Firefighter Occupational Cancer Understanding and Best Practices for Occupational Cancer Prevention

FIREFIGHTER OCCUPATIONAL CANCER
FOCUS
UNDERSTANDING & SUPPORT

CLEAN AIR
CLEAN GEAR
CLEAN LIVING

focuseasternnc.com

Lynn Harrison, RN MSN OCN CCRC | lharrison@carolinaeasthealth.com

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Research spanning decades, continents, and more than 80,000 firefighters validates the connection between firefighting and occupational cancer.

Cancer is the #1 KILLER of Firefighters.

Almost 75% of the names added to the IAFF Fallen Firefighter Memorial died of cancer.

Cancer is the most dangerous threat to Firefighters health and safety today.

Firefighters have a 9% greater risk of developing cancer than the general US population.

Firefighters have a 14% greater risk of dying from cancer than the general US population.

Firefighters risks are significantly higher for some specific types of cancer than the general population

Firefighter's Increased Risk of Developing Cancer Compared to the General Population:

(100 percent = double = 2 times)

- Testicular Cancer (102% Greater Risk) - 2.02 times the risk
- Mesothelioma (100% Greater Risk) - 2.0 times greater risk (a very rare cancer)
- Multiple Myeloma—1.53 times greater risk
- Non-Hodgkins Lymphoma— 1.51 times greater risk
- Skin Cancer— 1.39 times greater risk
- Malignant Melanoma— 1.31 times greater risk
- Brain Cancer— 1.31 times greater risk
- Prostate Cancer— 1.28 times greater risk
- Rectum Cancer (29% Greater Risk)
- Stomach Cancer (22 % Greater Risk)
- Colon Cancer— 1.21 times greater risk
- Leukemia—1.14 times greater risk

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https://pubmed.ncbi.nlm.nih.gov/17099456/

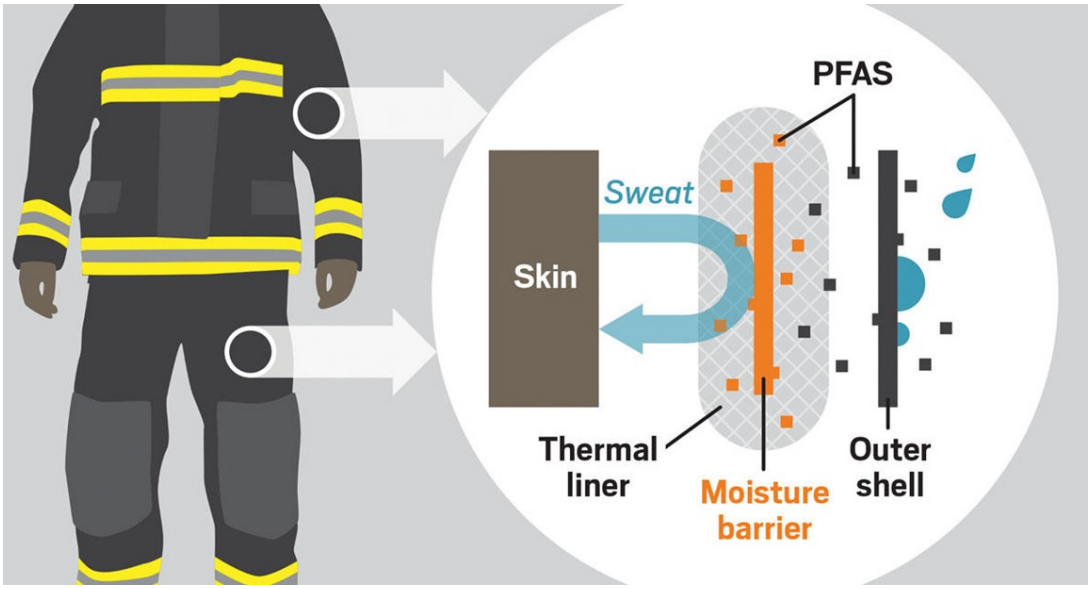
https://firefightercancersupport.org/resources/faq/

What about my Gear? Shouldn't that stuff protect me?

Firefighter Turnout Gear contains synthetic chemicals know as Polyfluoroalkyl Substances, or **PFAS**, also known as **" Forever Chemicals"** because they break down very slowly over time. This causes them to accumulate in the body with each repeated exposure. They are used in turnout gear to increase its ability to repel oil and water. PFAS chemicals are linked to cancer.

"The IAFF and Metro Chiefs advise fire departments to replace current gear with equivalent PFAS-free gear when it becomes available." -U.S. Fire Administration 9/15/2022

There are nearly 15,000 chemicals in the PFAS Family



The scrotum has an absorption rate of 300%. PFAS is directly linked to testicular cancer. Firefighters are twice as likely to develop testicular cancer.

https://podcasts.apple.com/ca/podcast/fire-science/id431607564

PFAS Firefighting Foam

"With every 5 degrees that body temperature rises, skin absorption rates increase by as much 400 percent."

