Summary

This dissertation deals with physical activity of senior women and its importance in health prevention. Current knowledge in the areas of gerontology, exercise physiology and kinanthropology was summarized in the theoretical part. For experimental part of the work, questionnaires were compiled and group and individual exercise programs were created and applied on a set of senior women. The objective of the dissertation was to assess the influence of these programs on civilization diseases risk factors and on some indicators of quality of life.

Our study population was formed by healthy senior women recruited from the programs of senior university education in Hradec Králové. The study population was further divided into an experimental group which completed a group exercise program (G1; 18 subjects, 63±3 yrs), an experimental group which completed an individual exercise program according to our instructions (G2; 14 subjects, 65±5 yrs) and a control group without an exercise program (G3; 19 subjects, 69±4 yrs). Exercise programs were applied for 10 months, 2 hours/week and contained remedial exercises, strengthening activities, balance and relaxation exercises and walking. The variables examined included body weight (BW), body mass index (BMI), blood pressure (BP), resting heart rate, total cholesterol, HDL-cholesterol, index of aterogenity (AI), glycemia and selected indicators of quality of life. A questionnaire and medical examination were used for data collection.

After a 10-month intervention there were significant reductions of BW ($p<0.05$) and BMI ($p<0.05$) in G1 and G2, an increase of HDL cholesterol ($p<0.05$) in G1 and a decrease of AI ($p<0.05$) in G2 compared to data pre-intervention. There was an improvement in self-reported health status ($p<0.05$) and increased participation in social life ($p<0.05$) in G1 after the intervention. Significant increments of feelings of wellbeing ($p<0.05$) and of personal responsibility for one's own health ($p<0,001$) were found in G1 and G2. More positive changes (including those statistically insignificant) were found in G1 compared to G2. There were reductions ($p<0.05$) of total cholesterol and AI and an increase ($p<0.05$) in HDL cholesterol in G3. No other changes were found in the control group.

The examined exercise programs reduced levels of some civilization diseases risk factors and positively influenced indicators of quality of life in exercise groups vs. control group. The group program was more effective than the individual program. It appears that low-volume low-intensity exercise programs can play a positive role in health prevention and quality of life of seniors.