**THE ELECTROMYOGRAPHIC INDICES OF DIFFERENT GENDER AND AGE GROUPS OF ATHLETES, SPECIALIZING IN BIATHLON**

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One of the actual problems of contemporary sports is the extension of the performing period of highly skilled athletes. It is obvious to take the age and gender differences of athletes into account whilst planning the training process. The aim of our work was to assess the functional state of the neuromuscular apparatus of different gender and age groups of athletes performing in biathlon.

Forty six qualified athletes (Masters of Sports and Masters of Sports of International Class), specializing in biathlon, 16-30 years of age, took part in this electromyographic (EMG) study. The method of H-reflex of soleus muscle was used. Registration of EMG-signals and tibial nerve stimulation were performed using neurodiagnostic complex (Nicolet Viking Select, USA-Germany).

Some abnormalities were found in EMG-parameters in 26% of all tested athletes, namely increase of thresholds of H-responses, decrease in the maximal amplitude of the H-response and maximal amplitudes ratios of H-and M-responses. Bilateral disorders were observed only in adult group (2% in men and 2% women), whereas unilateral disorders were observed both in group of young athletes (7% in men and 2% in women) and in adult group (4% in men and 9% in women). It was suggested that these EMG-parameters changes were caused by compression and ischemia of the afferent part of the spinal nerves that could accompany muscle blockade syndrome of intervertebral discs L4-S3.

It was found that quarter of tested athletes, performing in biathlon, had deviations in the EMG-parameters from the established standard that could serve as diagnostic sign of muscle blockade syndrome of intervertebral discs L4-S3, caused by inadequate exercise stress of the lumbar spine. Number of functional disorders in the neuromuscular system of athletes increased with age, especially in women.