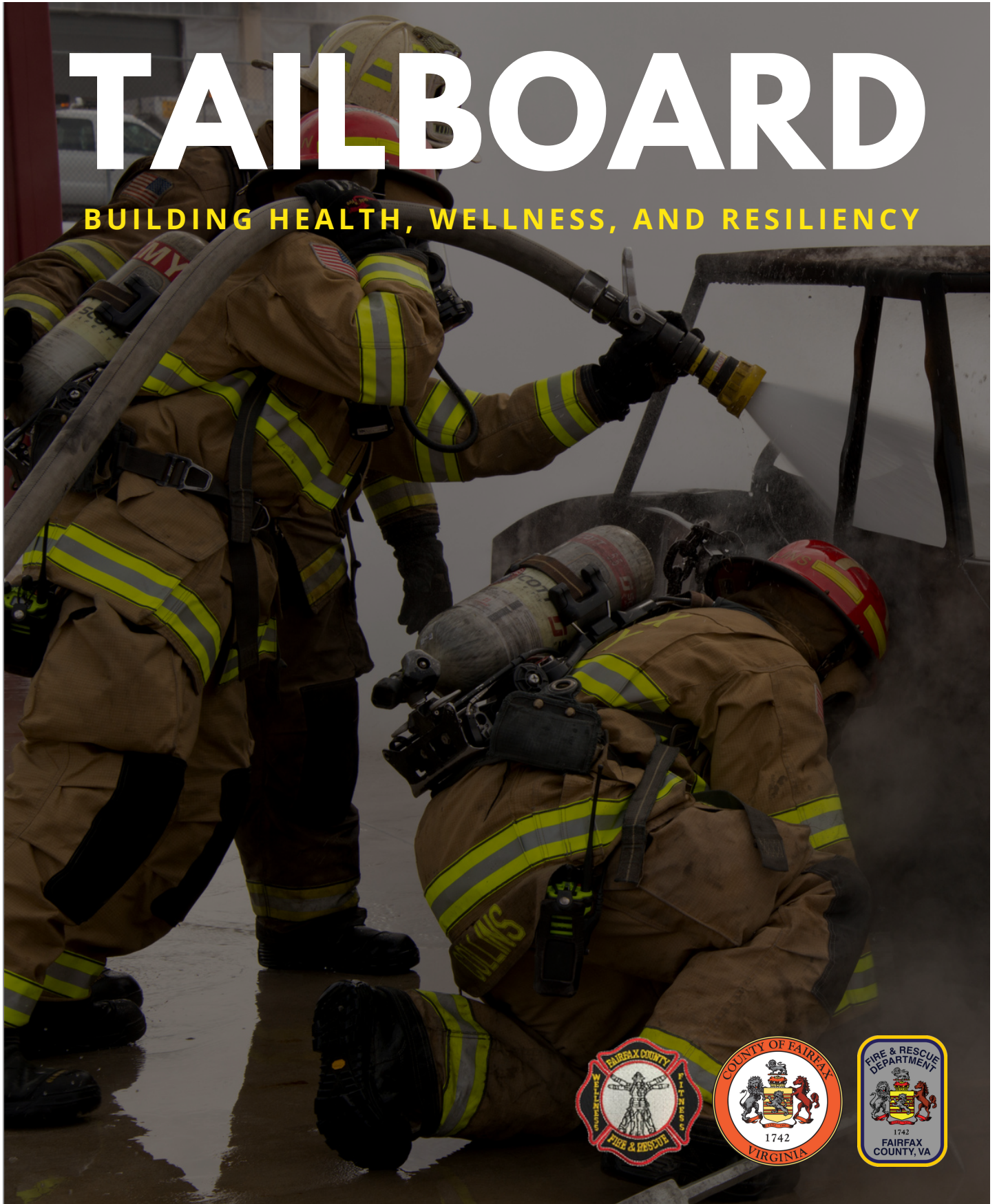


TAILBOARD

BUILDING HEALTH, WELLNESS, AND RESILIENCY



CANCER PREVENTION AUGUST 2022



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CONTRIBUTOR'S NOTE

By now you are catching on to who we are, our team, and our commitment to you. We strive to to continue to combat the negative impacts of stress, promote wellness and increase overall resiliency.

