



COMMUNICATION ARTICLE

What Factors Can Increase the Metabolic Effects of Regular Practice of Physical Exercises in Obesity?

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Physical exercise has been used as an important tool in the prevention and treatment of obesity by developing physical qualities that positively alter body composition, metabolic activity and by attenuating the comorbidities associated with excess weight. An inverse association has been demonstrated between physical activity level and development of obesity [1].

The etiology of obesity seems to be related to a number of factors, such as genetic polymorphisms, hormonal signaling dysfunction, systemic inflammation, increased intestinal absorptive capacity, among other. The regular physical exercise promotes physiological adaptations that enhance the metabolic functioning of the human body and increase the use of energy substrates and improve the molecular function of energy systems [2].

Physical exercise improves the functioning of energetic systems, increasing metabolic efficiency, which reduces the progression of the pathological effects of obesity. The recurrent practice promotes the improvement of hormone responsiveness both central as peripheral, enzymatic activity, vasodilatory capacity, myocardial perfusion, cardiac contractility, regulating appetite, satiety and hunger, release of anti-inflammatory adipokines and also myokines, body composition (increased muscle mass and reduced fat mass), adrenergic activity and lipolysis, mitochondrial density, cellular oxidative capacity, and many other factors [1,2].

The improvement of these factors is resulting from chronic physiological adaptations caused by exercise. Therefore, the efficiency of the functioning of the systems enhances the metabolic use of energy substrates

glucose, fatty acids and amino acids on occasion. The reflection of this are lower triglycerides rates, decreased dyslipidemia, atherosclerosis, fatty liver, hypertension, insulin resistance, type 2 diabetes mellitus, sympathetic nerve activity, among several other cardiometabolic risk factors directly associated to mortality [1].

However, it is important to note that the magnitude of metabolic gains is closely associated with type of physical activity, weekly frequency, duration of activity, intensity of training loads and biological individuality. Furthermore, it is important to understand that obesity can increase the risk of orthopedic injuries. It is necessary to conduct a physical assessment of the obese individuals before starting an exercise program, whose main reason is the increased energy expenditure. Thus, the prescription and choice of mode can be initiated with activities that will promote muscle strengthening, mainly of the musculature surrounding the joints. After this period, activities considerably increase the energetic expenditure and require greater intensity can be gradually inserted into a training program to obese [3].

However, adherence is a necessary condition so that the benefits are maintained. But the obese individual can also order professional psychological aspects linked to the adoption of healthy lifestyle and behavior change. Social pressure and body exposure in gyms, parks or in the exercise practice sites, among others, could lead the obese people to feel ashamed and stop the program due to the emotional aspects [4].

It is therefore necessary that exercise physiologists understand the pathophysiological aspects of obesity can be prevented and combated by the positive adap-

tations caused by physical exercise, but we need to remember that obesity is a multifactorial disease and it requires an interdisciplinary approach so that the activities of the professionals associated with the treatment of the condition consider the biological individuality for the prescription of exercise training and the plurality of the aspects involved in the treatment.

References

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