

Rapid Communication

How to Start an Exercise Program for Obese Individuals and Minimize the Incidence of Orthopedic Problems?

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Received: 10-14-2015

Accepted: 10-27-2015

Published: 11-06-2015

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Abstract

Obesity is a metabolic disease related to functional and mobility impairments, musculoskeletal pain and orthopedic problems. The regular practice of physical exercise is able to improve the functioning of energetic systems, increasing metabolic efficiency, which reduces the progression of the pathological effects of obesity. However, it is necessary to conduct the physical assessment of obese individuals before a physical exercise program, and evaluate orthopedic injuries that may be developed, by the overload of their own body weight. Before beginning a weight loss physical training program for obese individuals, it is recommended to develop their specific muscular strengthening. It leads to a reduction of joint use and an improvement of articular protection, reducing muscle and joint injuries of obese people. Health professionals like physical therapists and/or exercise physiologists must understand the pathophysiology of obesity, the physical impairments of that disease, and be able to reduce the orthopedic injuries through the prescription of regular physical exercises.

The regular practice of physical exercise can improve the energetic systems operation and increase metabolic efficiency, which reduces the progression of the pathological effects of obesity. It promotes the improvement of central and peripheral hormone responses, enzymatic activity, vasodilatory capacity, myocardial perfusion, cardiac contractility, appetite regulation, release of anti-inflammatory adipokines and 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].

However, it is important to understand that obesity is related to functional and mobility impairments, musculoskeletal pain and orthopedic injuries. It is necessary to conduct a physical assessment of the obese individuals before an exercise program focused on the increase of energy expenditure. Thus, the prescription and choice of physical training must be started with exercises that will promote muscle strengthening, especially for muscles around the joints [3].

Before prescribing the type, frequency, intensity and volume of physical exercise for obese individuals, it is necessary to evaluate orthopedic injuries that may be developed by the overload of their own body weight [2,3].

Therefore, the main goal of the practice of physical exercises in obesity, increase energy expenditure and enhance metabolic energy systems, should initially be balanced with the diagnosis of joint injuries made through specific physical examination by health professionals.

It is known that strengthening skeletal muscles and stabilizing the vertebrate spinal column, reduces the impact on the intervertebral disks and also decreases the incidence of radiculopathy. Another example is the musculature involved in the hip and knee movements: strengthening of these structures would decrease work on the lower limb joints in cyclic

aerobic exercises performed to increase the fatty acids oxidative rate of and consequently promote body fat loss [3].

Thus, it is suggested that, before initiation a physical training program for obese individuals with the goal of weight loss, it is necessary to develop specific muscular strengthening. This way, there probably is a reduction of joint use and articular protection, promoting the reduction of muscle and joint injuries of obese people and consequently higher capacity and progression of loads and intensity of exercise training increasing energy expenditure.

Health professionals, as physical therapists and/or exercise physiologists, must understand the pathophysiology of obesity and the physical impairments of the disease. In this way, it will be less likely that the treatment provided through the regular practice of physical exercises brings injuries to articular and muscular structures of obese individuals who are going to start this physical training program.

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