August's issue is dedicated to the personnel who are battling cancer and those we've lost to the fight. By now, it should be clear that in today's firefighting environment, cancer is a real threat. There are numerous studies that are raising the cancer awareness level and the risk that exist. Firefighters are exposed to products of combustion such as polycyclic aromatic hydrocarbons [PAHs], particulate, asbestos and chemicals in firefighting foams, flame retardants and diesel exhaust. Let's not forget about other hazards such as sleep deprivation and ultraviolet radiation. As a reminder, these chemicals and particulates enter our bodies via inhalation and dermal absorption. Although we have some of the best PPE to reduce exposures, there are limitations in design. Furthermore, if not worn correctly, not fit properly, not properly maintained, or contaminated the exposure risk is greater. There is no silver bullet to prevent cancer, but there are numerous small things that we can do to increase resiliency. So, ask yourself, am I doing everything I can to protect myself and my team?

**Battalion Chief Brian Edmonston
Health and Wellness Section**





UNFORESEEN CIRCUMSTANCES

CAPTAIN BARRY MAHAM

My name is Barry Maham and I have been with FCFRD for over 23 years. Prior to being hired, I was a Volunteer at both Lorton and Dale City. During my career, I was a medic for 10 years, TROT for 20 years, and USAR for 10 years. I have been an adjunct instructor for Basic Training for 16 years and Field Training for 13 years.

I remember being a young firefighter and hearing the senior firefighters talk about our increased risk for cancer, but I did not think about what I could do to prevent it from happening to me. I was in my early twenties and wanted to run calls and train. In my mind, cancer was something you get when you are old and retired. I thought I would be lucky to even live that long!

Summer 2021, our union Local 2068 offered a cancer prescreening. Now being older and involved with FRA training and TROT/USAR, I had some concern in the back of my mind, so I signed up. At the time I was 46 years old, healthy, and on no medications. The results came back that my spleen was enlarged. This led to a series of doctor appointments and procedures. In November, I developed a DVT in my right leg and then a week later, I was diagnosed with colon cancer. During surgery, they discovered I had a distal tumor classifying me as stage four and that I would require chemotherapy.



WHAT I ASK OF MY FELLOW FFs

- Wear your SCBA, even on the little calls.
- Decon your PPE, even after the little calls.
- Shower and change your uniform as soon as you can, even after the little calls.
- Ensure the exposure report is complete.
- Complete a Will or start a Trust.
- Have a medical directive.
- Have an Emergency Saving Fund.
- Update beneficiaries (life insurance, 457, HSA).
- Join Local 2068 and ensure you sign up for disability insurance.
- With both Corvel and your insurance, ask for a case manager to assist you.
- Establish a relationship with doctors outside of OHC and schedule appointments at a younger age than that recommended to the general public.
- If you are diagnosed with cancer, contact Virginia Firefighter Cancer Support Network ASAP.

WHAT I EXPERIENCED

- The brotherhood in the fire department between retirees and active members is alive and well.
- Getting a second opinion.
- Using a case manager to help navigate the system and get procedures and/or appointments approved.
- Waiting longer to get an appointment with your primary care physician because of not visiting within the past year.
- Doctor's office having openings for a procedure this week or next, but they won't schedule because our insurance takes longer to approve.
- Scheduling an appointment in three weeks and the week of your appointment the insurance company denies the procedure.
- Being told you have an aggressive tumor, but the office takes weeks to schedule and then the appointment is over a month out.
- Over nine months Corvel still hasn't approved my case.
- Paying out of pocket thousands of dollars for medical expenses.
- The day before surgery, the hospital calls and wants \$4k before you show up.
- Needing a procedure that all local hospitals perform but insurance wants you to drive thirty minutes to some other facility.