This allows chemicals to embed into pores that open to help cool the body down during heat stress.

https://www.firerescue1.com/fire-rehab/articles/skins-role-in-firefighter-rehab-WDbKY9V96sBjbMpm/

Reducing Exposure to PFAS Dust in the Firehouse

The National Institute of Standards and Technology (NIST) conducted a study exposing 20 turnout gear textiles to stressing and measured PFAS concentrations before and after applied stresses (Abrasion, Elevated Temperature, Laundering, and Weathering. Summed PFAS concentrations varied between stresses and textile types. See chart for summary of the changes noted with each stressor.

chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://nvlpubs.nist.gov/nistpubs/TechnicalNotes/NIST.TN.2260.pdf

Table 4. Median changes in summed PFAS concentrations by stressing and textile type.
⊕⊕ > + 150 %, ⊕ + 25 % to + 150 %, ≈ - 25 % to + 25 %, ⊖ < - 25 %. NS – not studied.

	Abrasion	Elevated Temp.	Laundering	Weathering
Moisture Barrier	⊕⊕	⊖	≈	NS
Outer Shell	⊕⊕	⊕⊕	⊖	⊕⊕
Thermal Liner	⊕⊕	⊕	⊖	NS

TO REDUCE EXPOSURE TO PFAS DUST, PRACTICE THE FOLLOWING PREVENTIVE MEASURES:

- ⇒ **Treat PFAS dust like asbestos**
- ⇒ **Avoid sweeping or blowing out the apparatus bay with a broom or leaf blower, if possible**
- ⇒ **Instead, use a wet mop or, if there is no drywall, hose out the PPE storage area and squeegee**
- ⇒ **Use a shop vac with a hepa filter to clean living areas**
- ⇒ **Use air purifiers to collect airborne dust in PPE storage areas or living areas**
- ⇒ **Wear an N95 mask when cleaning PPE storage areas**
- ⇒ **Do not wear turnout gear on non-fire calls or during training that does not require it to reduce dermal exposure to PFAS dust**
- ⇒ **Inspect your turnout gear regularly for abrasions, wear and tear**

BEST PRACTICE #1

Photos courtesy of Lauralee Veltch

#1 Full protective equipment (PPE) must be worn throughout the entire incident, including SCBA during salvage and overhaul.

***Tip*: Think LOGICALLY**

Do you monitor for air quality? Is that good enough? Maybe you get an acceptable CO or HCN. Even if you get a zero reading, that doesn't mean the air is safe and the environment is clean. There are other toxic substances lower than CO's threshold that are much more hazardous to an unprotected individual which will create severe health consequences not only to firefighters, but to the building occupancy once you leave. When the PPV fan is turned off, the negative air allows everything inside that structure to off-gas again to elevated levels.

WEAR SCBA THROUGHOUT THE ENTIRE INCIDENT, INCLUDING OVERHAUL AND INVESTIGATIONS.

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BEST PRACTICE #2

Photo courtesy of Fire Dex, LLC

Photo of the Globe Box Nine Gold Particulate Hood. Courtesy of PGI, Inc., Green Lake, WI.

#2 A second hood should be provided to all entry-certified personnel in the department.

Download the *Lavender Ribbon Report: 11 Best Practices for Preventing Firefighter Cancer*, and more cancer prevention resources by visiting these websites. www.nvfc.org/cancer | www.vcos.org/BeatFFCancer

Tips:

1. Stocking hoods should be replaced with multilayer particulate blocking hoods as soon as possible! *(see FAST report results next page)*

