

Firefighter Fitness and Program Implementation

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Richard McFarland

Certification Statement

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Firefighting is one of the most dangerous jobs in the world. Not only do firefighters face dangers during emergencies they also face dangers from within themselves.

According to the United States Fire Administration 43.8% of firefighters who died in the line of duty in 2008 died as a result of overexertion or stress. Due to the nature of the job stress is an inescapable hazard. The purpose of this paper is to examine the number one killer of firefighters, outline how to assess health risks, look at fitness programs in place across the county, the role that nutrition plays in firefighter fitness and ways to implement those programs.

Coronary artery disease is the number one killer of firefighters across the United States. In addition CAD is the leading cause of death worldwide. Wikipedia defines CAD as “the end result of the accumulation of atheromatous plaques within the walls of the coronary arteries that supply the myocardium (the muscle of the heart) with oxygen and nutrients.” When the accumulation of plaque grows it has the ability to completely or partially block the arteries of the heart leading to cardiac muscle death then ultimately death of the individual. CAD is the leading killer of firefighters each year but illness such as diabetes can lead to firefighters having to leave the job for medical reasons.

Firefighters can lessen their risk of developing CAD through early identification of several key risk factors that are modifiable. In addition to the modifiable risk factors there are non-modifiable risk factors. The chart below from the National Volunteer Fire Council outlines both:

Modifiable Risk Factors

Cigarette Smoking

High Blood Pressure

High Cholesterol

Obesity

Physical inactivity

Diabetes

Non-Modifiable Risk Factors

Men > 45; Women > 55

Family History of CAD

Father or Brother diagnosed <55

Mother or sister diagnosed <65

Early medical screenings can lead to the diagnosis of modifiable risk factors. Many fire departments conduct yearly physicals that test for these factors. The Covington Fire Department conducts these tests at the beginning of each year. Through a partnership with St. Elizabeth Business Health each employee goes through the following tests: Blood work, vision, hearing, breathing and urine analysis. The purpose of these tests is to ensure that each employee is physically fit for duty and to also pre-screen for potential future health problems. In addition to the tests members over the age of 45 are subject to a colon exam. Once the results of the tests are returned a meeting is conducted with a medical doctor to review the results and to outline any potential treatment options that may be needed.

CAD is not the only medical problem that may be uncovered during medical evaluations. Evaluations may result in the uncovering of diabetes, hypertension and high cholesterol. Without routine evaluations these illness may go undetected for several years until they affect the individual to the point of serious illness or even death. The benefits to

routine exams are not solely for the firefighter in question. The city or agency may potentially be able to save money down the road through early identification of serious health problems. The detection of health issues early could lead to early interventions that could possibly prevent a heart attack that could result in the death of a firefighter or at the least a prolonged leave from work. If a firefighter is off work for a prolonged period of time the city or agency must continue to pay that firefighter sick leave and in addition they must also pay overtime to cover that firefighter's duties. Through early detection money may be saved.

In addition to medical screenings many fire departments are implementing fitness programs as a way to improve firefighter fitness levels. A majority of the programs however are voluntary and may not be used by all members of a particular department. The Covington Fire Department does not have any formal fitness program. However, there is policy in place that states all members are to be provided with 1 (one) hour per day for physical fitness.

A pilot program was conducted approximately one year ago to provide incentive for firefighters to engage in fitness activities. The Chief of the department had the original idea of creating a competitive fitness program. Prior to its implementation the chief had to work with the executive board of the union to finalize the details of the program. In order to attract interest in the program from the members of the department rewards were given for the top performers. The rewards were distributed according to the top three finishers from each shift as well as each top performing shift would be rewarded and the top performing firehouse.

