

Aqua exercise does not affect recovery of performance, damage markers, the immune-status and the sensation of pain after muscle-damaging exercise

Forschung - Begutachtung › Abstract in Konferenzband

Übersicht

Formate

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Details

Introduction Aqua exercise might be an effective method of recovery from muscle damaging exercise. The water resistance might induce mild massaging effects and hydrostatic pressure, and the exercise itself might increase muscle blood flow without inducing further eccentric actions, all reducing the oedema and inflammation. Therefore, the aim of the present study was to investigate the effects of passive recovery vs. aqua cycling on isometric and dynamic strength, markers of muscle damage, the immune status, muscle soreness and the perceived physical state (PEPS) after muscle damaging

exercise. Methods 20 male subjects (age: 24.4 +/- 2.2, weight: 81.6 +/- 7.6 kg) completed 300 maximal-effort counter movement jumps (CMJ) (one jump every 8 sec.). Afterwards, they were randomly assigned to either a passive recovery group (P) or an aqua-bike (AB) group, which performed 30 min cycling in a pool. Before, directly after the 300 CMJ, directly after the recovery session and up to 72 h post, isometric and dynamic strength of leg extensor muscles, creatine kinase (CK), lactate dehydrogenase (LDH), and the immune status were measured. Furthermore, questionnaires on muscle soreness (visual analog scale (VAS)) and PEPS were completed. Results Maximal isometric and dynamic strength showed significant decreases in both groups of up to -20%. Number of repetitions at 30% of maximal isometric strength even decreased up to -35%, but showed faster recovery than maximal performance. However, no significant differences were found between both groups in all measures of performance. Each of the four dimensions of the PEPS (health, flexibility, fitness, energy) and the VAS showed significant changes over time, however, no differences were found between groups. CK and LDH significantly increased over time and both parameters increased higher in the AB-group (CK: AB: +1325% vs. P: +864%; LDH: AB: +157% vs. P: +131%), but again no significant differences were found between AB and P. Also, measures of the immune status showed significant effects over time, but no significant differences between both groups. Discussion The results of the present study showed, that a single 30min session of aqua exercise after 300 CMJ did not affect the recovery of muscle power, muscle soreness, the persons perceived physical state, markers of muscle damage and the immune status compared to passive rest. These results are in contrast to previous studies investigating the effects of aqua exercise on recovery (Takahashi et al. J Sport Sci. 2006), although aqua exercise was repeated on consecutive days in this study. Therefore it might be concluded, that this kind of recovery intervention needs to be repeated more frequently to generate effects. Contact: C. Wahl@dsHS-koeln.de

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