**ABSTRACT**

The aim of this bachelor thesis was describing the importance of the torso/core system function in the crawl swimming stroke.

The theoretical part is divided into two topics. The first topic deals with the crawl swimming stroke, where the correct model technique and subsequently the most common mistakes are described. Regarding the model technique the correct position of the head and body, the movements of the upper and lower limbs, the correct breathing and complete movement coordination are described in detail. The second topic deals with the core system in general and clarifies the meaning of this system. The muscles of the core system and their functions are described in detail as well. The connection of breathing with the core system is mentioned as well as the muscle imbalances and the subsequent vertebral algic syndrome. The methods of examination and the connection of the torso/core system with the swimming locomotion were further described.

The practical part deals with the tracking of an actual person swimming crawl stroke on a 800m distance. The monitored person underwent an examination of the core system strength and subsequently, after the warmup 200 m swim, was filmed using a GoPro camera on the mentioned 800m distance. The video with all mistakes was further analysed regarding to the pre-examined core system strength.

For this kind of bachelor thesis were used methods of testing, observation, scaling and statistical analysis of the obtained data.

**KEYWORDS**

swimming, crawl stroke, core system, muscle imbalances