

## **Abstract**

**Title:** The CVS method as a diagnostic of the cardiovascular system

**Objective:** The aim of this thesis is to introduce the CVS (cardiovascular system) method as a potential diagnostic method to detect the overloading of the heart muscle, and thereby increased susceptibility to subsequent myocardial infarction and hypertension.

**Method:** This thesis presents a data analysis on different groups of people, which were provided to us during the development of the CVS method. These were several groups of healthy individuals (athletes) and three groups of patients suffering from problems with the cardiovascular system (colaps conditions, obesity and hypertension). The groups were measured for their values of the heart rate and blood pressure at rest and during exercise on a bicycle ergometer. Subsequently the energy required to pump blood to the heart muscle and climbing speed pulse pressure depending on the heart rate was evaluated.

**Results:** The CVS method shows differences in the energy consumption of the heart muscle in various groups of people. The results showed that at the same level of exercise the load of the heart muscle is higher by patients than by athletes. Considering the samples that we had available, the CVS method proved its diagnostic value when evaluating the overall effectiveness of the cardiovascular system.

**Keywords:**hypertension, diagnosis of cardiovascular system, heart overloading, energy consumption of heart, pulse pressure during exercise, CVS method