



TEXAS FIRE CHIEFS ASSOCIATION
HEALTH & WELLNESS GUIDE
FIREFIGHTER CANCER BASICS

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INTRODUCTION

At one time, heart attacks, strokes, and other cardiovascular-related illnesses were the leading cause of firefighter deaths in the U.S. To combat those issues, the fire service developed initiatives that promoted nutrition, physical fitness, and an overall healthier lifestyle both on and off-duty. These efforts have led to a decrease in cardiovascular illnesses and they are no longer the leading cause of deaths of firefighters. Our greatest concern today is firefighter cancer. Although cancer in the fire service is not a new threat, the rate at which firefighters are diagnosed and succumbing to cancer is rising. According to the IAFF, at the 2022 IAFF Fallen Fire Fighter Memorial, almost 75% of the names added to the wall belonged to active firefighters who had lost their battle to job-related cancer.

The Firefighter Cancer Support Network states that across the U.S., career firefighters are 9% more likely to be diagnosed with cancer, and 14% more likely to die from cancer than the general population. This information paired with the hazardous environments that all firefighters are exposed to on a daily basis place us all at a great disadvantage each day that we show up to work at a fire station. The known dangers include toxic chemicals and carcinogens encountered in the products of combustion, diesel exhaust in our fire stations and on scenes, and the latest threat of carcinogenic material in our own personal protective equipment.

Our greatest resources to combat cancer in the fire service are information and education. These resources are available in multiple areas but not everyone knows where to find them. This Guide is created to assist Texas Fire Departments in efforts to maintain a safe and healthy workforce. The information listed herein should serve as an initial guide to cancer in the fire service but, it is not all encompassing.

Stay Safe.

Disclaimer: The products, vendors and organizations referenced in this guide are for informational purposes only, as they relate to the associated topic(s). This guide is not intended to endorse any products, vendors or organizations.

TERMINOLOGY

Cancer – a disease caused by an uncontrolled division of abnormal cells in a part of the body

Cancerous or Malignant – tumors that can spread into nearby tissue, glands or other parts of the body.

Noncancerous or Benign– tumors that are localized and do not typically spread to other parts of the body.

Precancerous – refers to cells that have the potential to become cancerous.

Tumor – a solid mass of tissue that forms when abnormal cells group together. Tumors can affect bones, skin, tissue, organs and glands. May or may not be cancerous.

Cyst – a small sac that may contain fluid, air or solid material. Majority of cysts are not cancerous.

Biopsy – the removal and examination of tissues from the body. Often conducted to determine whether a tumor is malignant or benign.

Prognosis – a prediction of the outcome of a disease, chances of recovery.

Oncologist – a doctor who specializes in diagnosing and treating cancer

Pathologist – a doctor who specializes in identifying diseases by studying cells and tissues under a microscope.

In situ – (localized) cancer is still in its original location and has not spread to nearby tissue.

Metastasis – cancer growth and spread to other parts of the body, cancer cells can travel through the blood or lymphatic system to affect lymph nodes and body organs.

Sarcoma – cancer that develops in tissues that support and connect the body, such as bone, cartilage, fat, muscle and blood vessels.

Carcinoma – cancer that begins in skin or tissue that line internal organs.

Carcinogen – any substance that causes cancer.

PFAS – group of manmade chemicals used in a vast number of consumer products. Often referred to as “forever chemicals” or “everywhere chemicals”.

Cancer Stage Grouping – diagnosed status of a cancerous tumor in the body. Specific to the individual.

- **Stage 0** – cancer is still located in the place that it started. It has not yet spread and is often curable. Surgery can usually remove the entire tumor.
- **Stage I** – cancer has not grown deeply, spread to the lymph nodes, or other parts of the body. Often called early-stage cancer.
- **Stage II, and III** – both stages describe cancer that has grown more deeply into nearby tissue and may have spread to lymph nodes or other parts of the body.
- **Stage IV** – cancer has spread to other organs or other parts of the body. May also be called advanced or metastatic cancer.

Surgery – can be used to diagnose and/or treat cancer. Usually involves the attempted removal of cancer tissue from the body. May be effective alone or in combination with other treatment.

Chemotherapy – using drugs to treat cancer, may be used to treat tumors that cannot be removed by surgery.

Radiation Therapy – localized treatment using high-energy beams targeted directly at the cancer. Not effective in treating cancers that have spread to other parts of the body.

