

## **Abstract**

**Title:** Cold in combat sports with a focus on Muay Thai

**Objectives:** Based on a review of the scientific literature, determine the effect of cold on markers of muscle damage (CK and LDH) and physical performance, in combat sports training, with a focus on Thai boxing.

**Methods:** The presented study is processed in the form of systematic research. Scientific databases Scopus, PubMed, SportDISCUS and Web of Science were used to search for studies. Using appropriately chosen keywords, a search script was created that retrieved a total of 61 studies. Subsequently, an analysis of the studies searched by the script and their selection using the established criteria was carried out. A total of 9 studies were selected, which were used to fulfill the objective of the study.

**Results:** The results of the influence of a cold environment on the level of CK in the blood have not been clearly determined. More clear results were obtained by comparing the values of the LDH level in the blood, presented by selected studies. In most studies, there was a reduction in LDH blood levels after the intervention and none of them had negative effects. A decrease in performance was found immediately after the intervention, with a recovery to baseline values after 24 h. Greater consistency in the performance of the CWI group than the control group was also recorded. We can use the cold as a means of quick recovery between individual matches, or in long-term training/camps in the preparation of athletes for matches, where it will ensure consistent performance despite the previous load.

**Keywords:** cold, combat sports, muay thai, regeneration