

ORIGINAL RESEARCH

EFFECTS OF A DRY-LAND STRENGTHENING PROGRAM
IN COMPETITIVE ADOLESCENT SWIMMERSRobert C. Manske, PT, DPT, MEd, SCS, ATC, CSCS^{1,2}Stephanie Lewis, PT, DPT, ATC³Steve Wolff, PT, DPT⁴Barbara Smith, PhD, PT¹

ABSTRACT

Background: Shoulder pain is common in competitive young swimmers. A relationship between shoulder strength and shoulder soreness in competitive young swimmers may indicate need for strengthening.

Purpose: To determine if a shoulder exercise program will improve shoulder strength and decrease pain in competitive young swimmers.

Study Design: Randomized control

Methods: Participants (10 control, 11 experimental), randomly assigned to a control or experiment group, completed the 12 week program. Strength was measured prior to the study for shoulder flexion, abduction, external rotation, internal rotation, and extension on the dominant arm using handheld dynamometry. The experimental group was then assigned exercises to be performed three times per week. The control group was instructed not to perform the exercises. All participants were re-tested at six and twelve weeks following initiation of the study.

Results: The changes in strength for each muscle group and pain were compared between groups using a mixed design two-way ANOVA. The experimental group significantly increased external rotation strength compared to the control group. Shoulder soreness was not significantly different between groups.

Conclusion: Adolescents who perform shoulder strengthening significantly increased their external rotation strength compared to adolescents who only participated in a regular swimming regimen.

Key words: Competitive swimmer, rotator cuff strength, soreness, adolescent, external rotation. Randomized controlled trial

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