

# The effectiveness of high-intensity laser therapy on pain, range of motion, functional capacity, quality of life, and muscle strength in subacromial impingement syndrome: a 3-month follow-up, double-blinded, randomized, placebo-controlled trial

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## Abstract

The aim of this study was to perform a placebo-controlled assessment of the short- and long-term efficiency of high-intensity laser therapy (HILT) in treatment of subacromial impingement syndrome (SAIS). Sixty-three patients (32 in HILT + exercise and 31 in sham HILT + exercise group) who were diagnosed with SAIS were included. The assessments were performed before (baseline, 0) and after treatment (3rd week/12th week). Active range of motion (ROM) with goniometric measurement, pain with visual analog scale (VAS), shoulder function with Constant-Murley score (CMS), quality of life with *SF-36* (short-form 36) health survey, muscle strength using isokinetic device (including peak torque level measurements at shoulder internal rotation (IR) and external rotation (ER) at 120, 180, and 210 degrees) were assessed. Significant improvements were determined in the assessments at the 3rd and 12th week controls in both HILT and control groups. In the comparison of the values of the groups (3rd/12th week), the HILT group had a statistically significant improvement compared with the placebo group; in the active shoulder flexion, IR, and ER ROM measurements; in VAS scores; in CMS activities of daily living, ROM, strength and total scores; in all the sub-parameters of *SF-36*; and in IR 120,180, 210 and ER 120,180 degree/s peak torque values of isokinetic measurements. In the comparison of both groups, HILT + exercise treatment is more effective in reducing pain and increasing the ROM, functioning, quality of life, and the muscular strength assessed with isokinetic in the short and long term.