Proton Therapy – advanced type of radiation therapy that utilizes pencil-beam scanning to pinpoint and deliver high-energy proton beams directly to tumors, minimizing damage to healthy cells and tissue.

CAR-T Therapy – use of genetically altered immune cells (T-cells) to locate and destroy cancer cells in the body.

Immunotherapy – use of drugs designed to boost the body's own immune system and defense mechanisms to fight cancer at the cellular level.

Blood and Bone Marrow Transplants (BMT) – treatment options for patients diagnosed with leukemia, aplastic anemia, lymphoma, multiple myeloma, immune deficiency disorders, and some solid tumors.

For a comprehensive dictionary of cancer terms, visit:

<https://www.cancer.gov/publications/dictionaries/cancer-terms>

FIRE SERVICE CANCER STATISTICS

According to the International Association of Fire Fighters (IAFF), occupational cancer has accounted for the majority of firefighter deaths from 2002-2021. During this period, cancer deaths accounted for 65% of the LODDs for IAFF members. Only 15% were attributed to cardiac events during this same period.

Year	Total	Cancer	Other LODD	% Cancer
2002	84	40	44	47.6
2003	94	58	36	61.7
2004	102	57	45	55.9
2005	122	67	55	54.9
2006	115	70	45	60.9
2007	132	73	59	55.3
2008	129	84	45	65.1
2009	128	73	55	57.0
2010	128	82	46	64.1
2011	152	104	48	68.4
2012	141	94	47	66.7
2013	179	112	67	62.6
2014	170	118	52	69.4
2015	157	114	43	72.6
2016	161	121	40	75.2
2017	195	151	44	77.4
2018	190	145	45	76.3
2019	207	156	51	75.4
2020	167	111	56	66.5

The National Cancer Institute estimates that in 2023, there will be 1,958,310 new cases of cancer. Of these new cases, it is also estimated that 609,820 will die from the disease. These numbers represent the general public. As previously stated, firefighters are 9% more likely to develop cancer, and 14% more likely to die from cancer.

Common Types of Cancer	Estimated New Cases 2023	Estimated Deaths 2023
1. Breast Cancer (Female)	297,790	43,170
2. Prostate Cancer	288,300	34,700
3. Lung and Bronchus Cancer	238,340	127,070
4. Colorectal Cancer	153,020	52,550
5. Melanoma of the Skin	97,610	7,990
6. Bladder Cancer	82,290	16,710
7. Kidney and Renal Pelvis Cancer	81,800	14,890
8. Non-Hodgkin Lymphoma	80,550	20,180
9. Uterine Cancer	66,200	13,030
10. Pancreatic Cancer	64,050	50,550
-	-	-
Cancer of Any Site	1,958,310	609,820

SOURCE: seer.cancer.gov

2023 Texas Statistics

Source: Texas Oncology

- More than 139,100 new case cases of cancer are estimated to be diagnosed in Texas.
- Approximately 44,140 Texans are expected to die of cancer, making it the third leading cause of death behind heart disease and COVID-19
- Prostate cancer is the most commonly diagnosed cancer in men, other than skin cancer. Texas ranks fourth in the U.S. for estimated new cases and third in expected cancer deaths due to prostate cancer.
- Breast cancer is the most commonly diagnosed cancer in women, other than skin cancer. Texas ranks third in the U.S. in estimated new cases and second in expected cancer deaths due to breast cancers.
- Lung cancer is the third most commonly diagnosed cancer in Texas for men and women combined. Texas ranks third in the U.S. in estimated new cases and expected deaths due to lung cancer.
- Colorectal cancer ranks fourth as the most commonly diagnosed cancer for men and women combined. Texas ranks second in the U.S. in estimated new cases and deaths due to colorectal cancer.
- More than 5,530 cases of melanoma skin cancer will be diagnosed in Texas this year. Basal cell and squamous cell are much more prevalent.

Multiple studies over the years have tied specific cancers to the job of firefighting. The National Institute of Occupational Safety and Health (NIOSH) conducted a multi-year study that highlighted a link between firefighting and an increased risk of developing cancer. NIOSH found that the majority of cancers found in firefighters were digestive, oral, respiratory, and urinary. The study listed the most common cancers associated with firefighting but there are additional cancers as well. It is important to note that this comprehensive study was conducted in 2010 and the threats to firefighter health and safety have significantly increased since that time.