2. NO GAPS! Ensure your hood is properly fitted to your SCBA with no gaps to let contaminants in.

3. HOOD EXCHANGE:

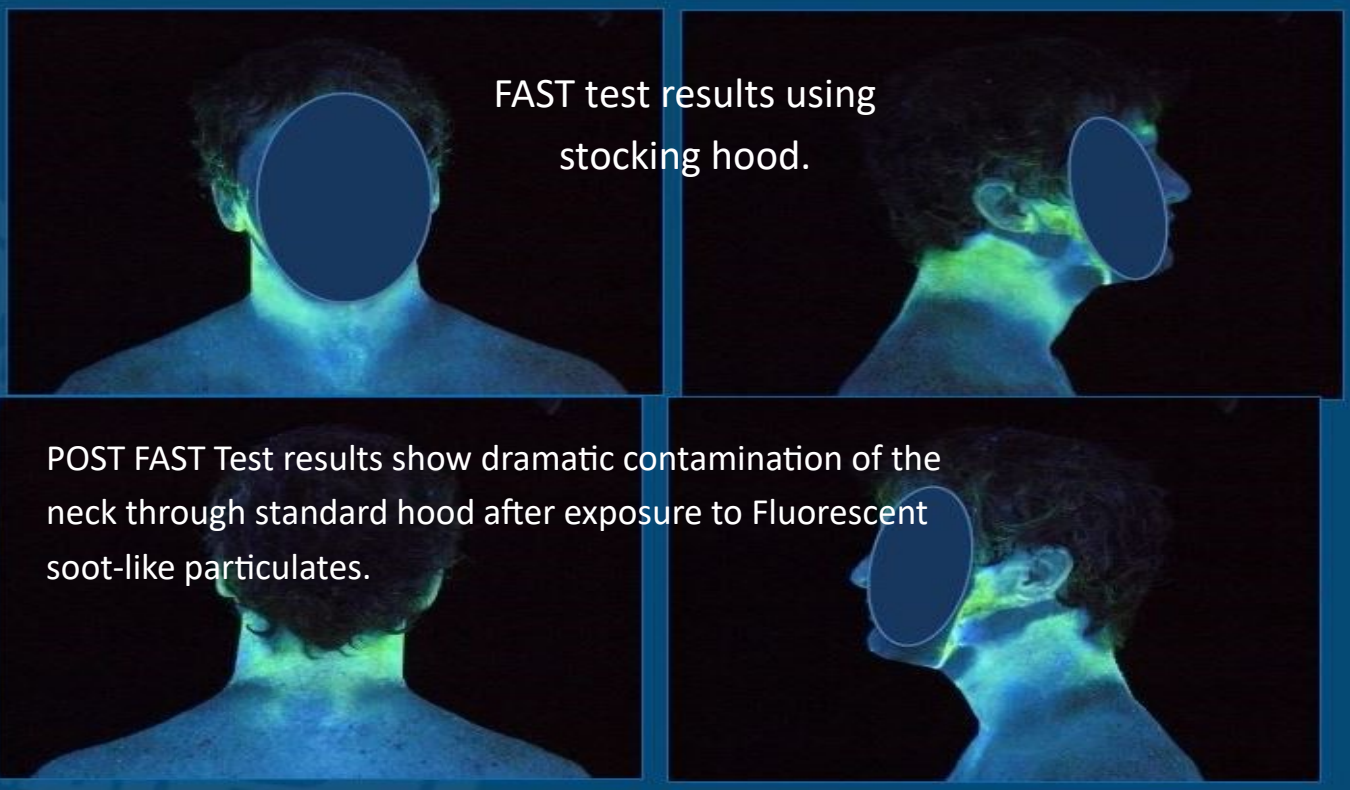
When personnel enter rehab, they should discard their protective hood into a provided plastic bag and take a fresh hood. A clean hood should be acquired during each bottle exchange and/or rehab visit, when appropriate.

A decontamination wipe should be used to clean the face and neck area during hood exchange.

Hoods should be properly bagged, cleaned/decontaminated after EVERY exposure on the fireground.

Wash hands after handling contaminated hoods.

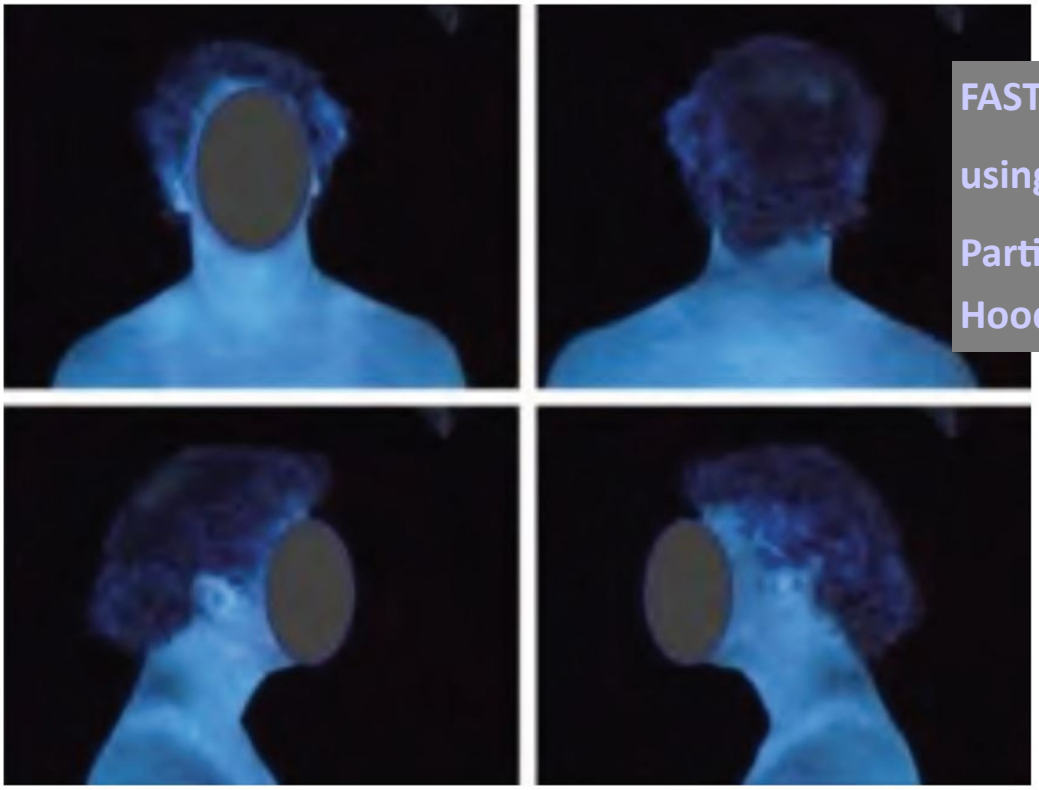
UV Photos: Head and Neck



FAST test results using stocking hood.