Those of us in the department with cancer will never know if one event or multiple exposures lead to us getting cancer. I do wonder what changes I could have made to reduce my exposure. My hope is the department will constantly monitor procedures and update policies to help reduce our exposure. Each Battalion or shift can ensure things are getting done such as decon, cleaning gear, showering etc. If not, I want each firefighter to think about the job and how they can reduce their own exposure. You must make changes to protect yourself.

I have had tremendous support from my neighborhood Hallowing Point, and the South County school and athletic family. I also have had overwhelming support from Fairfax Firefighters; the cards, emails, and phone calls that I have received from retirees and active firefighters brought tears to my eyes and happiness to my heart many times. For the brothers and sisters that have cancer that called and shared their own experiences, it too helps.

I want to say THANK YOU to everyone that had me and my family in their thoughts and prayers.



LOW BACK PAIN AND CANCER AWARENESS

BY DR NATHAN PIERCE, PT, DPT, OCS

There are several features that Physical Therapists screen for when determining the potential source of a patient's pain. Most often, the pain that patients are experiencing is due to a musculoskeletal cause such as bone, tendon, cartilage, ligament, discs of the spine, and soft tissue such as muscle. These tissues will often present in a relatively straightforward and consistent manner. Sometimes symptoms experienced in the extremities can be coming from the spine or from a seemingly unrelated area of the body. Even so, this will be relatively predictable. When evaluating a patient, we look for mechanical pain. Pain that is mechanical in nature means that it is reproducible in a consistent way. This means that you can consistently reproduce your pain with posture, position, and movement as well as during or after sustained activity. There are also many red flags that we screen for based on a subjective exam. These are questions asked to the patient to rule out any serious underlying pathology that is not musculoskeletal in nature. This includes infection, systemic diseases, and cancer.

A cluster of 4 questions can serve as a 100% sensitive test to rule out cancer as an underlying cause of low back pain:

- Age > 50
- Previous History of Cancer
- Unexplained Weight Loss (>10 lbs in 3 months)
- Failure to improve or respond after 1 month of treatment

If all 4 items do not apply to you, it is highly unlikely that the symptoms you are experiencing in your low back are attributed to cancer.

If you do have one of the above red flags, a spine specialist is not necessarily immediately warranted. Instead, lumbar spine radiographs and lab work (erythrocyte sedimentation rate) would be the appropriate next step as these two tests can also rule out cancer-causing low back pain with 100% sensitivity. In general, the prevalence of low back pain caused by cancer is extremely low.

There are other symptoms to be cognizant of, which may accompany your pain that may indicate that your symptoms are not musculoskeletal in nature:

- Relentless night pain
- Non-mechanical pain; unable to assume a position that alleviates symptoms.
- Night sweats
- General malaise

If you experience any of these symptoms, it is best to be evaluated. Physical Therapists are trained to screen for and identify anything that may indicate a non-musculoskeletal cause of pain, including cancer and will be able to refer you to the necessary provider for further diagnostics and testing. There is a mnemonic used to remember cancers that have a higher prevalence of metastasizing to bone; PB KTLL or "Lead Kettle."

Prostate
Breast
Kidney
Thyroid
Lymph
Lung

THINK OF YOUR BODY LIKE IT'S A CAR

BY JAKE PATTEN, SCCC, TSAC-F, USAW, PN-1

The main objective behind strength and conditioning is to reduce the risk of injury that could occur in our every day lives. One of the most important, if not the most important, concepts within the strength and conditioning umbrella is a person's ability to be mobile.

When I speak to my tactical athletes about their bodies, I like to use the automobile (see what I did there?) as the analogy for many things. The tires and axles are your hands, feet, arms, and legs. The engine can be your heart and lungs. The point being, that to keep your car operational and running smoothly, the owner must take it in to get it inspected and given maintenance from time to time. Now, think of your body in the same way; we need to be mobile and flexible to be able to move and operate in an efficient way, just like a car.

