

Abstract

Name of the work: The alcohol influence on the rate of muscle contraction in the muscles of the thigh area

Objective of the thesis:

1. The aim of the work was to determine the influence of an alcohol on contractile properties of muscles of m. Rectus femoris and m. Vastus lateralis in men and women.
2. Comparison of properties of postural and phasic muscles.

Method:

This is an empirical - theoretical work in which the research has the character of a quasi-experiment of a group of 22 probands of different genders with an experimental way of obtaining data. The experiment was applied on students that attend UK FTVS daily. The age of students ranged from 21 to 25 years. All students had to have a valid medical check-up and passed through a CAGE questionnaire that identifies alcohol addiction. The measurement was performed with the TMG 100, which serves to measure the contractile properties of the muscles. The muscles m.rectus femoris as representatives of postural muscles and m.vastus lateralis as representatives of phasic muscles, were chosen as examples. The research consisted of 4 rounds, where the first round was alcohol-free and the other three were with alcohol. Each round contained a dose of 0.3 grams of alcohol per kilogram of weight. For women this formula was modified. All results were subjected to normality tests.

Results:

Tc m. Rectus femoris in males has a statistical significance of 0-0.3 per mille of alcohol. There was a shift from 28.4 (4.6) to 27.1 (4.9) ms. The normality test was performed on the basis of the Friedman test for repeated measurements with Bonfreroi post-hoc analysis. All other measurements were verified using the ANOVA normality test. For other measurements, no statistical significance was demonstrated in males, ie Dm m. Rectus femoris, Tc and Dm m. Vastus lateralis.

In the case of women, Tc m. Vastus lateralis was statistically significant between 0-0.6 vol. Alcohol and 0-0.9 percent alcohol. In both cases, there was a statistically significant decrease. Prior to ingestion, the baseline was 22.5 (3.2) ms. The decrease in the third measurement was recorded at 23.4 (2.9) ms. The next drop was up to 23.8 (2.8) ms. No statistical significance was found in other measurements in women. These were Dm m. Vastus lateralis, Tc and Dm m. Rectus femoris measurements.

Keywords:

Alcohol, skeletal muscle, sex, tensiomyography, sport