

## **Abstract**

- Title:** Effect of water temperature during cold water immersion on repeated isometric performance
- Objectives:** The aim of the study was to evaluate the effect of water temperature on recovery using repeated isometric performance of finger flexors to exhaustion
- Methods:** The study was attended by a group of climbers consisting of 16 men (aged  $30.8 \pm 7.2$  years) and 18 women (aged  $26.7 \pm 4.5$  years). Participants came 3 times in the laboratory, where repeated intermittent isometric performance until exhaustion with different recovery strategy (passive recovery, immersion of forearm to  $8^{\circ}$  C water – CWI 8, immersion of forearm to  $15^{\circ}$  C water – CWI 15) were completed
- Results:** The results were evaluated according time of contraction and force-time-integral (FTI). After passive recovery, the second time of contraction dropped by  $\downarrow 9\%$  and the third contraction by  $20\%$  compared to the first one. In response to cold water (CWI), after CWI 8 second time of contraction increased by  $\uparrow 32\%$  and CWI 15 by  $\uparrow 36\%$  compared to the first one. The third time of contraction was worse for CWI 8 by  $\downarrow 4\%$ , and CWI 15 was better by  $\uparrow 26\%$  compared to the first contraction.
- Conclusion:** Cold water immersion is an effective recovery method between intermittent isometric performance compared to passive recovery strategy. CWI 15 is more efficient during three performance repetitions than CWI 8.
- Keywords:** fatigue, local recovery, cold water immersion, intermittent performance