HIT THE PAIN AWAY: ACUTE EFFECTS OF HIGH INTENSITY TRAINING ON PAIN PROCESSING AND INFLAMMATION IN CHRONIC LOW BACK PAIN.

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Background and aims: High intensity training improves pain in chronic low back pain (CLBP)[1] but underlying mechanisms for this effect are unknown. Exercise induced hypoalgesia (EIH) has been associated with long-term exercise programs[1] and it might be influenced by psychological factors and inflammation[2,3]. This exploratory study aims to 1) evaluate differences in EIH after either high intensity interval training (HIIT) or moderate intensity continuous training (MICT), and 2) investigate effects of psychological factors and inflammatory biomarkers on EIH, in CLBP.

Methods: Twenty persons with CLBP will participate in a cross-sectional assessment of two cardiorespiratory exercise protocols (i.e. HIIT and MICT) with a randomized cross-over design (Figure 1). EIH is assessed using cuff algometry pain detection thresholds (cPDTs) before (PRE) and directly after (POST) exercise. Questionnaires related to depression-anxiety-stress, fear-avoidance behaviour, and sleep quality are inventoried and venous blood samples are taken.

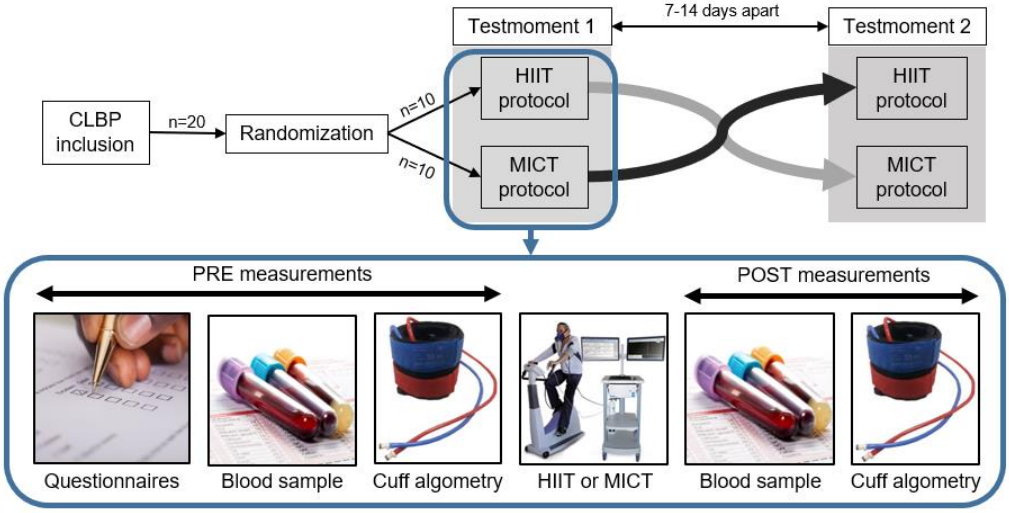

Figure 1: Protocol methodology.

Results: This study is ongoing. Currently, 10 persons (6 females, age=45.0y) have been evaluated. cPDTs did not increase after the protocols, which indicates EIH impairment. POST cPDTs were not different between the protocols. Moderate correlations were found between cPDTs and patient reported outcomes, However, these were all non-significant. Inflammatory markers have not been evaluated yet.

Conclusion: This preliminary sample reports impaired EIH in patients with CLBP. Higher power is needed to correctly evaluate if psychological factors are associated with (impaired) EIH response. Additional participants and analyses of correlations between PRE-POST cPDTs and psychological factors and inflammation are planned.

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