

# Does pectoralis minor stretching provide additional benefit over an exercise program in participants with subacromial pain syndrome? A randomized controlled trial

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**Background:** Adaptive shortening of the pectoralis minor is one of the biomechanical mechanisms associated with subacromial pain syndrome (SPS). **Objective:** To compare the effects of an exercise program alone with an exercise program in combination with pectoralis minor stretching in participants with SPS. **Design:** Randomized controlled trial. **Methods:** Eighty adult participants with SPS were randomly allocated to two groups. The control group (n = 40) received a 12-week specific exercise program and the intervention group (n = 40) received the same program plus stretching exercises of the pectoralis minor muscle. The primary outcome measure was shoulder function assessed by a Constant-Murley questionnaire, and the secondary outcomes were the Disabilities of the Arm, Shoulder, and Hand (DASH) questionnaire, visual analog scale (VAS), and pectoralis minor resting length. **Results:** The present study shows no difference between the two interventions according to the Constant-Murley questionnaire (1.5 points; p = 0.58), VAS at rest (0.2 cm; p = 0.11), VAS at movement (0.5 cm; p = 0.08), and pectoralis minor resting length (0.3 cm; p = 0.06). The DASH questionnaire showed greater functional improvement in the control group (5.4 points; p = 0.02). Finally, only pectoralis minor length index showed difference statistical significant in favor of intervention group (0.3%; p = 0.04). **Conclusion:** In the short-term, the addition of a program of stretching exercises of the pectoralis minor does not provide significant clinical benefit with respect

to functional improvement or pain reduction in participants with SPS. Trial registration: Brazilian registry of clinical trials UTN number U1111-1210-3555. Registered 5 March 2018. © 2019 Elsevier Ltd

Exercise therapy

Muscle stretching exercises

Randomized clinical trial

Subacromial pain syndrome

adult

analgesia

Article

clinical outcome

Constant Murley (score)

controlled study

Disabilities of the Arm, Shoulder and Hand (score)

disease duration

female

human

kinesiotherapy

major clinical study

male

middle aged

muscle length

musculoskeletal function

outcome assessment

parallel design

pectoral muscle

priority journal

program effectiveness

randomized controlled trial

shoulder

shoulder impingement syndrome

single blind procedure

stretching exercise

visual analog scale

Chile

disability

kinesiotherapy

pain measurement

pathophysiology

shoulder pain

Adult

Chile

Disability Evaluation

Exercise Therapy

Female

Humans

Male

Middle Aged

Muscle Stretching Exercises

Pain Measurement

Shoulder Pain

Single-Blind Method