Increased cancer risks for firefighters identified by 2010 NIOSH study:

- | | |
|--------------------------|-------------------------|
| ▪ Testicular Cancer | 2.02 times greater risk |
| ▪ Mesothelioma | 2.0 times greater risk |
| ▪ Multiple Myeloma | 1.53 time greater risk |
| ▪ Non-Hodgkin's Lymphoma | 1.51 times greater risk |
| ▪ Brain Cancer | 1.32 times greater risk |
| ▪ Prostate Cancer | 1.28 times greater risk |
| ▪ Colon Cancer | 1.21 times greater risk |
| ▪ Leukemia | 1.14 times greater risk |
| ▪ Esophageal Cancer | 1.16 times greater risk |

TOXIC CHEMICALS AND CARCINOGENS

It is beyond the scope of this guide to provide detailed information on toxic chemicals and carcinogens. This material will be covered in additional guides in the future. Below are resources for all personnel to familiarize themselves with carcinogens that present a prospective danger to firefighters during the course of work.

- NFPA Fireground Exposure of Firefighters: A Literature Review 2021
<https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/RFFiregroundExposureFFs.ashx>
- Carcinogenicity of Occupational Exposure as a Firefighter (download article) 2022
[https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045\(22\)00390-4/fulltext](https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(22)00390-4/fulltext)
- Firefighters and Cancer Risk
<https://www.cancer.org/cancer/risk-prevention/chemicals/firefighting.html>
- Evaluation of Dermal Exposure to Polycyclic Aromatic Hydrocarbons in Fire Fighters (NIOSH)
<https://www.cdc.gov/niosh/hhe/reports/pdfs/2010-0156-3196.pdf>
- 10 Considerations Related to Cardiovascular and Chemical Exposure Risks (FSRI 2017)
https://d1gi3fvbl0xi2a.cloudfront.net/files/2021-07/2017_SUP_FIR_A1-A16_Globe.pdf
- Per- and Polyfluoroalkyl Substances in New Firefighter Turnout Gear Textiles (NIST 2023)
<https://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.2248.pdf>
- Firefighter Cancer Support Network (FCSN) – Print Materials
<https://firefightercancersupport.org/print-materials/>

CANCER PREVENTION

“Prevention is the best medicine”. This is a true statement in any case but it is extremely relevant to the fire service.

Cancer prevention can take many forms and every department is unique in their needs and approaches. Listed here are common practices in use across the fire service. It is imperative that each department implement a cancer prevention program based on their policies, operating guidelines, and available resources.

▪ **On-Scene Decontamination**

Studies have shown direct cancer risks from products of combustion. This may occur at structure fires, car fires, trash fires, etc.....

Although we cannot avoid products of combustion, we can take measures to reduce and minimize contamination after a fire. On-scene gross decontamination is an effective method used to reduce the amount of contaminants in turnout gear. Gross decontamination is the first step in the decontamination process and should always be followed up with the proper washing of PPE garments and accessories, and personnel showering once they have returned to quarters.

In a recent study, published in the Journal of Occupational and Environmental Hygiene, Kenneth W. Fent and his colleagues documented the effectiveness of fireground decontamination practices. The study focused on the level of contaminants found in turnout gear and accessories after differing decontamination practices. The results:

- Using water, soap and a brush to decon personnel after a fire resulted in the removal of 85% of the contaminants
- Dry brushing resulting in the removal of 23% of contaminants
- Air-based decon resulted in an increase of 0.5%
- In a follow up study, Water only decon displayed mixed results

You can view the entire reports in the links below, along with several other resources to assist with on-scene decontamination.

