

Crosstalk between muscle and endothelial cells.

Gianni Parise, Departments of Kinesiology, McMaster University, Canada

The benefit of exercise on physiological systems other than skeletal muscle is well documented. The mechanism(s) of adaptation to exercise in non-skeletal muscle tissue, in many cases, is not well understood. In recent years, the identification of so-called myokines, cytokines released from skeletal muscle with the ability to signal in other tissues, have been described. The function of these myokines in tissues peripheral to skeletal muscle are largely unknown. In a first example of tissue cross-talk we demonstrate a novel role for Angiotensin II, produced by skeletal muscle, in promoting angiogenesis. In a second example of tissue cross-talk we have recently reported that following exercise training EPO expression is up-regulated in skeletal muscle and down-regulated in kidney suggesting that skeletal muscle may adopt a role in directing erythropoiesis during regular exercise. Both of these examples speak to the wide ranging effects of skeletal muscle in promoting homeostasis and maintaining the health of tissue peripheral to skeletal muscle.