Under the program members were broken in to their respective shifts and competed against one another for the biggest percentage of weight lost. The top three finishers on each shift were provided with a reward. First place received one 24 hour tour of duty to be used as an extra vacation day as well as a \$75 gift certificate issued in the form of a Discover card. Second place was awarded a \$50 Discover gift card and third place was awarded a \$25 Discover gift card. The shift that lost the most weight was awarded with ten randomly selected members winning a \$20 Discover gift card. The firehouse that posted the highest percentage of weight loss was also awarded a \$20 Discover gift card for 5 randomly selected members. The "Biggest Loser Challenge," as it was named, was conducted over an eight week period. As an added incentive the overall leader at the halfway point was awarded one 24 hour shift off. The contest was done strictly on a voluntary basis. The benefit to this program was two-fold because it motivated individuals who do not normally engage in physical fitness activities to participate and it encouraged those that are already active to work even harder. Many of those individuals who had no prior work-out regiment continued with their own fitness programs following the conclusion of the contest.

One of the challenges of developing this program and distributing the awards was the ability to ensure fairness and equality throughout the process. By involving Local 38 with his ideas and intentions of the program the chief was able to add validity and interest in the program from the initial stages. To ensure that all weigh ins were fair only one scale was used to record participants weights and everyone who weighed in did so wearing their duty uniform without boots. At the final weigh in participants had to be weighed in by a member of the fire department administration staff and the weigh in had to be witnessed

by a member who was not on the same shift. At the conclusion of the contest all results were presented to the department so everyone could see the final numbers. The use of strict guidelines and the open sharing of the final results further added to the validity and fairness of the program. This program has not been repeated as of yet but several other ideas are in the process of coming to fruition.

In addition to the “Biggest Loser” program the Covington Fire Department has partnered with a local Physical Rehabilitation company to conduct fitness evaluations. These evaluations are completely voluntary and are done in the interest of the firefighters. The test includes:

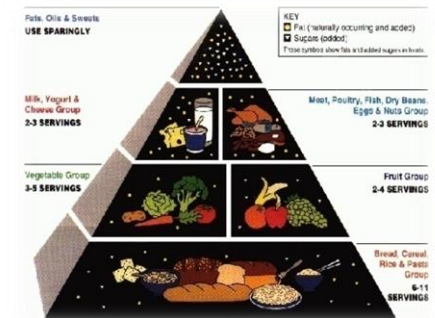
1. Maximum push up test
2. 3-minute step test
3. Grip strength
4. Body fat analysis
5. flexibility

The test results are reviewed with the firefighter by a certified physical therapist who can then work towards creating a personal workout program catered to an individual's needs and goals.

The Dallas Fire Department has implemented a mandatory wellness and fitness program for its firefighters. According to the program outline the program was designed to combat the increased risk of heart disease and cancers that firefighters face. DFD also implemented the program to be in accordance with required physicals through NFPA 1500, OSHA Respiratory Standards and Superfund Amendments and Reauthorization Act. Their

program was based upon a model produced by a joint venture between the International Association of Firefighters and the International Association of Fire Chiefs. Components of the program include: a medical evaluation, fitness evaluation and evaluation by a medical doctor to deem the firefighter fit for duty. The health and wellness program is mandatory for all certified firefighters, confidential and non-punitive.

The medical evaluation includes the following to provide for a baseline assessment: Medical exam, Complete physical exam, Blood test, Urinalysis, Vision test, Audiogram, Spirometry, Chest X-Ray, EKG and cancer screening. Following the medical exam a firefighter is cleared to participate in physical fitness activities. The Fitness exam includes: Aerobic capacity, Muscle strength, Body composition, Muscular endurance and flexibility. Following the fitness exam a physician either certifies the firefighters as fit for duty or not. In order to promote participation in the program and for its members to gain the most from the program DFD provides an incentive to go along with the program. The incentive program is paid in the following manner: GOOD - \$150; EXCELLENT - \$250; SUPERIOR - \$350. The above information was found at:



http://www.dallascityhall.com/committee_briefings/briefings0207/PS_020507_WellnessFitness.pdf

The implementation of mandatory fitness programs for firefighters is a step in the right direction to promote firefighter fitness and to improve the overall health of firefighters. However, unless the fitness program is paired with a nutritional program the firefighters involved will not be able to experience the full benefit. Fire departments can

contract with or work in cooperation with a local nutritionist to assist firefighters with setting up a nutritional meal plan. The United States Department of Agriculture has developed the food pyramid that has been used for decades to assist individuals in choosing the right foods to stay healthy. One of the most important things to remember when using the food pyramid is to maintain a good selection of foods from each category. When it comes to nutrition the following “ABC’s of Nutrition” can be followed:

1. **Aim for fitness:**

1. Aim for a healthy weight. Balance the calories you eat with physical exercise.
2. Do 30 minutes of exercise daily or most days.