- Contamination of Firefighter PPE and Skin and the Effectiveness of Decontamination Procedures – Journal of Occupational and Environmental Hygiene
<https://www.tandfonline.com/doi/full/10.1080/15459624.2017.1334904>
- Pilot Study on the Efficiency of Water-Only Decontamination for Firefighters’ Turnout Gear
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7923952/>

- On-Scene Gross Decontamination Video
https://www.youtube.com/watch?v=i_Sg5ZM7rII
- FCSN Reduce Your Exposure to Carcinogens Poster
https://firefightercancersupport.org/wp-content/uploads/2021/01/FFCancer_ReduceExposure.pdf
- FCSN Post-Fire Suppression Interventions to Reduce Exposures Poster
https://firefightercancersupport.org/wp-content/uploads/2021/12/FFCancer_Interventions_v2.pdf
- Example SOP for On-scene Decontamination
[UFFSOPDeconPolicy.ashx \(nfpa.org https://www.nfpa.org/-/media/Files/Membership/member-sections/Metro-Chiefs/Urban-Fire-Forum/2017/UFFSOPDeconPolicy.ashx\)](https://www.nfpa.org/-/media/Files/Membership/member-sections/Metro-Chiefs/Urban-Fire-Forum/2017/UFFSOPDeconPolicy.ashx)

▪ **Personal Protective Equipment**

The proper use, storage, and cleaning of personal protective equipment (PPE) is a primary line of defense in cancer prevention.

PPE Storage – avoid storing any contaminated gear including SCBA within apparatus cabs, or in personal vehicle passenger compartments. Bunker gear should not be worn or brought into the living quarters of a fire station. Contaminated gear should always be bagged and transported outside of passenger compartments, for cleaning.

- Store colored trash bags (red, yellow, black, etc...) to signify contaminated contents
- Transport contaminated gear in an outside compartment, trunk, or apparatus hosebed
- Contaminated gear should be cleaned using a commercial grade washer, as soon as possible, following a fire incident

Second Set of PPE – ideally, each firefighter should possess a second set of PPE. This allows contaminated gear to be removed from service and commercially washed, as the second set of gear is placed in service. If assigning a second set to each firefighter is not feasible, then maintaining a diverse stock of reserve PPE will suffice. Personnel can be placed in reserve gear until their primary gear is cleaned and returned. Second sets and reserve sets must still comply with NFPA standards and expiration dates.

Particulate Hoods – these hoods serve as a barrier to carcinogens in an area that has historically been vulnerable. Most particulate hoods boasts greater than 99.9% filtering for particulates in the 0.1 to 1.0 micron range. There are several manufacturers of particulate hoods so you should have no trouble one to suit your needs.

SCBA Use During Overhaul – We know today that the hazards of smoke and other products of combustion do not disappear once the fire is out. Off-gassing continues to be an issue until the area is completely cooled and well ventilated. To this effect, it is recommended that SCBA use continue through salvage and overhaul in order to provide the best respiratory protection to all firefighters. This recommendation also extends to fire investigators. The Firefighter Cancer Support Network states a clear message in “If you smell smoke, you are being exposed”.

- FCSN SCBA Through Overhaul
https://firefightercancersupport.org/wp-content/uploads/2020/12/FFCancer_SCBAthroughOverhaul.pdf
- FCSN Offgas Timeline
https://firefightercancersupport.org/wp-content/uploads/2021/12/FFCancer_Offgas.pdf

▪ **Clean Cab Concept**

The Clean Cab Concept has gained acceptance and popularity over the last few years as an effective means to prevent exposure to carcinogens. The concept involves prohibiting any items used for firefighting to be stored inside of the apparatus cab. This includes tools, SCBA and bunker gear. The one exception is that some departments allow clean bunker gear in apparatus cabs. If this is allowed, it must be monitored for proper compliance.

Clean cabs can be specified during ordering or they can be retrofitted. Compartment space is always a concern and finding areas to store SCBA and bunker gear can be challenging. Crews will also need to become comfortable until they arrive on scene to put on their SCBA and/or bunker gear. Some crews see this as a delay in operations but the reality is that it takes just a few seconds to accomplish. Seconds do matter, but so does the health of our firefighters.

- FCSN Clean Cab Concept
https://firefightercancersupport.org/wp-content/uploads/2022/12/FFCancer_CleanCab-2.pdf
- FireRescue1 - Getting Your Apparatus Clean Cab, or “Cleaner Cab” Ready
<https://www.firerescue1.com/fire-products/apparatus-accessories/articles/getting-your-apparatus-clean-cab-or-cleaner-cab-ready-8BroJr8F8Zft2G3a/>
- St. Petersburg Fire Rescue – Clean Cab Procedures and Response Policy
https://firefighterhealthsafety.org/wp-content/uploads/St-Petersburg_Pol224-Clean-Cab-Procedures-and-Response.pdf

▪ Fire Stations

Fire scenes are not the only areas of concern when it pertains to carcinogens. Fire stations also present their own concerns but there are items which can be addressed to minimize exposures and maintain healthy living areas.

