

## Abstract

**Title:** Algometric analysis of influence of crimp grip on soft tissues of hand and forearm.

**Objectives:** The main aim of this thesis is comparison and evaluation of changes of nociceptors sensitivity treshold in chosen points of upper extremities area before and after defined strain using pressure algometer.

**Methods:** Data for the experiment was obtained using pressure algometr. Pain threshold was measured in defined 42 points in the order given at each subject firstly before strain and again immediately after defined strain of upper extremities (one minute hangig by the both hands in crimp grip on a campus board in this way: 10 sec strain plus 10 sec break, all six times). Then were measured values statistically analysed. Sources for processing of theoretical part of this work were obtained from expert articles and literature which follow up the given task.

**Results:** Statistically important results show, that decreasing of pain threshold (on average by 100 - 160 kPa) comes about in tissues of upper extremity immediately after its loading in crimp grip, which means increasing of nociceptors sensitivity. At the same time it has been proved that nociceptors sensitivity in the area of tendon pulleys correlates with frequency of their injury quoted in a literature (that is the highest sensitivity in the tendon pulleys area A2, lower in the pulley area A3 and the lowest in the pulley area A4). Within scope of this experiment it has been also proved average lower pain threshold on left upper extremity against right one and lower pain threshold of women against men.

**Keywords:** algometry, crimp grip, overuse, physiotherapy, tendon pulley, pressure pain threshold