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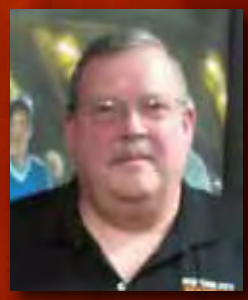

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OBESITY AND FIREFIGHTERS

By Matt Brzycki

One factor that's associated with an increased risk of cardiovascular disease is obesity. According to the most recent statistics from the Centers for Disease Control and Prevention (CDC), 35.9% of American adults are obese and another 33.3% are overweight.

These numbers are staggering, but the prevalence of obesity and those who are overweight is even higher among firefighters. For example, one study of 332 career firefighters in Massachusetts found that 34.9% were obese and another 53.0% were overweight. And a study of 116 career firefighters in New York found that 51.7% were obese and another 43.1% were overweight.

TERMINOLOGY

Before any further discussions, it's necessary to go over several definitions. The terms "overweight" and "obese" are based on body mass index (BMI) which is a ratio of weight to height.

To calculate your BMI, follow these three steps:

1. **Take your height in inches and multiply it by itself.**
2. **Divide that number into your bodyweight in pounds.**
3. **Multiply that number by 703.**

To illustrate, a firefighter who stands 5 feet 10 inches (70 inches) and weighs 180 pounds has a BMI of about 25.8. [Calculation: 70 x 70 = 4,900; 180 ÷ 4,900 = 0.0367; 0.0367 x 703 = 25.8.]

The CDC recognizes four BMI categories for adults who are older than 20. Here are those categories along with their associated BMIs:

- **underweight = 18.4 and below**
- **normal weight = 18.5 to 24.9**
- **overweight = 25.0 to 29.9**
- **obese = 30.0 and above**

A potential pitfall of the BMI is that it doesn't distinguish fat mass from muscle/bone mass. Two people of the same height and weight would have the same BMI but it's quite conceivable that they could have markedly different levels of body fat. So even though their BMI is identical, one individual can have an excessive amount of body fat while the other can have an acceptable amount. The fact of the matter is that people who are muscular and/or have "big bones" could be mistakenly categorized as overweight or even obese.

Therefore, the BMI must be employed – and interpreted – with caution. However, it's safe to say that being overweight/obese is having an excessive amount of body fat.

ASSOCIATED PROBLEMS

In general, being overweight/obese has an enormous impact on physical, mental, emotional and social health and development. For example, overweight/obese individuals have a higher risk of chronic conditions such as cardiovascular disease, asthma, hypertension (high blood pressure), high cholesterol, bone/joint problems and certain types of cancer.

Another concern is a condition known as metabolic syndrome which refers to a cluster of several risk factors for cardiovascular disease and Type 2 Diabetes. These risk factors include high waist circumference, high triglycerides, hypertension, high blood glucose and low high-density lipoproteins. Males who are overweight are six times more likely to meet the criteria for metabolic syndrome than males who are normal weight; males who are obese are 32 times more likely to meet the criteria for metabolic syndrome than males who are normal weight.

In addition, many overweight/obese individuals have a greater risk of sleep apnea which is the cessation of breathing while asleep. This occurs when the fatty tissue in the neck area compresses the airway and obstructs the flow of oxygen. Needless to say, sleep apnea is a potentially fatal disorder.

Those who are overweight/obese suffer from a poor self-image and low self-esteem along with a tendency to withdraw from others and experience increased loneliness, sadness, nervousness and depression. These individuals can also be subjected to social stigmatization and discrimination.

Firefighters who are overweight/obese are less fit to perform their jobs in comparison to firefighters who are normal weight. Being less fit not only puts the individual firefighter at risk, but also his/her fellow firefighters as well as the general public.

Point to ponder: People who gain weight are more easily fatigued. People who are more easily fatigued are less active. People who are less active gain weight. Talk about a vicious cycle.

WHY THE HIGHER PREVALENCE?

Several reasons have been cited as to why firefighters have such a high prevalence of obesity, including lengthy periods of low or no activity and sleep disruption. Shift work has been fingered as another reason because this schedule makes it more difficult for firefighters to adopt and sustain regular patterns of healthy eating and exercising. Lastly, many fire departments have no mandatory fitness program and/or fitness testing. This gives many firefighters little or no incentive to maintain an appropriate bodyweight.

THE MECHANICS OF WEIGHT LOSS

How do individuals become overweight/obese? Well, it boils down to simple arithmetic: Over a long period of time, the number of calories that they consumed was greater than the number of calories that they used. And that surplus of calories was stored in their bodies in the form of fat. Since there are about 3,500 calories in one pound of fat, producing a surplus of a mere 250 calories a day for 14 days will add one pound of fat to your body. This might not sound like much but do that for a year and you'll be 26 pounds heavier.

There are three ways to lose weight: Eat less, exercise more or do a combination of the two. In fact, sensible and sustainable weight loss is a blend of eating less calories and using more calories. Look at it this way: To lose 10 pounds of fat in 10 weeks, you'd have to produce a deficit of 500 calories per day for 70 consecutive days. Eating 500 less calories per day can be quite a challenge; the same can be said about using 500 more calories per day. And don't forget, this 500-calorie deficit would need to be achieved every day for 10 weeks.

The best way to lose weight, then, is to do a combination of the two: Eat a little less and exercise a little more. And it doesn't have to be a 50-50 split. In this example, you could achieve a deficit of 500 calories by eating 200 less calories and using 300 more calories. Same result but less overwhelming. Or, perhaps producing a deficit of 250 calories per day is more realistic for you than a deficit of 500 calories per day.

Bottom line: Obesity is highly prevalent among firefighters, but the condition is manageable with the right approach and a dedicated effort.

Matt Brzycki is the Assistant Director of Campus Recreation, Fitness at Princeton University in Princeton, New Jersey. A former Marine Drill Instructor, he has authored, co-authored and edited 17 books including his latest, the fourth edition of A Practical Approach to Strength Training.