Can you really be fit and fat?

A review of *Metabolic Syndrome Is Inversely Related To Cardiorespiratory Fitness in Male Career Firefighters* ***Original article written by:*** DM Baur et al. Journal of Strength and Conditioning Research 2012 26: 2331-2337

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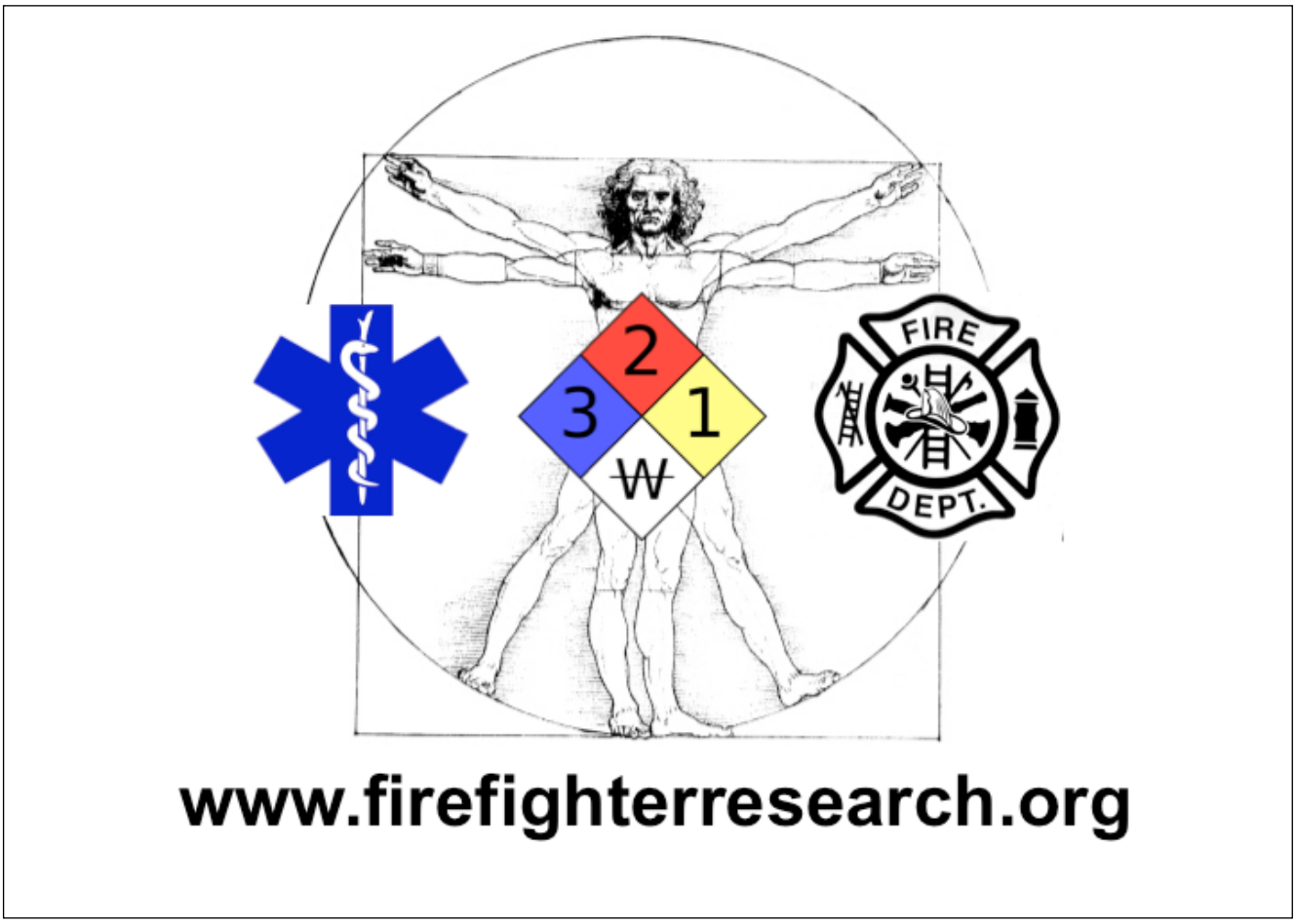

Introduction

Firefighting is a physically demanding and dangerous occupation. The leading cause of death in firefighters is cardiovascular disease, which accounts for nearly half of on-duty fatalities. Firefighters suffer from obesity, sedentary behaviors, and other cardiovascular risk factors. Individuals who have three cardiovascular risk factors are considered to have metabolic syndrome, which is a major predictor in diabetes, cardiovascular disease, and death. These risk factors include abdominal obesity, high BMI (≥30), high triglycerides, low "good" (HDL) cholesterol, and high blood pressure for high blood sugar. However, studies have shown that enhanced cardiorespiratory fitness is a protective factor against developing cardiovascular disease and metabolic syndrome.

What the study did

This study assessed the prevalence of metabolic syndrome in firefighters and its relationship with fitness. 957 male firefighters received a medical exam and a maximal treadmill exercise to estimate fitness in METS. The firefighters were then categorized into four groups: very low, low, intermediate and high fitness.

What the study reported

The average age for the firefighters studied was 39.6 years and the average BMI was 29.3 (overweight). More than 25% of the subjects met the criteria for metabolic syndrome (having three risk factors) while only 21.7% had no risk factors. The remaining firefighters had one or two risk factors. The most frequent risk factor found was decreased good cholesterol, which was closely followed by high blood pressure and blood pressure medication use. In general, firefighters with more risk factors were less fit and as age increased, so did the prevalence of metabolic syndrome.

The average fitness level for the entire study was 12.0 METs which is considered by many to be the minimum for a firefighter. The very low fitness group included 66 firefighters and 51.2% were considered to have metabolic syndrome. In the highest level of fitness group, only 5.2% were considered to have metabolic syndrome.

What it means for the fire service

While it is possible for a firefighter to have risk factors for metabolic disease, such as obesity, and still be fit; it is rare for this to actually happen. Sadly, the prevalence of metabolic syndrome in this large group of firefighters was higher than the general population in the United States.

There are three important messages for firefighters found in this study. 1) Higher fitness is associated with less metabolic syndrome and ultimately decreases the risk of cardiovascular disease, heart attack, and stroke. 2) For every 1 MET increase in fitness, the chance of suffering metabolic syndrome is reduced by 31%! 3) Cardiorespiratory fitness, a modifiable risk parameter, is more important than age, a non-modifiable risk parameter, in decreasing risk of cardiovascular disease.

As we have said before, firefighters must be strong to be effective but the most important muscle in a firefighters body is the heart. This study strongly supports the need to extend and improve fitness programs in the fire service.