The beautiful part of it all is that mobility and "joint lubrication" can be used in many facets of your daily routine. Before a workout or a run can greatly increase your ability to workout more efficiently and/or run better as well. The same thing can be said for those experiencing a hurt, an injury, and even sickness. The whole concept behind working on your mobility is to challenge your joints and your mind to experience better ranges of motion and capabilities in movements you do daily and movements you have not yet tried.

There are many studies that have linked people who have cancer, and other types of diseases or sicknesses, who partake in daily mobility and fitness-based regiments that have shown improvement in their quality of medical care, shorten the average stay at the medical center, and reduced health care utilization at hospitals.

Be sure to explore your body's capabilities with some simple mobility exercises, like a few of these:



BIRD DOGS

Begin on all fours in the tabletop position, place your knees under your hips and your hands under your shoulders, maintain a neutral spine by engaging your abdominal muscles, and extend your right arm and left leg away from each other, keeping your shoulders and hips parallel to the floor, lengthen the back of your neck and tuck your chin into your chest to gaze down at the floor, hold this position for a few seconds squeezing your glutes and delts, then lower back down to the starting position, then alternate to other arm and opposite leg.



WORLDS GREATEST STRETCH

Start in kneeling lunge position, right leg forward, foot flat on floor, knee bent 90 degrees, left leg extended behind you, left ball of foot on floor; hands on floor inside right leg, back flat, then lift right hand off floor, bend right elbow 90 degrees and reach elbow toward instep of right foot, reach as far as you can without rounding back, return left palm to floor, then, rotate torso to right, pressing through left palm and lifting right hand to ceiling, palm out, eyes follow (internal torso rotation).



ROLLING 90-90s

Sit on the floor and bend one leg in front of your body with your hip rotated out, position it so your lower leg and knee are resting on the ground, your leg should form a 90-degree angle, and your ankle should be neutral, so your foot is pointing straight, position your other leg beside you with your hip rotated inward and your shin and ankle on the ground. Bend your knee so your leg forms a 90-degree angle, your back knee should be in line with your hip, and your ankle should be neutral, from here explore your limitations by lowering chest to knee/hip area, you can also walk your hands back towards your hip, engaging leg/hip/back muscles. Hold 5 seconds.

NUTRITION FOR CANCER PREVENTION

BY MEGAN LAUTZ, MS, RD, CSCS

It's no secret that eating well can have an impact on cancer prevention. The challenge? A google search of nutrition for cancer prevention can get crazy fast! Alkaline diets and eliminating your favorite foods is not required to prevent cancer. This can lead to diet burnout and lack of consistency. Consistently eating well is key to health, meaning finding balance is the goal. To help strike balance and help prevent cancer, check out the foods to add in and cut back on below.



ADD MORE

Variety of Fruits and Vegetables

The pigments that provide color to fruit and veggies play an important role as antioxidants. Antioxidants prevent cancer by neutralizing free radicals that cause cell damage. Including dark green, red, orange, and even white produce can provide an array of cancer-preventing antioxidants.

High Fiber Foods

Fiber is found in fruits, veggies, whole grains, and beans. Fiber is linked to a lower risk of colorectal cancer. Fiber is also filling and may reduce your risk of weight gain, which is associated with a higher risk for cancer. Fiber also impacts gut bacteria, which may play a role in cancer prevention. Unfortunately, the main benefits of fiber are found in food not supplements. Consider adding fruit as a snack or oatmeal for breakfast.

Vitamin D

Vitamin D is often associated with bone health, but it may also reduce cancer risk. Dietary sources include fatty fish, mushrooms, or fortified juice and cereals. Unfortunately, studies do not suggest that Vitamin D supplementation reduces cancer risk. If supplements were recommended at your physical, continue supplementation while adding foods that are high in Vitamin D.



