***Cancer in the Fire Service…..***

Cancer within the fire service is the most dangerous and unrecognized threat to the health and safety of our nation’s firefighters (Firefighter Cancer Support Network, 2013). Multiple studies conducted throughout the United States and Canada have proven firefighters are at an increased risk for many different types of cancer; in some cases as high as 2.2 times more likely than the general population. Some studies are finding firefighters are being diagnosed with more aggressive types of cancer such as brain cancer at younger ages when compared to the general population. Currently, 60 % of firefighters are diagnosed with cancer and the percentage continues to rise.

So why are firefighters at an increased risk to cancer? Today’s fires are much different than those fires our fathers and grandfathers fought years ago. Today most items in our homes, businesses, and places of work are made of plastic or some type of synthetic material often developed from petroleum products. When these items are exposed to heat and fire, they release dangerous chemicals. The particles from these items can seep into and through the firefighter’s turnout gear reaching the skin. Once the particles reach the skin the body absorbs the chemicals from the particles into the blood stream, and then sends them to the body’s detoxification and reproductive organs where they can develop into malignant cells (Firefighters Cancer Support Network, 2013). Skin is the body’s second largest organ in area and is highly absorptive. The areas of the face, neck, jaw, and groin are the most permeable areas of the body. The permeability of the skin increases with a rise in the temperature of the skin. For every 5 degree rise in skin temp, the skin absorption increases 400% (Firefighter Cancer Support Network, 2013). This is a critical stat for firefighters who are already experiencing an increased skin temp due to the heavy turnout gear they are wearing, plus adding an elevated ambient temp when entering into a structure that is on fire with highly elevated temperatures. The particles and chemicals that the firefighters are being exposed to are being absorbed at a much quicker rate due to the elevated skin temperatures.

So what can we do to limit the exposure of our firefighters to these dangerous chemicals? The Ashland Fire Department began a cancer prevention program in 2016. This program is in its infant stages but growing as we learn more about cancer prevention. The department is working towards having one extra set of turnouts for each member so in the event the turnouts are soiled at a fire, they can be washed and the firefighter has another set to wear while his or her first set is being washed. This ensures the firefighter does not become re-contaminated with the already soiled gear. Immediately following a fire attack, the firefighters are encouraged to wipe down their hands, neck, and face with wipes that are in each apparatus. Upon returning to the station, the staff are required to shower in the departments decon shower and leave all soiled uniform clothing in the laundry room so as not to contaminate the living quarters of the station. Following a fire attack, all apparatus interiors are wiped clean if soiled to prevent additional contamination. These steps are helping to reduce the time the firefighters are exposed to these chemicals and particles following a fire attack.

A new emerging trend in the fire service to help combat the effects of the chemicals and particles the firefighters are exposed to is done by cleaning the body from the inside out. This is done through the use of infrared heat and creating large amounts of sweat thereby pushing the contaminants out of the body; this is done inside an infrared sauna. Yes a sauna in the fire station, sounds crazy right? The sauna used as a detoxification unit uses infrared heating to accelerate a generous sweat without raising the core body temperature. Upon arriving to the station following a fire attack, the crew member will place their soiled turnouts and uniform in the laundry. The crew member will then shower using the departments decon shower, then enter the low temperature (below core body temp of 98.6 F) sauna for 10-15 minutes. The low temp infrared sauna helps to create a vigorous sweat in a short amount time without increasing heart rate and blood pressure. This process allows the body to release stored toxins via the sweat so they are not absorbed into the blood stream and circulated to the body’s organs. Following the short stay in the sauna, the crew member will again shower and don a clean uniform.

This entire process allows the chemicals which contain known carcinogens to exit the body without having to move through the blood stream and organs such as the kidneys and liver. The incidents of cancer throughout the fire service are rising at an alarming rate. For 2014, the IAFF (International Association of Fire Fighters) reported a total of 117 deaths, 62% were from cancer. For a period from 1993 to 2003, there were a total of 40 cancer related deaths.

In August of 2017 the Ashland Fire Department was contacted by Chuck Porter of Superior Sauna’s in Ashland. Chuck is aware of the benefits to firefighters of using a sauna and wanted to offer a donation of a sauna to the Fire Department. After two meetings several units were considered and a decision was made, Superior Sauna’s would be donating a 4 person Infrared Sauna to the Ashland Fire Department to assist with detoxification following fires. We were completely taken back by the generosity when he called and offered to donate the unit to us. This is a great step forward in cancer prevention for our department moving forward into the future. This is certainly not something we would be able to purchase on our own during times of strained budgets. The unit will be installed into the apparatus bay of the station. Along with the generosity of the sauna from Superior Sauna’s, the wiring of the unit is being donated by Omer Nelson’s Electric. We cannot thank both Superior Sauna’s and Omer Nelson Electric enough for their support of our department.

The Greenfield F.D. of Milwaukee County placed a sauna in use to help prevent cancer within their department earlier this year. The Indianapolis F.D. has placed a sauna in service in March of 2017. The use of saunas within the fire service is increasing and is the newest step in preventing cancer in the fire service. The Ashland Fire Department is excited to be part of this newest step towards cancer prevention for our staff members.

References

Tutterow, R. (2015, September 10). Sweating It Out. Fire Apparatus & Emergency Equipment, 20(9).

Ford-Stewart, J. (2017, May 15). Greenfield firefighters get sauna to sweat out toxins. USA Today. Retrieved from www.usatoday.com/story/news/2017/05/16/greenfield-firefighters-get-sauna-sweat-out-toxins

LeMasters, G., Ph.D. (2013). Taking Action Against Cancer in the Fire Service. Firefighter Cancer Support Network, 2. Retrieved from www.firefightercancersupport.org.

Reith, R. L. (2017, April 20). Indianapolis Fire Department Aims to Limit Cancer Risks with Chemical Detox Sauna. Fire Engineering.