

Public Abstract

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Title:THE EFFECTS OF AN ACUTE BOUT OF CONCENTRIC, ECCENTRIC, AND TRADITIONAL RESISTANCE EXERCISE ON ADIPONECTIN CONCENTRATIONS

Adiponectin is a protein secreted from fat that can help prevent the development of diabetes and atherosclerosis. The purpose of this study was to compare the effects of an single bout of eccentric (ECC) [the muscle elongation phase], concentric (CON) [the muscle shortening phase], or traditional resistance exercise (TRE) [combination of the elongation and shortening phases] on total adiponectin and high molecular weight adiponectin (HMWA) concentrations. Forty-three overweight and untrained men and women were randomly assigned to an ECC, CON, or TRE group. These subjects would perform a one repetition maximum (1RM), which was the most weight that could be lifted one time with ECC, CON, or TRE. Based off of their 1RM, each person would perform 3 sets of 10 repetitions with weight that was 75% of their 1RM weight. Blood samples were measured before and after exercise to determine how total adiponectin and HMWA were affected by each mode of resistance exercise. The CON group had significant increases total adiponectin while the ECC and TRE groups had significant decreases in adiponectin after the exercise sessions. There was no change in HMWA with any modes of exercise. These results indicate that CON exercise can stimulate an increase in total adiponectin concentrations. Further research is need to determine if long term resistance training, using one of these modes, can cause an increase in resting levels.