

Thesis topic "The metabolism of iron and insulin resistance" gives an overview of the current problem of the metabolic syndrome and insulin resistance as a major component of the syndrome X. There is mentioned classification criteria for the MS, including the most recent in 2005 by IDF (International Diabetes Federation). The paper examines the mechanism of action of insulin at the cellular level, with an emphasis on „locus minorit resistentiae“ in postreceptor signaling cascade of insulin in relation to the emergence of insulin resistance. Conclusion The first chapter is devoted to one of the most complex methods of prevention of insulin resistance - physical activity, the expression of molecular mechanisms affecting the IR due to exercise. The second chapter we give to the problems of iron metabolism. Particular attention is paid to the absorption of iron and regulate its metabolism, which is very much applied fairly recently discovered peptide hepcidin. Conclusion Chapter preventive recommendations are due to adverse effects of excessive stocks of iron in the body in terms of insulin sensitivity. There is mentioned also the findings of several studies exploring the relationship of metabolic syndrome and its major components, including insulin resistance with regard to the amount of iron stored and circulating in the body.