CUT BACK ON

Alcohol Intake

Alcohol use accounts for 6% of all cancers, and the recommended amount is likely less than you think. Moderate alcohol use is considered 1 drink per day for women and 2 drinks per day for men. More than 14 drinks per week is considered heavy drinking. Serving size is classified as 12 oz beer, 5 oz wine, or 1.5 oz liquor. Some research has shown that consuming any amount of alcohol increases the risk of some types of cancer. Drinking more than 14 drinks per week may not mean that you have a clinical dependence on alcohol, however, you may want to evaluate your intake within the context of your health goals.

Processed Meat

Processed meats have been cured, smoked, salted, or fermented to enhance flavor. This includes bacon, sausage, bologna, hot dogs, and deli meat. The International Agency for Research on Cancer (IARC) has grouped processed meat into Group 1, or "cancer-causing to humans" based on an increased risk for colorectal cancer. Unfortunately, there are no suggested servings per week that is considered "safe." The recommendation is to eat sparingly or not at all if cancer prevention is your goal. Note that turkey and chicken-based sausage or bacon are classified as a processed meat by the IARC.

BIOMARKER CANCER SCREENING ONETEST

BY DR. DONALD STEWART



A quick refresher on OneTest: OneTest is a blood test and machine learning algorithm that was developed to aid in the detection of multiple cancers. The machine learning algorithm (AI) was developed by 20/20 Gene Systems, Inc. and Chang Gung Memorial Hospital located in Taiwan. Much of the development of this science comes from Japan, Korea, and China where most of the population is tested regularly to create the sampling numbers needed and subsequent probability scoring.

Accuracy of Biomarkers Alone?

Using protein biomarkers found in blood as a method to detect cancer is cutting edge technology. Think about how OHC currently screens for prostate cancer checking for elevated PSA scores in your blood. This is in essence what OneTest is attempting to do, but with cancers in the liver, lung, prostate, ovaries, biliary tract, pancreas and colon.

To explain a little more, biomarkers are proteins in the blood which are associated with tumor growth, but are also commonly elevated by benign (non-cancerous) medical conditions. For instance, the biomarker CA19-9 can be associated with pancreatic cancer, but is also found with other diseases such as gall stones or a blockage of the bile duct. In the end, the intent is to find these cancers earlier when treatments are very effective.

Accuracy of OneTest?

While there is compelling evidence that machine learning algorithms that produce probability scores is effective at predicting cancer, the accuracy of the OneTest cannot be predicted because the US population has not been sufficiently studied in order to generate enough data. As mentioned above, there are also clinical factors that help with creating accurate probability scores such as age, gender and genetic history, and more of these personal history questions can improve the results.

What we did over the last year?

After the FCFRD was awarded the Assistance to Firefighter Grant (AFG), Health and Wellness and OHC have been implementing and managing a cancer screening program over the past year, and to-date we have tested over 1,500 personnel which includes City of Fairfax Fire and Rescue Department. As the study winds down, we will have eventually evaluated more than 1,600 personnel.

What we found?

During the grant program, we found around 25 employees with elevated "biomarkers" that we're continuing to track. However, it's important to note that we have not found any new cancer cases. What this means is that they have a probability score of greater than 0 and less than 40. The higher the score, the greater chance of developing cancer within one year. Remember that this test is a snapshot in time and we are continuing to follow the individuals through serial testing as well as sending them out for more advanced medical screening such as a CT scan, MRI, and/or X-ray. If we definitively diagnose an employee with cancer, we will engage the medical community for the most appropriate treatment.

What did the data say?

Males

A total of 1,073 tests were performed for male subjects (20-74 years of age), of these 627 (58%) were from men 40 years and older. 33 males (3.1%) had OneTest scores ≥ 4 ; of these, 31 men were 40 years and older (4.9% of the ≥ 40 -year-old population).

