

## **Abstract**

- Title:** Comparative analysis of muscle activity in selected calf muscles during running in military boots and running shoes
- Objectives:** The aim of the thesis is to compare the muscle activity of selected calf muscles during running in military boots and running shoes.
- Methods:** Six subjects participated in the measurement, all of whom were members of special forces. Using surface electromyography, the muscle activity of three selected muscles (medial head of the gastrocnemius, tibialis anterior, and peroneus longus) was measured. The muscle activity was measured while running in military boots and running shoes on an athletic track. The basic results were calculated in the MegaWin program and then transferred to MS Excel.
- Results:** The obtained results reveal that muscle activity in the medial head of the gastrocnemius and the tibialis anterior is higher when running in military boots compared to running shoes. For the peroneus longus, there was no statistically significant difference in muscle activity between running in military boots and running shoes.
- Conclusion:** The muscle activity of selected calf muscles during running in military boots and running shoes differs for specific muscles. Due to the higher weight and rigidity of military boots, there is greater muscle activity in the medial head of the gastrocnemius muscle (m. gastrocnemius caput medialis) and the anterior tibial muscle (m. tibialis anterior). On the other hand, the rigidity of military boots contributes to ankle stabilization and reduces the muscle activity of the peroneus longus muscle (m. peroneus longus).
- Keywords:** M. gastrocnemius caput medialis, m. tibialis anterior, m. peroneus longus, EMG, army, police