

## ABSTRACT

### **Title:**

Effect of cognitive fatigue on present physical human performance.

### **Goal:**

The goal of this thesis is to investigate the effect size of previous cognitive load on shooting accuracy and subsequent aerobic performance in observed group of army members.

### **Method:**

An intervention randomized single blind crossover study was conducted on 17 males. The measurements were conducted between November and December 2018 and in March 2019. After initial phase, each volunteer underwent two phases of the experiment in a random order. Psychological and physiological parameters were recorded, especially using standardized questionnaires, performance outcomes (heart rate, time to exhaustion during walking phase, shooting accuracy) and salivary cortisol levels.

### **Results:**

Induced cognitive fatigue affects the psychophysiological state of human organism and its performance. Pearson's correlation values did not show linkage amongst psychic resistance, motivation to performance and cognitively demanding activity.

Results showed the statistical significance of induced cognitive fatigue effect on shooting accuracy ( $p = 0,003$ ). Also, a shift in the present mood was demonstrated in dimensions Fatigue  $p = 0,002$  and Vitality  $p = 0,048$  respectively. The shifts were caused by the previous aerobic load. The effect of induced cognitive fatigue on subjectively rated exertion was not demonstrated.

Statistical significance ( $p = 0,000$ ) was demonstrated in effect Repetition in salivary cortisol levels, which responded to aerobic load. The human aerobic performance was not influenced by previous cognitive fatigue.

### **Key words:**

cognitive load, aerobic performance, mental resistance, motivation to performance, subjectively perceived load, salivary cortisol.