

## **Abstract**

### **Title:**

Differences in postural activity during quiet standing when breathing abdominally.

### **Aim and purpose:**

Aim of this study was to examine the effects of abdominal breathing on selected muscles and stability during quiet standing to find empirical evidence if it can reduce the strain and change the activity pattern, which erect standing demands from the muscles.

### **Methods and materials:**

This thesis begins with an introduction to theoretical part in which we gathered all the already existing and written information needed to form the knowledge base for our experiment. Continuing in 9<sup>th</sup> chapter, methodology and experiment procedure are described where we measured muscle activity using surface EMG and to monitor changes in stability we used force-plate for posturography where only linear parameters were acquired. Both devices were used simultaneously while the subject was in quiet stance for a period of 90 seconds.

### **Results:**

Results shown decrease in most of the muscles, with a higher increase in body sway in medio-lateral than in antero-posterior direction. Signal didn't change to a more distinct wave-like pattern of rhythmic oscillations, as we had thought it would.

### **Keywords:**

Posture, quiet standing, abdominal breathing, diaphragm, system interrelation, EMG, posturography