

Abstract

The purpose of this study is to determine the effect of short-time cold pack cryotherapy in thermoreceptors, therefore, proprioception via deep sensation receptors and sense of balance on ankle joint in healthy adults. In the subject, I refer to other studies using the word proprioception when measuring the cold effect in the balance of the ankle joint. Mainly, cold therapy is affecting to the thermoreceptors but there might be input also to change neuromuscular transmission. The aim of the experimental process is to identify if the cold application on the ankle joint for 20 minutes is decreasing dynamic postural stability and the sense of balance in laboratory environment. Short term cryotherapy effect is measured within 12 participants divided into two groups: control and study group. Both groups went through the first measurement, 20 minutes rest with or without cold application and second measurement directly after the rest period. The dynamic posturography machine SMART Balance Master System (NeuroCom) was used to evaluate somatosensory outcome in the experiment. In the systematic review the previous studies are investigated within same settings as on experimental process, short time cold application on ankle joint measuring the effect on ankle proprioception and joint position sense. The results in both experimental as well in systematic review are corresponding, short time cold application on ankle joint is not significantly affecting the ankle proprioception and balance. However, warm up after cold application is recommended before continuing the sport activity.