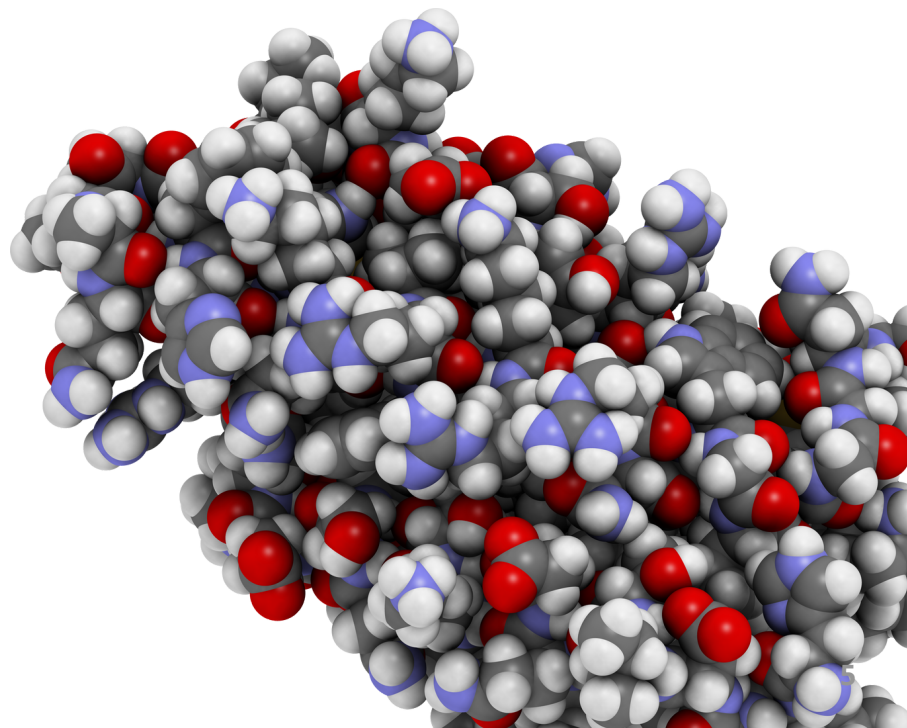
Females

A total of 149 tests were performed for women (21-60 years of age), of these 75 (50%) were from women 40 years and older. 29 females (19.5%) had OneTest scores ≥ 4 (see Table 1); of these, 25 were 40 years and older (33% of the ≥ 40 -year-old population).

Conclusion

Overall, OneTest appeared to be more useful in males than in females due to the number of men tested, which was 7x higher (1,073 vs. 149) and, as such, likely a better statistical sampling for males. The population tested was relatively young, although most detected cases were above 40 years of age. The best response to an elevated test is vigilance and awareness.

It is important to note that personnel in the fire and rescue service do have reason to be concerned about elevated cancer risks. The most definitive study done to-date from 2014 (conducted by NIOSH) revealed that firefighters have elevated risks of dying from cancer (above the normal population), ranging from 40% (esophageal and oral cavity) and up to a 100% increase (mesothelioma). Furthermore, higher abnormalities were found in a population of 30,000 firefighters as noted with abnormalities in the respiratory, digestive, and urinary systems when compared with the general U.S. population.





PSYCHOSOCIAL SUPPORT OPTIONS FOR PEOPLE WITH CANCER

DR. LASHANNA NEWTON, EDD, LPC, CRC

According to the American Cancer Society (n.d.), having cancer affects all aspects of life. These responses are referred to as the psychosocial effects of cancer. Psychosocial problems may include but are not limited to trouble coping with having cancer, problems with making decisions, concern about not being able to do what you enjoy, problems talking about how you are feeling, grief, and fear of death and dying. Some people have more specific mood changes, such as anxiety, depression, and distress.