Clean Zones – creating Hot, Warm and Cold Zones within your fire stations can assist in keeping contaminated items out of the living areas. According to the FF Cancer Support Network “Harmful chemicals can exist in the fire station from diesel exhaust, returning from a fire incident where contaminated PPE’s, and equipment are transported back to the fire station”. New fire stations are incorporating this concept into their designs but this can be accomplished in existing facilities as well.

Firefighter Cancer Support Network recommendations for creating fire station zones:

Hot Zone:

- *Treat apparatus floor as a hot zone because of diesel exhaust, traffic from contaminated boots, contaminated PPE, tools and equipment, etc.*
- *Items that should not be located in the hot zone include but not limited to:*
 - *Ice machines or refrigerators.*
 - *Workout equipment.*
 - *Recliners/loungers.*
- *PPE storage should be situated to prevent exhaust contamination.*
- *Tool maintenance and checks should be performed outdoors, to prevent exposure.*
- *Apparatus bay floors should not be dry swept, blown out with a leaf blower or compressed air. (Can make diesel soot particulates airborne).*

Warm Zone:

- *Where handwashing occurs prior to entering the living areas of the fire station.*
- *PPE storage should be stored in a separate area with its own ventilation system.*
- *Washer/Extractors should be in the warm zone.*
- *Cleaning of contaminated PPE and equipment (SCBA, radio, gloves, etc.) should take place here.*

Cold Zone (living areas or offices):

- *No fireground contaminants, or diesel exhaust, should enter this area from the air, personnel, or equipment.*
- *PPE should not enter cold zones.*
- *Do not prop open doors between living or office areas and the apparatus room.*

- FEMA Safety and Health Considerations for the Design of Fire and EMS Station, 2018. (Chapter 6: Specific Health Considerations)
https://www.usfa.fema.gov/downloads/pdf/publications/design_of_fire_ems_stations.pdf

Operational Hygiene – this is a newer term that describes the mentality that supports cleaner working conditions and environments for fire personnel. The term applies to all aspects of the job including firefighting and EMS. Most departments are not familiar with the term “operational hygiene” but the concept is practiced everyday with our cleaning and sanitization protocols.

Excerpt from Rosenbauer brochure - definition of Hygiene:

Hygiene - a set of measures

"Hygiene" refers to the totality of all measures that serve to prevent disease and to maintain, promote, and strengthen health. In the context of firefighting, this means not only protection against harmful substances during deployment, primarily through respiratory protection and personal protective equipment (PPE), but also protection against substances that are hazardous to health after deployment.

- Rosenbauer – Operational Hygiene From A Practical Point of View (brochure)
<https://innovation.rosenbauer.com/en/download/869/5870>

▪ Exhaust Removal Systems

Chapter 9, of NFPA 1500: Standard for Fire Department Occupational Safety, Health, and Wellness Program, states that fire departments must contain all vehicle exhaust emissions at a level of no less than 100%. The only way to accomplish this is to have a commercial exhaust system professionally installed.

Source Capture Vehicle Exhaust Systems are widely seen as highly effective in removing diesel exhaust. These systems involve hooking up a hose directly to the apparatus exhaust (source) as it enters the station and while parked in the apparatus bay. The exhaust is pulled through the hose by a vacuum system that filters the contaminants and then pumps the remaining air to the exterior of the building.

There are systems that involve devices attached to the exhaust system at all times and others that clear the entire apparatus bay through exhaust fans. Claims made by all vendors is very subjective and independent research is limited and these systems are not as common.

Each diesel exhaust removal system has its own benefits and drawbacks. The greatest drawback to most systems is cost. Retrofitting a fire station with a commercial exhaust system can be expensive. Researching which system fits your needs is essential. System vendors are more than willing to provide information and/or demonstrations of their products. Conference showrooms are a great place to view multiple products in one location and to speak with other departments that have these systems.

