

ABSTRACT

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Title of Diploma thesis: Exercise as Medicine: Growth Hormone Response to High-intensity Interval Training

The present research focused on growth hormone response to exercise is part of a wider project related to the beneficial effect of high-intensity interval training and therefore is related to the topic of “exercise as medicine”. We hypothesized that as shown by Booth *et al*, in several systems of our organism (such as the cardiovascular system, skeletal system etc.) our genome is maladapted, because of our reduced physical activity compared to our ancestors. Therefore, also the growth hormone response (GH) to exercise is decreased. Several mechanisms, such as increased lactate concentration in blood, increased hydrogen ion concentration in the blood, afferent signals from muscle metabolic receptors etc., have been proposed as stimuli for the GH response to exercise. The aim of the present research is the study of a possible metabolic stimulus of a relative muscular hypoxia, which is the ratio between energy demand and oxygen availability, as the main regulator of the growth hormone production.