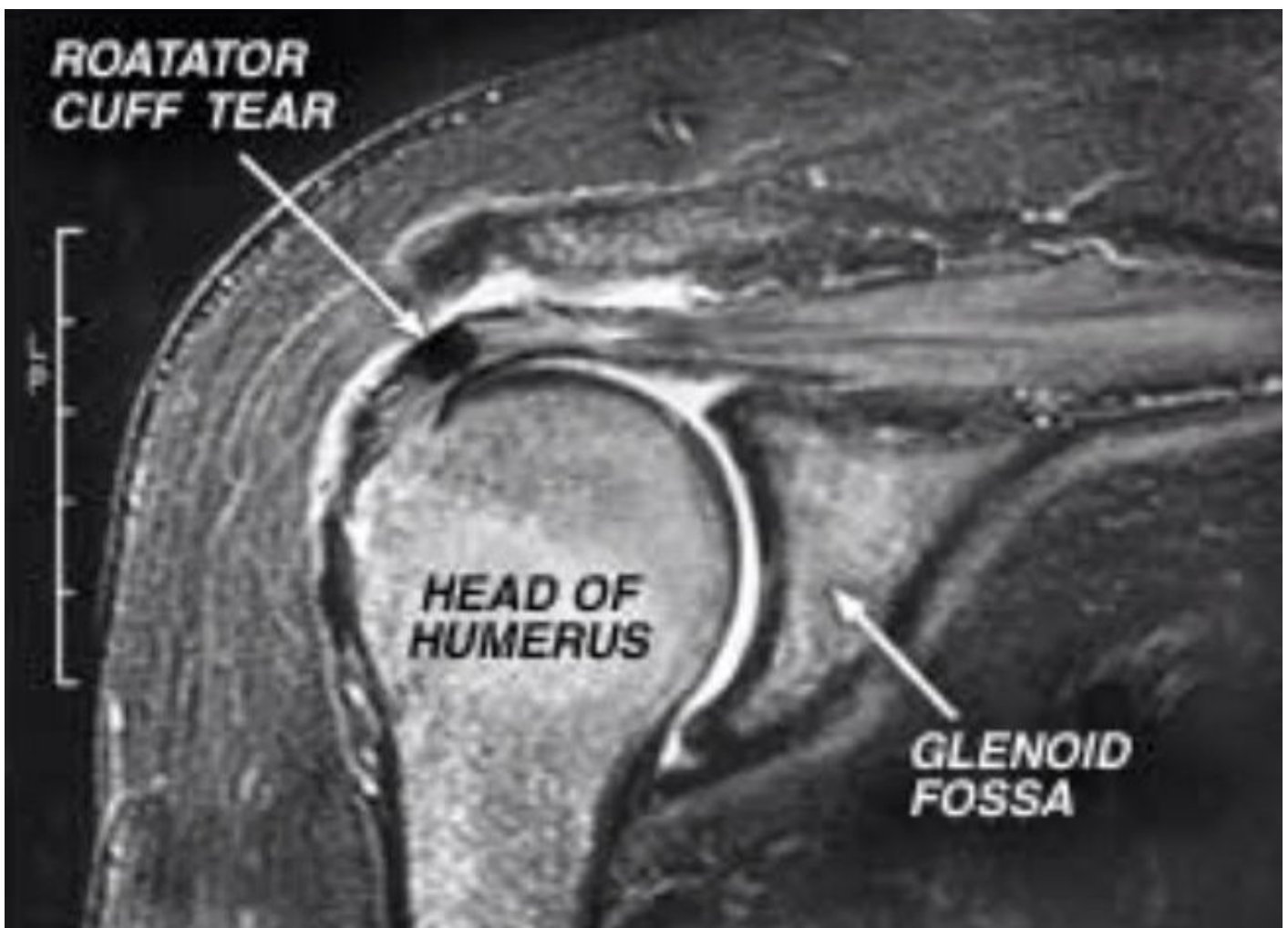
Dual PRP injections helped to **avoid surgery, was beneficial for 2+ years & prevented worsening symptoms** indicative of complete tearing of the rotator cuff.

PRP is **effective for many patients with tendinitis without structural damage**, but less often than for patients with MRI evidence of tendon tearing.

ACCURACY OF DYNAMIC 3D MRI TO DIAGNOSE ROTATOR CUFF TEARS

[Click for Full Text
\(Tempelaere et al.
2016\)](#)

This study evaluated if Dynamic MRI provides novel kinematic data that can be used to improve the understanding, diagnosis and best treatment of rotator cuff diseases.



20 Shoulders underwent Dynamic 3D MRI vs. Standard MRI:

- 4 massive rotator cuff tears
- 5 isolated full-thickness Supraspinatus tears
- 5 tendinopathies
- 6 normal shoulders

Significant Findings:

Change in width of **subacromial space** >4mm differentiated shoulders with **tendon tears & without tears.**

Superior-inferior translation was higher on average in:

Massive cuff tears group (6.4mm) vs. normal shoulders (3.4mm).

Anterior-posterior translation was higher in:

Massive Rotator cuff tears (9.2 mm) and supraspinatus tear (9.3 mm)
vs.

Normal shoulders (3.5mm) and tendinopathy (4.8mm).

MAIN TAKEAWAYS

Dynamic-MRI identified differences between groups of patients with various degrees of cuff tears.

Dynamic-MRI can improve the understanding, diagnosis and best treatment of rotator cuff disease, via a novel measure; 'Looseness.'

Looseness was better able at differentiating rotator cuff disease.

The study showed that anterior-posterior gleno-humeral motion increases with rotator cuff disease and it is suggested that a better understanding of this relationship may help improve treatment for rotator cuff diseases.

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