Psychosocial support can include counseling, psychoeducation, spiritual and group support, and other services. These services may be provided by mental health and medical providers as well as clergy. Additionally, there are options of support groups and one-on-one counseling. Support groups bring together people with similar situations. In these groups, people can share their concerns and learn how others have coped. One-on-one counseling might be a good option if your feelings are keeping you from doing your normal activities. Individual counseling gives you a chance to focus on your own feelings and concerns.

It is normal to need some extra help when you're dealing with cancer. There are teams of experts who understand how cancer affects a person and their loved ones. Be sure to talk to your cancer care team about any psychosocial problems you are having, so they can help you find the right support.

For more information, please reference the following article: Psychosocial Support Options for People with Cancer. (n.d.). <https://www.cancer.org/>. Retrieved July 11, 2022, from <https://www.cancer.org/>



GOD'S RIT

BY THE FIRE CHAPLAINS

Whether you're going through Level 1 Basic Training or through Firefighter 1 and 2, you are always taught basic survival on the incident scene and how to look after your teammates. One of the most important concepts we teach is that of the Rapid Intervention Team or RIT. They break out their tools and their RIT packs and diligently stand by, waiting to respond immediately, professionally, and passionately to any request for help by a firefighter who is lost, disoriented, injured, or low on air. And at the end of their duty, whether it's having made a complicated or daring save or just standing by waiting to be called, the RIT members' only expectation for "payback" is a pat on the back and a "thank you."

This concept of RIT, however, extends well beyond the fire ground and well beyond the department in which we serve. Particularly in this cadre that we're all a part of, taking care of one another is paramount if we're going to get through this high-speed thrill ride called life. We are each other's RIT and it's a full-time responsibility.

Over the recent months, we chaplains have been engaged with so many of you who are intimately involved in so many caring endeavors. We've watched how you support ailing comrades, embraced families who have loved ones deployed, embraced those who have lost family members, and playfully congratulated shift mates who have been promoted or recognized for their achievements. It is a true testament to loving one another. That is why in this line of work, joy and grief, happiness and sorrow, all go hand in hand and all are to be shared. This is a collective, where the combined power of all can come to bear and bring light to any darkness that befalls us.

Illness and injury befall all of us in some way. What we must focus on is not the trial that we face but, rather, the path and how we walk it. There will be victories and setbacks along this path. However, we are never alone as we travel it. No matter what challenges we face, God's RIT is standing by to reach out and help us.

As we continue through our struggles and journeys on life's road, let us all remember the words of Shakespeare in his work, Henry V:

**"We few, we happy few, we band of brothers;
For he today that sheds his blood with me
Shall be my brother;"**

Through these words, Shakespeare brought to our hearts the expectation that all men and women who show bravery enough to put on the uniform, have each other's backs and fight together as comrades in service, are forever bound together as family. To love and care for your brothers and sisters as you have done so well and so nobly is absolutely what we are called to do.

We pray that God grants you and your families peace, health, and joy.



BEHAVIORAL HEALTH

SERVICES (FREE!)

The Fairfax County Fire and Rescue Department is committed to the overall wellbeing of their employees, which includes having access to Behavioral Health services. The Behavioral Health Team is located at the Fairfax County Public Safety Occupational Health Center and is responsible for coordinating and supporting behavioral health care within the department as well as coordinating referrals for necessary services outside the department. These services are free and include but are not limited to:

- Short-Term Therapy
- Crisis Intervention
- Leadership Consultations
- Wellness Checks
- Psychoeducation
- Station Visits

Additional resources include the Peer Team, Chaplains, and Certified Therapy Dogs.

Please contact us directly for more information or to request services.



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Individual plans
Strength, conditioning, &
mobility assessments
FMAP consultations
Station workouts
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Services

Nutrition Coaching
Smoothie Demos
Healthy Lunch or
Dinner Demos
Mobility Demos
Station Workouts



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Onsite Physical Therapy
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Wellfit on Tues, Thurs



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**FITNESS, NUTRITION,
& HEALTH**