POST FAST Test results show dramatic contamination of the neck through standard hood after exposure to Fluorescent soot-like particulates.

There were very heavy aerosol deposits on the neck, cheeks, ears, and hair due to penetration through the hood. The dark bands below the ears were relatively clean areas that were covered by the mask straps



FAST test results using multilayer Particulate Blocking Hoods

BEST PRACTICE #3

#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.

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Emergency Scene Wash Down Protocol

The emergency scene “wash down” or “gross decon” protocol is intended to encapsulate and wash off cancer causing toxins encountered at a fire scene. Personnel exposed to these carcinogens shall participate in this process of “wash down” including water, Dawn dish soap, agitation with a brush, and finally rinsing off the contaminants with water. This type of emergency scene “wash down” has been recommended by the CDC/NIOSH as the most reliable process to date. When performed thoroughly, this process can remove up to 80% of the contaminants before firefighters begin to remove and handle their gear. This can result in limiting the cross-contamination that occurs when removing and handling the turnout garments.

The “wash down” kit consists of:

- (1) 5 gallon reflective green LeakTite bucket with lid
- (1) Dawn dish soap (small)
- (1) Hose: Goodyear Flex Flat Hose ½”x50’ (pressure rated up to 400 psi)
- (1) Nozzle: Pro Series Water Cannon
- (1) Adaptor 2.5” female to .75” male GHT
- (1) HDX Bench Brush
- (1) Duct tape
- (4) 55 gallon 6 mil bags (clear)
- Educational Items (USB Drive)

Tip: You can find all the items needed at a local store like Walmart. You do not have to buy special kits from a fire service vendor.

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"Wash down" set up:

1. Identify a safe area that is easily accessed.
2. Remove the content of the bucket.
3. Connect the 2.5" adaptor, hose and nozzle to a 2.5" discharge.
4. Add a small amount of Dawn dish soap to the bucket and add water.

Step-by-step "wash down" process:

- When directed by the Incident Commander or company officer, the firefighter(s) will remain on air and report to the designated "wash down" area.
- Contaminated personnel will wash each other off. This prevents respiratory and dermal exposure to personnel not protected by turnout gear and SCBA protection.
- Spray water on the contaminated firefighter, top to bottom without over saturating or introducing water through the neck area.
- With the soapy water from the bucket, scrub the areas of the helmet, jacket, and pants.
- Rinse the soap and contaminants from the firefighter.
- Repeat the process for remaining personnel.
- Once personnel have completed the "wash down", they are cleared for removing their gear.
- To prevent inhalation or dermal contamination from removing the hood, keep your SCBA on and pull your hood over your head and down around the SCBA regulator hose. This will limit the chances of breathing in contaminants before unclipping the SCBA regulator.
- If there is a need to put the wet gear back on for ongoing fire ground tasks, it may be done with less chances of contamination since it has been washed down.
- To adhere with the "clean cab" philosophy, each individual shall place their washed down gear in the 55-gallon 6 mil clear bags prior to driving back to the station.
- Once back at the station or at any time necessary, use gloves and other available protection when handling the gear.

***Tip**: This process should take about 2 minutes per firefighter. Scrubbing should be just enough to make suds, no harder, paying attention to the armpit and groin areas of the ensemble.*

Re-donning wet gear, when needed, will not put you at risk. The gear will be cleaner.

A step-by-step instructional video can be found here: https://youtu.be/3qPPOBrF0zA?si=acWYPVvNkOyiowB9

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BEST PRACTICE #4

#4 After completion of gross decon procedures, 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.

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Decon wipes can be used on face, neck and hands at the time of hood exchange, if appropriate, and after gross decon.

The goal is to remove contaminants from the skin as soon as possible to reduce the amount of toxins absorbed.

***Tip*: If you do not have decontamination wipes, generic baby wipes can take off 54% of PAHs (polycyclic aromatic hydrocarbons). PAHs are a type of PFAS and are carcinogenic.**
http://www.tandfonline.com/loi/uoeh20

However, due to alcohol content in baby wipes, which may be harmful and increase skin absorption of contaminants, it is recommended to use fire decontamination wipes.

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BEST PRACTICE #5

Photos courtesy of Christophe Charonet

#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.

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PPE Washing: Fire gear should be washed as soon as possible after fire in a gear extractor. The liners and hoods should be washed separately from the outer shells and gloves to reduce cross contamination.

Any contaminated clothing worn in a fire should be washed in a clothes washer at the station and NOT taken home to avoid cross contamination with your family's personal clothes.

***Tip*: Clothing worn under turnout gear will be contaminated. Consider on scene change of clothes, or keeping a "go bag" with clean clothes in POV.**

The aim is to remove clothing which is contaminated with sweat that contains carcinogens/particulates/PFAS as soon as possible.

