ABSTRACT

Background: Shoulder girdle pain is a common disabling complaint with a high lifetime prevalence. Interventions aimed at decreasing shoulder pain without stressing shoulder girdle structures have the potential to improve participation in multimodal shoulder rehabilitation programs.

Hypothesis/Purpose: The aim of this study was to determine the acute effects of moderate intensity lower extremity exercise on mechanically induced shoulder pain in individuals without shoulder injury. It was hypothesized that participants would exhibit less shoulder pain, as indicated by increased pain thresholds, following lower extremity exercise.

Study Design: Repeated measures study.

Methods: Thirty (30) healthy participants were recruited to participate in this study. Pain pressure algometry was used to mechanically induce shoulder pain over the infraspinatus muscle belly. This was performed on the dominant shoulder before and immediately after performing 10 minutes of moderate intensity lower extremity exercise using a recumbent exercise machine. Heart rate and rate of perceived exertion were measured following exercise. Repeated measures ANOVA was used to compare pain pressure threshold scores between the baseline and post-exercise time points. Significance was set at \( p \leq 0.05 \) a priori. Effect size (ES) was calculated using Glass's Δ.

Results: Moderate intensity lower extremity aerobic exercise led to significantly \( (F=8.471, \, p=0.003) \) decreased evoked shoulder pain in healthy adults with moderate effect sizes (0.30-0.43).

Conclusions: Lower extremity aerobic exercise significantly decreased pain of the infraspinatus in this sample of young healthy participants. Utilization of lower extremity exercise may be of benefit for younger patients to decreased acute shoulder pain.

Level of Evidence: 2b: individual cohort study

Key Words: aerobic exercise, exercise induced hypoalgesia, pressure algometry, shoulder pain