2. **Build a healthy base:**

1. Use the food pyramid to make healthy food decisions.
2. Build your eating pattern on a variety grains, fruits and vegetables
3. It is fine to enjoy fats and sweets occasionally. The key is moderation

3. **Choose Sensibly:**

1. Eat sensible portion sizes
2. Use the Nutrition Facts Labels to help choose foods lower in total fat, especially saturated fat as well as in cholesterol and sodium.
3. If you are an adult and choose to drink alcoholic beverages, do so sensibly - limit intake to one drink a day for women or two for men.

Fire departments can use resources from multiple areas and levels of involvement to assist with implementing a fitness program. The IAFF and IAFC in conjunction

with the American Council on Exercise have developed a program entitled “Peer Fitness Training.” The purpose of the program is to train firefighters in the safe and effective methods of developing and implementing a physical fitness program for his or her home department. At the completion of the 5 day program successful participants will be certified personal trainers through ACE. The course outline on the IAFF website include the following areas of concentration that participants will focus on: anatomy, kinesiology, biomechanics, exercise science, exercise testing, exercise programming, exercise techniques, instructional/spotting techniques, nutrition, fire service wellness/fitness, motivation and communication techniques.

The Covington Fire Department has two members currently enrolled to attend the next PEER Fitness Course in this region. The goal of the program is to have those two members return to the department with the knowledge and ability to design and implement training programs for their fellow firefighters. The Chief of the Department has immediate and long term goals regarding firefighter health and wellness. The Chief, along with cooperation from IAFF Local 38, would like to implement a mandatory physical fitness program for all Covington Firefighters. In the past with the assistance of a federal grant for firefighter health and wellness the Covington Fire Department had the opportunity to work out with personal trainers while on duty. The benefit to this program was direct contact with a certified personal trainer and the development of an individual’s specific needs and goals. The program was discontinued after the grant money was exhausted and the city was unable to support the program financially.

One of the largest obstacles fire departments must overcome in regards to implementing or sustaining a fitness program is monetary constraints. In today's economy "non-essential" programs are generally discontinued in money saving efforts. Despite the fact that fitness is essential to firefighting the cost of maintaining a program could prove to be more than a department can afford. A majority of departments only option for these programs is through grant money. According to the USFA in 2008 146 fire departments across the country received federal grant money to support firefighter fitness and wellness and more than \$10.8 million dollars was distributed. In addition to grants fire departments can work with area gyms or vendors and work out a donation program. Recently the Covington Fire Department received surplus fitness equipment from local hotel chain that was undergoing renovations to their workout facilities. The equipment was inspected by another local gym equipment vendor to ensure it was in working order and then distributed to the firehouses that were in need of additional equipment so that more than one firefighter could work out at a given time.

Firefighter fitness cannot be accomplished overnight. Only through the dedication and determination of individual firefighters with the support of their brothers and sisters along with that of the department can it be achieved. The use of annual medical evaluations can provide benchmarks for firefighters to assess their own personal health. Fitness evaluations can be used as motivational tools to reinforce positive behaviors and accomplishments as well as help to identify areas that need improvement. A common thread among fitness programs is they must be non-punitive to promote participation and decrease fear. The Covington Fire

Department has taken several steps in the right direction with making firefighter fitness a priority with the “Biggest Loser Challenge” and sending two members to the IAFF-IAFC Peer Fitness program. The Chief of the department has already voiced his support of improving the health of the entire department and ensuring it remains one of the best in the country. The Dallas Fire Department’s program is one that can be used as a model for other departments who are willing to undertake the challenge of instituting their own programs. Only through constant evaluation and improvement can a program be truly successful and continue to promote firefighter participation.

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