Removing contaminated clothing on-scene decreases the length of time skin is in contact with carcinogens, thereby decreasing the amount absorbed.

BEST PRACTICE #6

#6 Shower as soon as possible after being exposed to products of combustion or other contaminants. "Shower within the Hour".

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No member should go home to use their personal shower if showers are available at the firehouse!

***Tip**: There is insufficient evidence to support "sweating out" contaminants and heavy metals using a steam room, sauna, or by exercising. It won't hurt you, as long as you have removed contaminates FIRST by showering within the hour. Follow all safety rules for saunas and steam rooms.*

BEST PRACTICE #7

Photo courtesy of Christophe Charonat

#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.

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NVFC

Tip: Fire gear is

ONLY allowed in the Gear Room and the

Apparatus Bay

(also see diesel exhaust tip sheet)

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BEST PRACTICE #8

Photo courtesy of Christophe Charonat

#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.

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Tip: Wear disposable EMS gloves when cleaning helmet, tools, apparatus seats, SCBA and interior crew areas.

NO SALTY GEAR

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BEST PRACTICE #9

#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.fstaresearch.org/resource/?FstarId=11591.

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Cancer Risk Factors

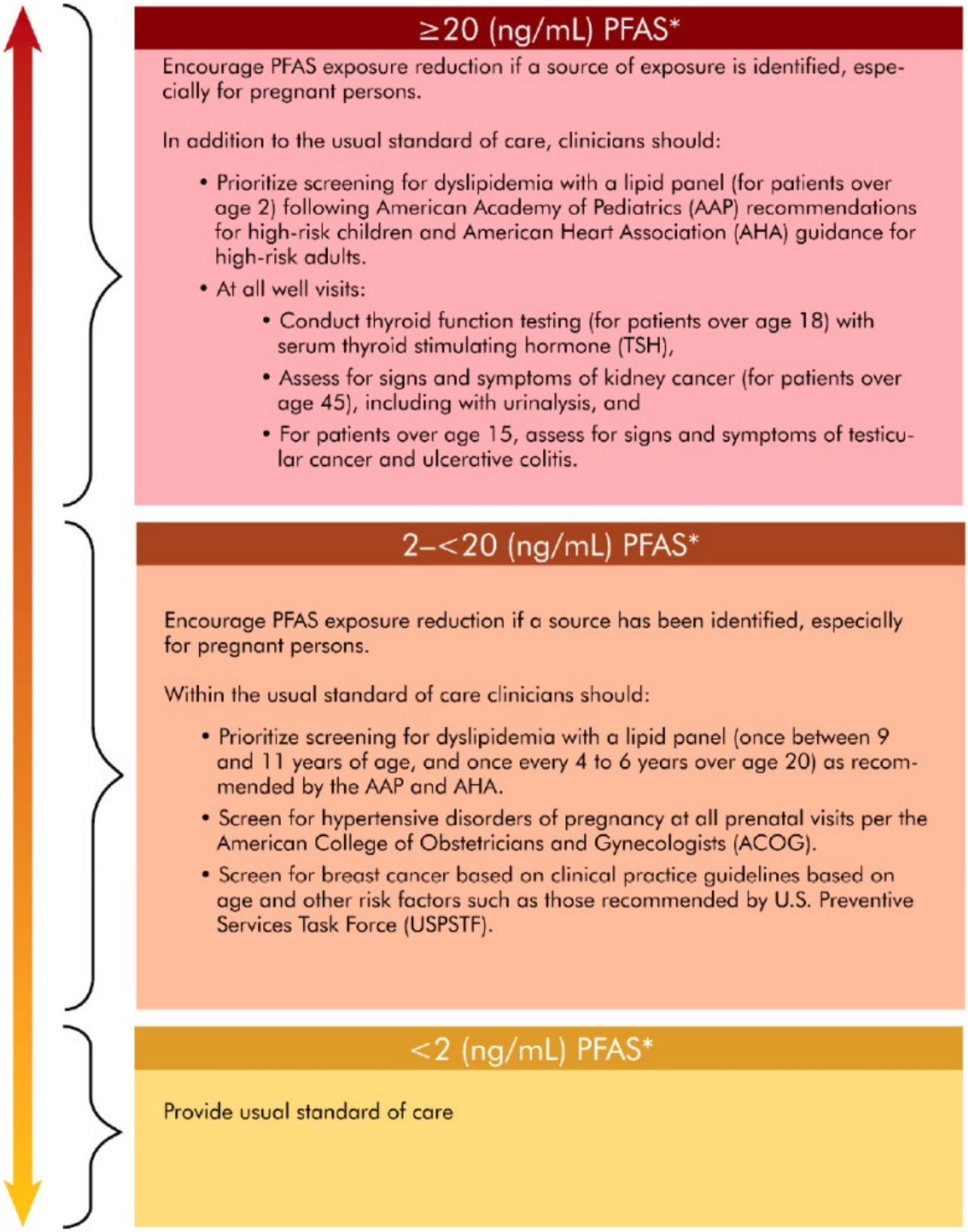
Night shift
Flame retardants
UV radiation
Diesel Exhaust
Exposure over TIME
Smoking
Vaping
Alcohol

Diet and Exercise

Decontamination Procedures!