Here are just a few links to available Diesel Exhaust Removal Systems:

- Plymovent
https://www.plymovent.com/us/applications/vehicle-exhaust-extraction-in-fire-stations?gad=1&gclid=EAlaIQobChMI16mC3pK3ggMVRIJ_AB1GNwVvEAAYAiAAEgJk3fD_BwE
- AirVac 911
https://www.plymovent.com/us/applications/vehicle-exhaust-extraction-in-fire-stations?gad=1&gclid=EAlaIQobChMI16mC3pK3ggMVRIJ_AB1GNwVvEAAYAiAAEgJk3fD_BwE
- Nederman
<https://www.nederman.com/en-us/industry-solutions/fire-and-emergency-exhaust-extraction>
- Fume-A-Vent
<https://www.fumeavent.com/fire-station-exhaust-removal-monarch/>
- MagneGrip
https://www.magnegrip.com/?cam=ppc-g-m27893-c54616-g119371-&gclid=EAlaIQobChMI16mC3pK3ggMVRIJ_AB1GNwVvEAAYBCAAEgLa7fD_BwE
- Ward – Diesel Filter Systems
<https://warddiesel.com/>
- FireRescue1 eBook: How to Buy Exhaust Removal Systems
<https://www.firerescue1.com/fire-products/vehicle-equipment/exhaust-removal-systems/articles/how-to-buy-exhaust-removal-systems-ebook-Cwi5K4kKu5OPQgoD/>

▪ **National Volunteer Fire Council – Best Practices for Preventing Firefighter Cancer**

The National Volunteer Fire Council is a great resource for resources associated with firefighter health and safety. Although this organization focuses on providing information to volunteer and combination departments, the information presented pertains to all firefighters.

Best Practices for Preventing Firefighter Cancer is a downloadable booklet that focuses on 11 “Best Practices” for remaining safe in the fire service. These best practices are provided below, but they are explained in detail in the booklet.

- NVFC Best Practices for Preventing Firefighter Cancer
<https://www.nvfc.org/wp-content/uploads/2018/08/Lavender-Ribbon-Report-Final.pdf>

BEST PRACTICES

for Preventing FIREFIGHTER CANCER

- 1** Full protective equipment (PPE) must be worn throughout the entire incident, including SCBA during salvage and overhaul.
- 2** A second hood should be provided to all entry-certified personnel in the department.
- 3** Following exit from the IDLH, and while still on air, you should begin immediate gross decon of PPE using soap water and a brush, if weather conditions allow. PPE should then be placed into a sealed plastic bag and placed in an exterior compartment of the rig, or if responding in POVs, placed in a large storage tote, thus keeping the off-gassing PPE away from passengers and self.
- 4** After completion of gross decon procedures as discussed above, and while still on scene, the exposed areas of the body (neck, face, arms and hands) should be wiped off immediately using wipes, which must be carried on all apparatus. Use the wipes to remove as much soot as possible from head, neck, jaw, throat, underarms and hands immediately.
- 5** Change your clothes and wash them after exposure to products of combustion or other contaminants. Do this as soon as possible and/or isolate in a trash bag until washing is available.
- 6** Shower as soon as possible after being exposed to products of combustion or other contaminants. "Shower within the Hour"
- 7** PPE, especially turnout pants, must be prohibited in areas outside the apparatus floor (i.e. kitchen, sleeping areas, etc.) and never in the household.
- 8** Wipes, or soap and water, should also be used to decontaminate and clean apparatus seats, SCBA and interior crew area regularly, especially after incidents where personnel were exposed to products of combustion.
- 9** Get an annual physical, as early detection is the key to survival. The NVFC outlines several options at www.nvfc.org. "A Healthcare Provider's Guide to Firefighter Physicals" can be downloaded from www.iafc.org/healthRoadmap.
- 10** Tobacco products of any variety, including dip and e-cigarettes should never be used at anytime on or off duty.
- 11** Fully document ALL fire or chemical exposures on incident reports and personal exposure reports.

EDUCATION AND AWARENESS

Today, there is no reason for Fire Chiefs not to possess the education and awareness required to keep their personnel safe and healthy. Resources are plentiful in both of these areas and most are at your fingertips.

▪ National Firefighter Registry

The National Firefighter Registry for Cancer is a confidential network designed to track firefighter exposures and cancer diagnoses. This system uses information to track cancer diagnoses across the country and study their relationship to the information provided by each registered firefighter.

