

## The Role of Chemerin and Myostatin after Physical Activity

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**Abstract :** Obesity and overweight is one of the most common metabolic disorders in industrialized countries and in developing countries. One consequence of pathological obesity is cardiovascular disease and metabolic syndrome. Chemerin is an adipocytokine that plays a role in the regulation of the adipocyte function and the metabolism of glucose in the liver and musculoskeletal system. Most likely, chemerin is involved in obesity-related disorders such as type 2 diabetes and cardiovascular disease. Aerobic exercises reduce the level of chemerin and cause macrophage penetration into fat cells and inflammatory factors. Several efforts have been made to clarify the cellular and molecular mechanisms of hypertrophy and muscular atrophy. Myostatin, a new member of the TGF- $\beta$  family, is a transforming growth factor  $\beta$ ; that its expression negatively regulates the growth of the skeletal muscle; and the increase of this hormone has been observed in conditions of muscular atrophy. While in response to muscle overload, its levels decrease after the atrophy period, TGF- $\beta$  is the most important cytokine in the development of skeletal muscle. Myostatin plays an important role in muscle control, and animal and human studies show a negative role of myostatin in the growth of skeletal muscle. Separation of myostatin from Golgi begins on the ninth day of the onset period and continues until birth at all times of muscle growth. Higher levels of myostatin are found in obese people. Resistance training for 10 weeks could reduce levels of plasma myostatin.

**Keywords :** chemerin, myostatin, obesity, physical activity

**Conference Title :** ICSMES 2018 : International Conference on Sport Medicine and Exercise Science

**Conference Location :** Kuala Lumpur, Malaysia

**Conference Dates :** February 12-13, 2018