What can you modify/control to reduce your cancer risk?

PFAS Clinical Guidance



* Simple additive sum of MeFOSAA, PFHxS, PFOA (linear and branched isomers), PFDA, PFUnDA, PFOS (linear and branched isomers), and PFNA in serum or plasma

Provider's Guide to
FIREFIGHTER MEDICAL EVALUATIONS

Firefighting is a uniquely stressful and dangerous job that requires working in unpredictable and often toxic environments. Due to the demands, firefighters are at increased risk for job-related **CANCER, MENTAL HEALTH CONCERNS,** and **CARDIOVASCULAR EVENTS.**

While the USPSTF recommendations should be used as a baseline, they are designed for the general population and not an occupational group with increased risk. Providers should be aware of the unique exposures and consider this in conjunction with personal and family risk factors when weighing timing and frequency of screenings.

CARDIOVASCULAR DISEASE (CVD)

Sudden cardiac events account for ~50% of acute duty-related death among firefighters primarily by myocardial infarction or cardiac arrest[1]

Consider thoroughly screening and aggressively treating CVD risk factors. An ASCVD risk score can help identify firefighters who may need to initiate treatment for hypertension or dyslipidemia

Expert Panel Recommendation: Based on risk factors, evaluate firefighters for coronary heart disease (CHD) and structural heart changes, specifically consider:[2]

Coronary Artery Calcium (CAC) Scan or stress test at age 40 yrs., or earlier based on clinical judgment and risk profile

Screening for structural heart disease including left ventricular hypertrophy, cardiac chamber enlargement, valvular abnormalities, or diastolic/systolic dysfunction using screening echocardiography at age 40 yrs., or earlier in the presence of hypertension, obesity, Metabolic Syndrome or sleep apnea

A large-scale autopsy review found approximately 80% of firefighters who suffered a sudden cardiac event had evidence of both coronary heart disease (>50% occlusion) and a structurally enlarged heart. Only about 20% of autopsies had evidence of an intracoronary thrombus, suggesting ischemia induced arrhythmias may be responsible for a large percentage of cardiac line of duty deaths.[3]

FIREFIGHTERS AS TACTICAL ATHLETES

Cardiovascular
Extreme physical work, >70 lb of gear, strain on cardiovascular system

Hematological
Dehydration (decreased plasma volume), hemoconcentration

Thermoregulatory
Elevated core temperature, dehydration, heat stress

Respiratory
Increased breathing rate and oxygen consumption

Metabolic
Oxygen cost (extreme physical work), increased lactate, fatigue

Immune/Endocrine
Increased leukocytes and hormones

Nervous
Sympathetic surge, increased adrenaline

Muscular
Increased oxygen use and heat production

Psychological
Repeated exposures to trauma, sleep disruption, increased mental and behavioral health concerns

Scan the QR code for Screening Tools, Resources & More

CANCER

Firefighters have been found to be diagnosed with cancer at earlier ages than the general population[4-8]

While firefighters do wear PPE, their gear does not protect them from all carcinogenic exposures on the fire ground and modern fires burn hotter and dirtier than ever before[9]

While studies are evolving to empirically validate screenings beyond those of the USPSTF for firefighters, experts working with this population strongly suggest considering:

Tracking PSA annually starting at age 40

Colorectal cancer screening beginning at age 40

Cervical cancer screening every 1-3 years based on risk factors

Annual mammograms beginning at age 40

Annual testicular exam and instruction for self-examination

Annual head-to-toe skin examination and appropriate dermatology follow-up

Urinalysis annually for microscopic hematuria

CANCERS found to be increased among Firefighters

Brain[4,6,7]	Colon[8]	Bladder[5,8]
Non-Hodgkin's Lymphoma[4,8]	Cervical[9]	Mesothelioma[4,8]
Leukemia[7]	Prostate[4,6-8]	Rectum[4,5,8]
Breast[10]	Testicular[4,6,8]	Intestines[5]
Melanoma[6-8]	Stomach[4]	Lung[5]
Kidney[5,7]	Thyroid[6,8]	Esophagus[5,7]

Multiple Myeloma[4,7]

CARCINOGENS found in smoke

Carbon Monoxide, Hydrogen Cyanide, Hydrogen Chloride, Asbestos, Sulfur Dioxide, Formaldehyde, PCB, Benzene, PAH, Chloroform, Styrene

BEHAVIORAL HEALTH

Firefighters have high rates of depression, post-traumatic stress, acute stress reactions, anxiety, high rates of suicidal ideation and report frequent binge drinking[11-17]

Consider screening for behavioral health issues, suicidal thoughts, and substance use/abuse such as binge drinking.

