

Short Communication

Teaching the Proper Exercise Loads-The Consequence of Excessive Exercise

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An excessive physical exercise destructively influences on humans. This question has now a not overpriced meaning because there are more and more popular extreme kinds of tourism, recreation and sport, and far shifting limits of results attained in elite sport, and there are wider range of time and loads of professional work, which can lead even to work holism. If compare human body organization to not oversized device or building construction, one has to say that human body is in the same way subjected to stress, it means energy expenditure. A subjection to permanent stress without a full recovery can cause an abiding change of a metabolism regulation level. It means strain of this regulation. It is a shift within a genetically programmed range of homeostasis and a change of biological requirements of human body subordinated to maintenance a relative and very labile metabolic balance. However, it is not free. Each physical exercise is a download of an energetic credit from human body energetic substrates. If this credit is too high, it can cause a dysfunction of some functional spheres of a human being and can turn into an overtraining status. Usually, it manifests in suppression of the most energy-consuming function, it means reproductive function. It occurs in both genders. Then, this question is very complicated from the psychic sphere of human being, too. All situations associated with energy expenditure by humans are considered as catabolic conditions. For example: mental work, physical work, digestion, disease, emotion (both positive and negative). They have, of course, their anabolic counterparts as, responsively, sleep, resting, absorption of nutritive elements, convalescence and relaxation. It gives as a result a labile balance of metabolic processes in humans.

This phenomenon is known under the idea of homeostasis which determines a range of possible adaptation of organism to actual environmental conditions as ambient temperature, level of nutrition and an intensity of physical effort, physical activity. It is also known that homeostasis is far more stable in women than in men. It means men are more trainable – adaptive, eco-sensitive-than women. It is a result of a reproductive function of each human gender. Stable internal metabolic conditions of female organism guarantees a proper internal environment to create a new life. And also a range of homeostasis is narrower for older people. It means their adaptation

to environmental conditions is weaker and occurs through a worse organism's tolerance.

The apogee of human homeostasis stability in each gender is round the age of forty. So, it is understandable why astronauts, cosmonauts and ticonauts are flying into the space at this age.

The very disadvantageous influence of open space, without gravity, can cause less damage at this age than in other periods of human life. These damages are easy comparable on earth to the results of bed rest, from one side, or from the other-to an excessive physical load, associated sometimes with emotional stress, and they are very often not possible to compensate. Then, the recovery of organism to its previous function is sometimes not possible.

Physical exercise under conditions of excessive physical load may cause many disadvantageous somatic and metabolic changes. These changes are multifactor. To enumerate a majority of them there are as follows: oxidative stress, risk of cardiovascular disease, cardiac injury, overtraining and decrease of hormone levels, then deterioration of metabolic regulation and integration of organism, infringement of immune system, deterioration of cell membranes, and even a syndrome of anorexia athletica.

Considering an influence of extreme loads on humans one has to notice that today limitations and threats of excessive physical exercises are known. This problem seems to be very interesting now when people are conscious in undertaken of risk forms of physical activity. Even if submit a hypothesis that there are not differences between genders in relationships to the development of maximum force and also find that women are more resistant to the fatigue in endurance exercise it is worth to mention that females are stronger gender. It is connected also with the psychic sphere of organism's function. The excessive exercise any how plays a destructive role in body structure, function and psychics from the point of understanding a supercompensation phenomenon, too. The whole proceeds mainly by impossibility to realize the entire, complex recovery.

Each exercise is a stress for organism-throughout energy expenditure-the recovery means reconstruction of this lack of energy and achievement of a metabolic balance-homeostasis.

Homeostasis means health. Noncompliance of a normal, healthful lifestyle, incomprehension of principles of this way of life causes an excessive exploitation of organism's biological structures. If this process lasts many years it means a degradation of body, its function and psychics. During an explosive development of technology it is necessary to understand limitations of humans.

Application of Physical Exercise Loads in Relations to Gender and Chronological Age

To the following groups of persons it is not allowed to use maximal and supermaximal (from the physiological point of view)

exercises: sick persons, convalescents, children and youth (12-18 y.o.), older persons (after menopause and andropause-after the end of reproductive function), pregnant women, and women at all. In children and youth there is a gap of blood vessels development-after

puberty it lasts over two years. Woman always during the reproductive period can be pregnant, even if she is not conscious of it. And, if she is older, she is in a protected group.