Firefighters’ Worst Enemies

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Certification Statement

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: Danielle M. Greene
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Abstract

There is no question, being a firefighter is a dangerous job. This paper will go over some of the added dangers firefighters face. There are several risky health issues that are increased being a firefighter. Heart disease, cancer and mental illness are the three that will be covered in this paper. It will also look at the research that has been done since the terrorist attacks on September 11, 2001 that are helping find ways to keep firefighters safe. The numbers are staggering for firefighters that end up with these diseases and the paper outlines some of the statistics that are attached to these diseases. Astounding numbers are included for illnesses that are being related back to the terrorist attacks in 2001. Overall, studies and research continue to help find better ways to lessen the risk of firefighters getting these diseases.
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Introduction

Firefighter: a person who fights fires. This is the definition that the general public would see in the dictionary but a firefighter is so much more than that. Many children idolize firefighters and hope to be one when they get older. Adults idolize them as well; they see reports of firefighters rescuing someone from a burning home or caring for someone who was involved in a motor vehicle accident. What the general public doesn’t see is the things that firefighters have to deal with, mentally, physically and emotionally. Being a firefighter is a demanding job both physically and emotionally. Firefighters have an increased risk in many things including but not limited to heart disease, cancer, post-traumatic stress disorder (PTSD), suicide, on the job injuries, etc. This paper will go more in depth into heart disease, cancer, mental illnesses, preventative measures and the affects the terrorist attacks on September 11, 2001 had on the fire service and how these findings are helping improve efforts to keep firefighters safe.
Heart Disease

A common accusation is that the leading cause of duty related deaths among firefighters would be burns and smoke inhalation, for good reason. What people failed to recognize for so long is that there is actually a silent killer amongst some of the world’s most honorable and heroic men and women. Studies have proven, “heart or cardiovascular disease (CVD) is the single most frequent cause of duty-related fatalities among U.S. firefighters.” Approximately half the fatalities are CVD related, 90 percent amounting to coronary heart disease (CHD) (International Association of Fire Fighters, 2013, pp. 1-3). These numbers are not factoring in the seventeen to one non-fatal, line of duty CVD occurrences in the fire service. As of 2015, heart attacks were still the leading cause of firefighter deaths.

When researching relations between specific jobs and diseases, the most commonly used method is cohort mortality study. In this study, researchers compare the risk of death from specific diseases in a group of people to a reference population. During a fire fighter CVD mortality study, “the number of deaths from CVD in a group of fire fighters is compared to the number of CVD deaths from a reference population. The result will be a ratio of the number of observed deaths in the fire fighters compared to the number of the deaths in the reference or comparison population. The ratio is called a standardized mortality ratio (SMR).” (International Association of Fire Fighters, 2013, p. 3). Unfortunately, in this study, only heart disease deaths are counted for, not non-fatal diagnoses.

Firefighters have to go through demanding tests, both physically and mentally, in order to be hired on a department. These tests include but are not limited to: physical ability tests, written tests and medical tests. In theory, firefighters therefore should be healthier than the overall
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population, which would leave one to believe that firefighters would have a lower mortality rate than the overall population from CVD.

Another study, proportionate mortality is the percentage or fraction of on-duty deaths from CVD. It is undisputed that firefighters have the highest proportionate death rate due to heart disease when compared to any other occupation. As of 2004, 45 percent of on-duty deaths were heart disease related every year. More up to date data in 2011 shows that the percentage is up to 50. (International Association of Fire Fighters, 2013, p. 4)

Many studies have proven that things like physical and emotional stress can initiate critical cardiovascular events in people with underlying heart disease. Research has shown that certain on the job activities that firefighters are required to do can ultimately trigger cardiac events in firefighters with prior heart conditions. The activity that has the biggest percentage of deaths is fire suppression. Fire suppression is said to only take up five percent of a firefighters time each year, over 30 percent of coronary heart disease line of duty deaths occurred during fire suppression. (International Association of Fire Fighters, 2013, p. 4) The study confirmed, “that the probability of a heart disease event is about 10 to over 100 times greater during fire suppression than during non-emergency duties.” (International Association of Fire Fighters, 2013, p. 4).

