The number of people suffering from metabolic syndrome in Poland and around the world is growing dramatically every year. The basic recommendation for both sick and healthy people is to increase physical activity and reduce the amount of food consumed. Both these recommendations are often followed for a short period of time after which most people return to their old habits. Studies of recent years prove that one of the important causes of metabolic disorders in people is a disturbed daily cycle, which is significantly influenced by the time of eating. It has been shown that more than 50% of the examined persons consumed food for 15 hours and more during the day. Limiting food consumption to 8-10 hours, without the need to reduce food intake, the so-called time-restricted eating (TRE), resulted in a significant improvement in metabolism, decrease in body weight and cholesterol concentration, increase in insulin sensitivity and many others. A period of hunger is necessary for the body to regenerate cell structures and allows for the separation of opposing metabolic processes. This means that the period of hunger is necessary and its limitation by e.g. snacking can seriously disturb this series of processes in the human body. The results of our preliminary research indicate that TRE increases the vitality of the examined persons and their desire for doing exercise. So far, there are no studies on older people, where the intervention would consist in the use of TRE and endurance training such as Nordic walking (NW). In this project we aim to demonstrate the synergistic effect of TRE and NW training on health indicators for older women. The women will be divided into four groups, i.e. Control group (CG); time-restricted eating group **(**TRG) which will follow 12 weeks of TRE protocol; Nordic walking training group (NWT) which will follow 12 weeks of supervised Nordic walking training and Nordic walking training combined with a time-restricted eating group (NW-TRG). In addition, we will try to prove to young men that TRE will improve their adaptation to endurance training and improve their metabolism. The study will be divided into two groups: 1. a group undergoing endurance training and 2. a group combining endurance training with TRE. In all subject's changes in the metabolism of iron, tryptophan, vitamin D and lipids will be evaluated. Endocrine function of skeletal muscles, mental state and cognitive abilities of the subjects will also be examined. We expect that the applied procedure of temporary restriction of food intake will be easy to apply and continue for much longer than the study period. In order to maintain this time window, test subjects will be asked to delay their breakfast and early dinner intake. In addition, we expect that the improvement in wellbeing, vitality and a significant improvement in performance and biochemical indicators of health, especially in the NWT plus TRE group, will allow us to better understand the physiology of exercise, which may result in future specific health recommendations for people of different ages.