This work is trying to identify possible non-stimulatory effects and distant effects of muscle electrostimulation musculus quadriceps femoris based on a literature search. Furthermore evaluates the influence of High Tone Electrical Stimulation (HTEMS) muscles of lower limbs on the activity of the autonomic nervous system, expressed by heart rate variability, a spectral power in the individual frequency bands. Randomized crossover study involved 15 healthy subjects (7 men and 8 women), average age 24.4 ± 2.5 years. Heart rate variability was evaluated in two situations: the situation without the application HTEMS and the situation with the application of HTEMS. Electrostimulation was done with HITOP 191. The results did not show statistically significant differences in all monitored components. The study also dealt with the reproducibility of measurements of perception and motor threshold for HTEMS.