

# EXERCISE THERAPY IN THE NON-OPERATIVE TREATMENT OF FULL-THICKNESS ROTATOR CUFF TEARS: A SYSTEMATIC REVIEW

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## ABSTRACT

**Background:** Although commonly prescribed, the evidence to support exercises therapy (ET) and conservative management for the treatment of full-thickness rotator cuff tears (FTT) is equivocal.

**Purpose:** The purpose of this systematic review of the literature was to determine the current level of evidence available for ET in the treatment of FTT and to provide a formal Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group of recommendation.

**Methods:** Five databases were systematically searched to evaluate the effectiveness of ET for FTT. Inclusion criteria: experimental or observational studies of adults clinically diagnosed with FTT, or massive, or inoperable tears that contained a treatment group that received ET for FTT. Exclusion criteria included: history of surgical repair, concurrent significant trauma, neurological impairment, and level V studies. Articles were assessed for quality, the level of evidence (I – V) and GRADE of recommendation (A to F) was determined. Data extraction included: demographics, specific interventions, and outcomes.

**Results:** One thousand, five-hundred and sixty-nine unique citations were identified, 35 studies were included: nine randomized controlled studies, six cohort studies, 15 case series and five case reports. There were 2010 shoulders in 1913 subjects with an average age of 64.2 years, 54% males, 73% of tears were >1 cm and 37% were classified as massive. Based on studies that reported, >58% of tears were >1 year and 73% were atraumatic. Of the non-operatively treated cohorts that reported the respective outcomes: 78% improved in pain (9/10 cohorts that reported statistically significant differences [stat-sig]  $p < 0.05$ ), 81% improved in ROM (14/14 cohorts that reported, met stat-sig), 85% improved in strength (7/8 cohorts that reported, met stat-sig), 84% improved in functional outcomes (17/17 cohorts that reported, met stat-sig). Dissatisfied outcomes occurred in 15% of patients, who then transitioned to surgery.

**Conclusion:** The current literature indicates GRADE B recommendation (moderate strength) to support the use of ET in the management of FTT. There is further need for well-designed randomized controlled trials.

**Level of Evidence:** 2a

**Key Words:** Exercise therapy, full-thickness rotator cuff tear, non-operative management

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