

# **Abstract**

## **Title:**

Evaluation of EMG Activity of the Shoulder Girdle Muscles during Exercises with Thera-Band in Aquatic Environment and on Land.

## **Objective:**

The main goal of this thesis is to determine a degree of muscle activity of upper trapezius muscle and other selected muscles in the aquatic environment and on land and to compare the values. Furthermore, to determine whether the upper trapezius muscle activates in the aquatic environment later than on land, compared to other selected muscles.

## **Methods:**

This is the case of study, where the degree of muscle activity and the onset of activation of the upper trapezius muscle and other selected muscle is analyzed and then evaluated during shoulder abduction in two different environments using elastic resistance strength (yellow Thera-Band). As an objectification method surface electromyography had been chosen. To ensure the same set of initial conditions the abduction was performed in sitting position. The same chair was used in water and on land. Four female participants part in the experiment.

## **Findings:**

The degree of muscle activity of upper trapezius muscle in the aquatic environment significantly decreased. It wasn't confirmed, that the upper trapezius muscle has been activated later in water than on land. Timing of selected muscles in aquatic environment is individual.

## **Keywords:**

Upper Trapezius Muscle, Surface Electromyography, Underwater EMG, Water Environment