Although these studies have not been able to provide concrete proof that firefighters have an increased risk versus the overall population, it is certainly shown that firefighters have the highest proportionate line of duty deaths from CVD compared to any other occupation, as it accounts for almost half of all line of duty deaths.

There is a list of things that can be done by cities, fire departments and the firefighter themselves to help with heart disease prevention. While none of these are said to completely
eliminate heart disease, they can help. Fire departments can provide annual medical evaluations to make sure that employees are capable of doing the vigorous tasks that come along with the job. With this, they should also make sure that the doctor or doctors that are giving these evaluations are well-informed about the vigorous physical requirements that come with firefighting. Departments can also make sure there is sufficient staffing to avoid over-exertion, be sure to have proper on-scene rehabilitation at fires and other more strenuous calls. This would include medical monitoring of the firefighters working the scene as well as hydration and cooling areas. Another simple thing to do is to make sure that firefighters are wearing their self-contained breathing apparatus (SCBA) during all phases of fire suppression, even after the fire is out and overhaul is underway. Firefighters should focus on fitness especially cardio exercises. A lot of fire departments now have gyms in their departments so firefighters can work out at work and many also have fitness programs for their department. It’s important to stay physically fit for many reasons but it will certainly aid in preventing any cardiac events. A few other things firefighters can do is not smoke, keep a healthy blood pressure, eat a healthy diet and sustain an ideal body weight.
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Cancer

The three words no one wants to hear: “you have cancer”. It’s becoming more and more relevant that firefighters around the United States are hearing those three words. Recently, it’s becoming evident that cancer is a very serious issue in the fire service and we have carcinogens to thank for that. The number of dangerous carcinogens that firefighters are exposed to is quite large and growing. The list unfortunately includes known cancer-causing chemicals, such as polycyclic aromatic hydrocarbons.

Studies show that firefighters are more likely to develop certain cancer compared to workers in other occupations. Research shows that firefighters are twice as likely to develop testicular cancer, they have a higher rate of getting non-Hodgkin’s lymphoma, prostate cancer, and multiple myeloma.

Evidence shows the carcinogens that firefighters are exposed to are increasing the risk of cancer. Tradition so to speak in the fire service was that the cool firefighter had gear that was covered in black soot and a helmet charred black from all the fires it has been in. Now, it’s not so cool to have dirty gear. Not only exposing oneself by doing so, it exposes fellow firefighters. Just because they aren’t the ones wearing the dirty gear, the carcinogens lingering on gear can spread around the firehouse as well as sleeping quarters, in the apparatus, etc. Along with bunker pants and a bunker jacket, the hood is a major piece of gear that needs to be washed and switched out. Studies are being done to look at the absorption of the soot and carcinogens that are on the hood that seep into ones neck area that are possibly causing thyroid cancer and other cancers as well.

Prevention. Prevention. Prevention. The one thing firefighters can control is the preventative steps they take to keep ourselves safe. In the job, we can’t control the things that
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burn and the chemicals that are part of spoke because of different things burning. What we can do is clean our gear regularly. The gear should certainly be washed after every fire call when inside a structure where soot and carcinogens can get on it. Gear should also be washed regularly even if there are no fire calls, it’s just good practice. Another easy step to take is to wear a self-contained breathing apparatus (SCBA), one might think this should be normal procedure but a lot of firefighters think for example that since they are outside, not closed in at a vehicle fire that an SCBA isn’t necessary, but it is. The smoke, especially from the materials burning from a vehicle fire, is very toxic and just because the smoke looks to be dissipating in the air doesn’t mean that it isn’t there and can’t be inhaled. Photos of firefighters can be seen all the time with SCBA’s on their backs but no mask on, if going through the hassle of wearing it on your back, you mine as well just wear the mask. It’s a simple step that could prevent cancer in the long run. Diesel exhaust, it’s not something we think about as often as we do carcinogens but it is also a connection between cancer and firefighters. On the job, we are around apparatus’ all the time that are running spilling out diesel exhaust. Exhaust can get into the bays when backing in the apparatus before the exhaust vent is attached to the exhaust pipe. Most times, the bay is connected to where the living quarters are. Firefighters along with anyone should be getting yearly checkups. Early detection is key in cancer treatment, it can mean the difference between surviving and dying. These are all things that need to be on the forefront of our minds to help keep us safe and healthy.
Mental Illness

Mental illness is becoming an increasingly hot topic. Not only in the general population but in the fire service as well. It’s hard to say one way or another but maybe it’s not so much a new topic but something coming up that was hidden and not talked about in the past. In this day and age, mental illness is becoming a more acceptable topic to talk about so it is being brought up more in normal conversation, the news covers different mental health stories, etc. Two popular topics within mental illness are Post-Traumatic Stress Disorder and Suicide.

