# ABSTRACT

Modern society gives humanity many guarantees and many benefits. Although one of the biggest problems nowadays is that most of us spend much time sitting at computers or TVs. Another problem is the excess of an unsuitable diet, which threatens our health. This lifestyle harms our health and contributes to the outbreak of diseases in civilization, among other things. These diseases are the leading cause of death in civilized countries. It is no wonder that some parts of society are already aware of this issue, and its goal is to motivate people to spend their free time actively, for example, with regular exercise or sports. It is necessary to emphasize the relationship between health problems and a sedentary lifestyle by integrating such topics into teaching grammar school subjects. We could combine chemistry, biology and physical education with helping students find new ways to understand the importance of physical activity.

The work focuses on skeletal and smooth muscle because it is closely related to movement and is also the subject of teaching in secondary schools. However, in the current teaching materials, this topic is conceived rather descriptively, with students learning many medical terms, and the interpretation of the mechanism of muscle activity is limited to skeletal muscles.

This bachelor thesis was written to support the teaching of this difficult subject in high schools. It analyzes selected high school textbooks of chemistry and biology and some final theses dealing with similar topics and other Internet resources to map the current state of available materials and information dealing with this issue at the high school level. Based on the analysis results, I prepared didactic materials focused on the issue of skeletal muscle and smooth muscle. New materials present the muscle function from the point of view of biochemistry and aim to supplement textbooks so that students can master this important subject.

**KEYWORDS:** biochemistry, muscle activity, muscle relaxation, actin, myosin, striated skeletal muscles, smooth muscle, teaching text, didactic materials