- USFA – National Firefighter Registry: The Missing Piece
<https://www.usfa.fema.gov/downloads/pdf/summit/fire-administrator-impact-on-firefighters-health-presentation.pdf>
- National Firefighter Registry for Cancer – Communication Materials
<https://www.cdc.gov/niosh/firefighters/registry/nfrcomm.html>

▪ PFAS

Polyfluoroalkyl Substances, or PFAS, have created much concern and confusion in the fire service. These substances are usually referred to as “forever chemicals” because they are known to accumulate in animals and people and they are not processed and expelled from a body easily. PFAS are manmade chemicals and are used in a vast amount of products. Most of these chemicals are used as cleaning products, water and stain repellents, non-stick coverings, or other types of product protectants. Our population is exposed to PFAS on a daily basis.

Manufacturing process, waste storage, and treatment sites also release PFAS into the air, soil, and water. The Environmental Working Group (EWG) has identified 41,828 sites in the U.S. that are known or suspected of using PFAS (Environmental Health News).

The greatest concern for firefighters, as it relates to PFAS, is in AFFF and bunker gear. These are valid concerns but the information and research surrounding the concerns are limited and vague. To complicate this further, PFAS are considered toxic to animals and humans but there is no data to suggest at what level this occurs. In the absence of information, we must assume that all levels of exposure to PFAS are toxic. Manufacturers are working towards PFAS-free products but this has proved to be challenging and it will not happen quickly. The safest way to deal with PFAS, at this time, is education and avoidance. Educate yourselves and your personnel on the dangers of PFAS and how to minimize exposure to these products.

- FCSN – PFAS and the Fire Service
https://firefightercancersupport.org/wp-content/uploads/2022/12/FFCancer_PFAS-Fact-Sheet-2022-2.pdf

- U.S. Ecology – PFAS Disposal Company (Brochure)
https://www.usecology.com/system/files/2021-10/Deep-Well_PFAS_Insert.pdf
 - IAFF – PFAS and Fire Fighter Turnout Gear
<https://www.iaff.org/pfas/>
 - USFA – John Hopkins Explores Alternatives to PFAS in Firefighting Foams
<https://content.govdelivery.com/accounts/USDHSFACIR/bulletins/35c8a44>
 - American Cancer Society – Disposition of Flourine on New Firefighter Turnout Gear (abstract)
<https://pubs.acs.org/doi/full/10.1021/acs.est.1c06322>
- **Cancer Education Resources**
- Firefighter Cancer Support Network (FCSN) – Education Presentations
<https://firefightercancersupport.org/firefighter-cancer-awareness-month/education-presentations/>
 - IAFC – Cancer Prevention Resources (lots of printable posters)
<https://www.iafc.org/topics-and-tools/resources/resource/cancer-prevention-resources>
 - Vector Solutions – NFPA 1851: Cancer-Related Risk of Firefighting (Free Course)
<https://info.vectorsolutions.com/nfpa1851-free-cancer-awareness-course>
 - Thin Red Line Decon – Firefighter Cancer Education Resources
<https://thinredlinedecon.com/firefighter-cancer-education-resources/>
 - National Library of Medicine – Cancer and Potential Prevention with Lifestyle Among Career Firefighters: A Narrative Review
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10177420/>
 - International Archives of Occupational and Environmental Health (Article, April 18, 2020) – Cancer Risks of Firefighters: A Systematic Review and Meta-Analysis of Secular Trends and Region-Specific Differences
<https://link.springer.com/article/10.1007/s00420-020-01539-0>

WELLNESS

Prevention continues to be our best weapon in the fight against cancer. A comprehensive wellness program that includes annual medical screenings, advanced screenings for cancer and other firefighter related diseases, and physical fitness training and testing.

▪ Annual Medical Screenings

Annual screenings are an important part of any fire department wellness program. This should include, at a minimum, a basic medical physical for each firefighter, regardless of rank or assignment. The basic physical is to ensure the firefighter is fit for duty and has no “obvious” medical issues that require attention. Even though cancer is a top priority, firefighter deaths due to cardiac disease and other health related causes are still a major concern.

Annual screenings should include:

- Medical History Review
- Physician Examination
- Blood Tests
- Urinalysis
- Vision Tests
- Audiograms
- Spirometry
- Chest X-ray
- Electrocardiogram (ECG)
- Cancer Screening (as indicated, may be age-specific)
- Immunizations
- Infectious Disease Screening (as indicated)

Review NFPA 1582 for more specific details on each of the items listed above.