Post-traumatic stress disorder (PTSD) is defined by the U.S Department of Veterans Affairs, National Center for PTSD as, “a mental health problem that some people develop after experiencing or witnessing a life-threatening event, like combat, a natural disaster, a car accident, or sexual assault.” (U.S Department of Veterans Affairs, 2017). With that being said, just because someone experiences a traumatic event does not mean they will end up having PTSD. It is said though, that people who go through multiple traumatic events have a greater risk of having PTSD. Studies show that “anywhere between approximately 7% and 37% of firefighters meet criteria for a current diagnosis of PTSD.” (Very Well Mind, 2017). The large range is due to how they were surveyed, the group of people surveyed (firefighters, first responders, volunteers, etc) among other variables.

Shame is a word that a lot of people associate with asking for help and in the fire service, there is a stigma in the fire service that basically says if someone asks for help, they are weak. When in reality, someone has to be very strong to ask for help. Firefighting is no longer solely fighting fire. Firefighters typically go to a lot of medical calls and car accidents. These types of calls can be some of the worst to deal with. Many firefighters don’t talk about what they see and
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they keep it all bottled up which can lead you down the wrong path. One of the easiest ways to alleviate some of the stress is to talk about it and it’s typically easiest to talk to coworkers that saw the same thing. In most departments, after any major or traumatic call, firefighters debrief. Even if there is not a debriefing, there are always people or organizations that you can call to talk to if needed.

As discussed, talking and asking for help can make all the difference. Fire departments around the United States are implementing procedures and programs to aid anyone who needs assistance. There are all types of programs available for any first responders to contact if help is needed. The National Volunteer Fire Council Helpline, The National Suicide Prevention Lifeline and Counseling Services for Firefighters to name a few are all there to help if needed for any issue big or small.
343; a number most of us in the fire service will never forget. This is the number of firefighters that died responding to the terrorist attack on September 11, 2001 in New York. There are over 110 more that have died since due to their injuries sustained that day. (Never Forget Project, n.d.) Many more are battling all different illnesses that are believed to be related. Research is showing that thyroid, colon, prostate and blood cancers are the most common among FDNY first responders who were at Ground Zero. There are some shocking statistics outlining illnesses related to the terrorist attack. Over 7,000 FDNY firefighters and emergency medical technicians have been or still are being treated for an injury and/or illness. (Never Forget Project, n.d.) Around 5,400 have been diagnosed with lower respiratory diseases. These include but are not limited to asthma, pulmonary fibrosis and chronic bronchitis. (Never Forget Project, n.d.) As many as 5,200 are noted to have been diagnosed with upper respiratory diseases including vocal cord diseases. (Never Forget Project, n.d.) 3,700 have been diagnosed with some kind of mental health illnesses. (Never Forget Project, n.d.) Another 5,400 have been diagnosed with gastro esophageal reflux disorders and 1,100 have developed cancer with 44 of those dying despite treatment efforts. (Never Forget Project, n.d.) A lot of research for different illnesses related to the fire service came to because of the terrorist attack on September 11, 2001. Even almost 17 years later, new studies are being done and new things are being learned because of the tragic event that happen. Although it was and always will be a sad day in history, it is helping the current day fire service and is providing insight on what to do to potentially prevent these illnesses in the future.
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Conclusion

At the end of the day, when signing up to be a firefighter, know that you are signing up for a dangerous job. There is no question that what firefighters do is exceedingly dangerous and highly stressful. Between technology, studies and research, the fire service is learning preventative measures to keep the heroic men and women that serve their communities safer on and off the job.
References


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