

Modulation of NLRP3 Inflamassome and Monocyte Chemokine Receptors After Training of Individuals with Obesity

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Abstract:

Background & Objective: Obesity is a chronic, multifactorial, costly, high-risk disease that affects millions of people worldwide. The prevalence of overweight and obesity currently affects approximately 1/3 of the world population. It is known that obesity is closely associated with inflammation, which leads to an increase in the production of cytokines, mediated by the activation of a complex of intracellular proteins called inflammasome, among which the most described in the metabolic context has been NLRP3. The expression of the monocyte chemokine receptors CCR2, CCR5, and CX3CR1 determines the recruitment of the monocyte subtypes. Although it is accepted that physical exercise brings benefits associated with obesity, little is known about the modulation of NLRP3 inflammasome and monocyte chemokine receptors in obese individuals subjected to High Interval Intensity Training (HIIT), compared to those not trained. In this sense, the present study aims to investigate a possible modulation of NLRP3 inflammasome and monocyte chemokine receptors, in individuals with obesity after HIIT.

Methods: Sedentary subjects with obesity (n= 109) of both sexes aged between 18 and 60 years were divided into two groups: trained in three weekly HIIT sessions for eight weeks and control group (not trained). NLRP3 inflammasome, the components related to it (CASP-1, ASC, IL-6, IL-18 e IL-1b) and