SLEEP DISORDERS

Firefighters are at high risk for sleep disorders (e.g. sleep apnea, insomnia, shift-work disorder, and restless leg syndrome)[12,18]

Based on the substantially high rate of sleep disorders, experts in firefighter health recommend aggressive screening and treatment for sleep disorders.

LUNG DISEASE

Firefighters are often exposed to products of combustion that may lead to acute respiratory issues (i.e.: hypoxemia, bronchoconstriction).[19] Repeated exposure may cause chronic pulmonary disease and abnormal lung function.[20,21]

Based on risk factors, experts in firefighter health recommend considering:

Baseline Chest X-Ray and repeat imaging as clinically indicated

Low dose CT for screening of lung cancer in high-risk individuals

Regular spirometry to include FEV1, FVC, and the absolute FEV1/FVC ratio if clinically indicated

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#10 Tobacco products of any variety, including dip and e-cigarettes should never be used at anytime on or off duty.

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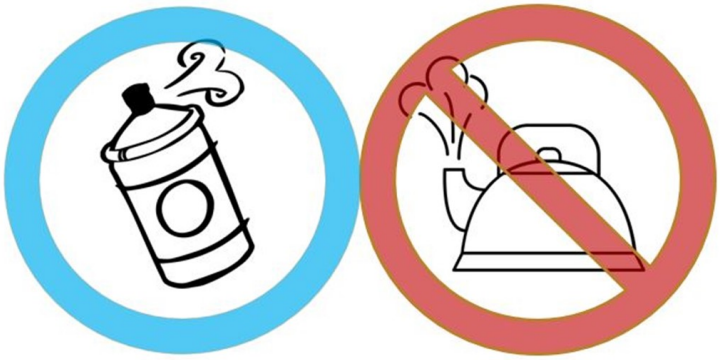
Vaping/e-cigarettes are not water vapor. They are an AEROSOL!



Properties of AEROSOLS:

Designed to Stick: think of hairspray, sunscreen sprays, spray paint.

This means you do not breath all of the e-liquid out, some stays behind.

Vaping leaves behind sticky particles, nanoparticles, and deposits in the lungs. Lungs become impregnated with these substances that accumulate with each use of the vape. This causes lung inflammation that can be irreversible.

Not every e-liquid contains nicotine, but many contain higher amounts than cigarettes, making them more addictive and toxic.

THESE TOXIC CHEMICALS AND METALS HAVE ALL BEEN FOUND IN E-CIGARETTES

NICOTINE **CARCINOGENS (chemicals known to cause cancer)** **BENZENE (a volatile organic compound (VOC) found in car exhaust)**

FORMALDEHYDE **HEAVY METALS SUCH AS NICKEL, TIN, LEAD** **ACROLEIN (a herbicide used to kill weeds)**

CADMIUM (a toxic metal found in cigarettes that causes breathing problems and disease)

DIETHYL GLYCOL (a toxic chemical used in antifreeze that is linked to lung disease)

ULTRAFINE PARTICLES that can be inhaled deep into the lungs

https://www.lung.org/quit-smoking/e-cigarettes-vaping/whats-in-an-e-cigarette

BEST PRACTICE #11

#11

Fully document ALL fire or chemical exposures on incident reports and personal exposure reports.

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NVFC

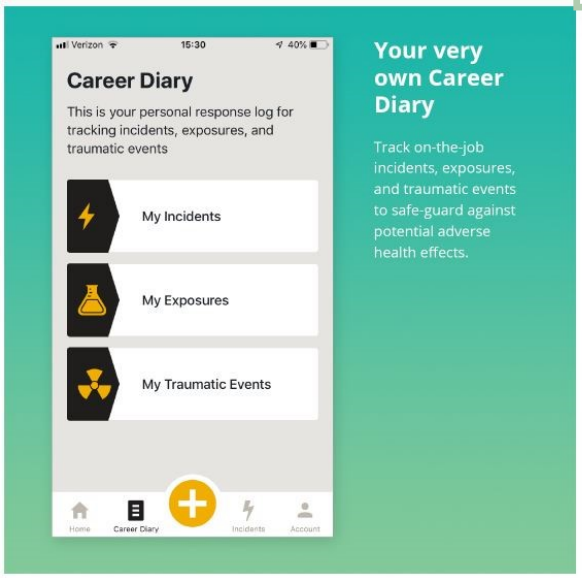
NFR™

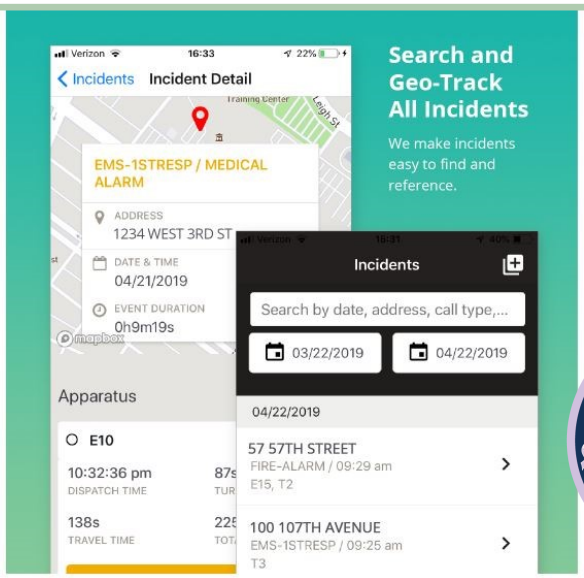
NATIONAL FIREFIGHTER REGISTRY *for Cancer*

Understanding & Reducing Cancer

Tip: You can track exposures for free by signing up for the National Firefighter Registry or downloading a free career diary app.