- IAFC – A Fire Department’s Guide to Implementing NFPA 1582 (Great guide, contains sample letters to physicians, and justification information)
https://www.iafc.org/docs/default-source/1vcos/vws_rkit_nfpa-1582.pdf
- IAFF – Letter to Physician
https://www.iaff.org/wp-content/uploads/Primary-care-cancer-evaluations-for-firefighters_HamrockMD_2016_FCSN-1.pdf
- IAFC – A Health Care Provider’s Guide to Firefighter Physicals
https://www.detectogether.org/wp-content/uploads/2020/10/Your-Patient-is-a-Firefighter-Ir.pdf?_gl=1*p00wnq*_ga*NzkxNTc2ODc2LjE2OTk1NTEzODI.*_ga_Y2FQ2N97LN*M TY5OTU1MTM4MS4xLjEuMTY5OTU1MTM5OS4wLjAuMA..*_gcl_aw*R0NMLjE2OTk1

▪ **Advanced Cancer Screenings**

Advanced screenings for firefighter related cancers are becoming more common as the resources become more available. Although resources are more prevalent, cost is still an inhibiting factor. Most departments are directing all available resources to the annual physicals, which may leave little or no funding for advanced screenings. The justification for advanced screenings is clear and it may take a few budget years to obtain the funds but it is a worthwhile effort.

There are several choices for cancer screenings. Some screenings test for specific cancers and others test for abnormal blood counts that may be the result of cancer. The majority of tests are general and require additional follow-up testing from a primary doctor or a specialist.

- OneTest – Utilizes AI to Test for Tumor Markers
<https://lp.onetestforcancer.com/>
- Life Scan Wellness Centers – Provides On-site Cancer and Wellness Screenings
<https://lifescanwellness.com/about-us/>
- Via Scan of Las Colinas – Provides Cancer and Whole Body Scans. Primarily Serves North Texas.
<https://lifescanwellness.com/about-us/>
- Front Line Mobile Health – Health and Wellness Programs, Cancer Screenings.
<https://frontlinemobilehealth.com/medical-services/>
- ONCOblot Labs – Simple Blood Tests to Test for 25+ Cancers.
<https://oncoblotlabs.com/>
- Stage Zero Life Sciences – Conduct the Aristotle Cancer Test – Detects 9 Specific Cancers
<https://www.stagezerolifesciences.com/firefighters.html>

CANCER DIAGNOSIS

What do you do when one of your firefighters is diagnosed with cancer? Most chiefs have never encountered this situation but, as much as we would like to hope otherwise, it is a real possibility. There are processes and notifications that must take place and it all must be completed within the correct timeframe.

- The Firefighter Cancer Support Network is a great place to start. Their website states “No matter what kind of cancer you have or where you live, FCSN is here to lend a helping hand”. The FCSN contact number for anyone who has received a cancer diagnosis is 1-866-994-3276.
 - FCSN – Texas State Director Curtis Dunn (contact instructions)
<https://firefightercancersupport.org/request-assistance/texas/>
- SB 2511 amended the Government Code so that there are now 11 cancers covered under cancer presumption. These include:
 - Brain
 - Skin
 - Stomach
 - Colon
 - Prostate
 - Testis
 - Rectum
 - Non-Hodgkin’s Lymphoma
 - Multiple Myeloma
 - Malignant Melanoma
 - Renal Cell Carcinoma
- Office of Injured Employee Counsel (OIEC) – can serve as a liaison for first responders who need help with a workers’ compensation dispute. Their liaison is highly trained as an ombudsman and the rights of first responders in the workers’ compensation system. The contact number is (512) 804-4173 – Yolanda Garcia, or firstresponderhelp@oiec.texas.gov.
 - Office of Injured Employee Counsel
<https://www.oiec.texas.gov/employee/firstresponder.html>
- ACS National Cancer Information Center (NCIC) – IAFF Helpline – The American Cancer Society NCIC is available 24/7 to provide IAFF members with assistance. They assist with answering questions, helping those who have just received a diagnosis, are in current treatment, or caring for someone with cancer. (877) 901-7848. You can video chat at cancer.org/videochat, or online chat at cancer.org.
 - <https://www.iaff.org/fightcancer/>

- TCFP Reporting – Tutorials on how to report cancer injuries to the TCFP.
 - <https://www.tcfp.texas.gov/support/videos/report-cancer-diagnosis>

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