Background and aims: High-intensity training (HIT) is more effective than moderate-intensity training (MIT) in improving biopsychosocial outcomes for persons with chronic nonspecific low back pain (CNSLBP). However, the underlying mechanisms for these effects are still unknown. Therefore, this study aims to explore the underlying mechanisms by comparing the effects of HIT and MIT on inspiratory muscle (IM) function, as impaired diaphragm function has been associated with CNSLBP.
Methods: Sixty-four participants with CNSLBP will be randomly assigned to either HIT or MIT. Both groups undergo a 12-week exercise program consisting of two 1.5-h sessions per week. Training sessions consist of multimodal physical training, including cardiorespiratory, general resistance, and core strength training, with the only difference between HIT and MIT being the exercise intensity. Primary outcomes are IM strength, IM endurance, and exercise-induced IM fatigue. All outcomes will be measured at baseline and after completing the 12-week exercise program.
Results: 40 participants have completed the program so far (HIT: $n=20$, MIT: $n=20$). Preliminary data indicate that IM strength increased by 9% and IM endurance improved by 28%, while exercise-induced IM fatigue increased by 1% in the HIT group. In the MIT group, MIP increased by 8%, IM endurance improved by 15%, and exercise-induced IM fatigue increased by 3%.
Conclusions: Preliminary results suggest that HIT may be more effective in improving IM endurance, while both HIT and MIT had similar positive effects on IM strength. A more detailed statistical analysis will be conducted upon the study's completion.

III-D.71 | Effect of multimodal high-intensity training compared to moderate-intensity training on inspiratory muscle function in persons with chronic nonspecific low back pain: Preliminary results

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