

*The Relationship of Metabolic Syndrome and Aerobic Exercise in Adult Male Fire Fighters*

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Previous studies have concluded that incidence of Metabolic Syndrome may be greater in male firefighters than in the US male population. A recent study reported that approximately 31% of firefighters were positive for Metabolic Syndrome; compared to 24% for the U.S. male population (NCEP III). Participation in aerobic exercise may decrease the risk of Metabolic Syndrome as cardiac risk factors are improved. This study aims to determine the effect of aerobic exercise participation on the prevalence of metabolic syndrome in a sample of male firefighters. Purpose: To examine the effect of aerobic exercise participation on the prevalence of Metabolic Syndrome in a sample of adult male firefighters. Methods: As a part of an annual physical exam, 177 male firefighters (average age=36) participated in an evaluation of risk factors associated with Metabolic Syndrome as defined by NCEP III. Metabolic Syndrome is defined as having the presence of three or more of the following: Waist circumference > 40", HDL Cholesterol < 40 mg/dl, Triglycerides  $\geq$  150 mg/dl, Blood Glucose  $\geq$  110 mg/dl and resting blood pressure > 130/85 mm Hg. Aerobic exercise participation was determined by self reported activity from a standard health history questionnaire. Subjects were classified for aerobic exercise participation as: aerobic exercise participation of less than or equal to 1 day per week (LOW), 2 to 3 days per week (MOD), and aerobic exercise participation greater than or equal to 4 days per week (HIGH). Results: The subjects were divided into groups based on the level of weekly aerobic activity. All data were analyzed using a Chi Square test ( $p < 0.05$ ). Of the 177 firefighters tested 46.3% (82) reported LOW, 48% (85) reported MOD, and 5.6% (10) reported HIGH weekly aerobic activity. The prevalence of Metabolic Syndrome for LOW was 25.6% (21) while the prevalence of Metabolic Syndrome for MOD was 15.3% (13). No one in the HIGH group met the criteria for Metabolic Syndrome. Conclusion: Participation in aerobic exercise appears to affect the incidence of metabolic syndrome in adult male fire fighters.