The NFR will help researchers better understand and reduce occupational cancer in firefighters.





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BEST PRACTICE # 12

Firefighters have a
30-60% Higher Risk
of Developing Melanoma
than non-firefighters

Skin Cancer is preventable and melanoma, if caught early, can be cured!

#12 Wear Sunscreen

Sun x SPF 50 Broad Spectrum Sunscreen Wall Dispenser Only

This wall-mount dispenser offers convenient access to sunscreen and is easy to use and refill. Sun X sunscreen delivers UVA/UVB protection in a non-greasy, water-resistant ...

Lotion · Waterproof

View product details

$19.95
+$0.00 est. tax

Forestry Suppliers
Delivery by Thu, Aug 10
4.7/5 ★ (502)

***Tip*: Sunscreen should be provided and easily accessible. Sunscreen lotion, wipes or dispensers should be placed in key areas throughout the fire house. Use of sunscreen should be encouraged prior to outdoor training events, recreation, or other outdoor activities.**

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Diesel Exhaust

Exposure to Diesel Exhaust Causes Cancer

PPE STORAGE: Not all Firehouses are equipped with “fire gear

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Fortunately, there was a supply closet nearby.

The department was able to move the contents of the supply closet and transfer the gear into the closet. The gear storage room should be well ventilated. Gear should be DRY, HUNG, and kept away from UV light and DIESEL Exhaust.

If a firehouse does not have the capability to create a fire gear room, an option is to place covers over the gear lockers in the apparatus bay. This will help limit the amount of diesel exhaust on the gear and avoid UV light exposure.

Diesel Exhaust

Exposure to Diesel Exhaust Causes Cancer

Exhaust Systems: Ensure your exhaust system is maintained and use the manufacturer recommendations to limit exposure to diesel exhaust.

Placement of PPE: Do not store fire gear near the vehicles' diesel exhaust discharge.

Apparatus Checks: Apparatus should be taken outside for their daily checks to limit diesel exhaust exposure.

Compartments over Exhaust: Each time the compartment located over the exhaust is opened while the apparatus is running, there will be exposure to diesel exhaust. For this reason, items that are frequently used (such as EMS equipment) should not be stored in this compartment.

Doors to Living Quarters: All doors should have adequate weatherproofing to keep any diesel exhaust from entering living quarters. This also includes pole holes. Doors to living quarters should NOT be propped open.

Drinking Fountains, ice and drink machines: Diesel exhaust will travel throughout the apparatus bay, contaminating drinking fountains, ice machines, and soda can lids. Ideally, these machines should be cleaned and relocated inside the stations living quarters. If this is not a possibility, then consider adding a non-potable sign. Firefighters should also clean the tops of their soda cans before consumption.

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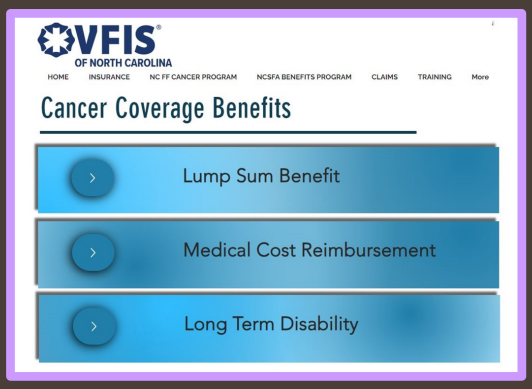
UNDERSTANDING & SUPPORT

WHAT TO DO IF YOU GET CANCER



https://www.vfisnc.com/ncffcancerbenefitprogram

Presumptive Disability Law in North Carolina
https://www.ncleg.gov/

- $100,000 Tax Exempt lump sum to surviving spouse or dependents
- Killed in the line of duty by testicular, mesothelioma, esophageal or intestinal cancer

Peer Support
https://firefightercancersupport.org/

CLEAN AIR
CLEAN GEAR
CLEAN LIVING

Reach out to FOCUS for more information about Firefighter Occupational Cancer at 252-665-5758 or visit focuseasternnc.com

FIREFIGHTER CANCER INITIATIVE

Alcohol consumption increases the risk for the following cancers:

Including: **Breast, Colorectal, Endometrial, Kidney, Liver, Stomach/ gastric, Upper digestive**

A standard drink of alcohol is defined as:

Binge drinking is defined as a drinking pattern that brings a person's blood alcohol concentration (BAC) to 0.08 g/dl or above which is about 5 or more drinks for men and 4 or more drinks for women over the course of about 2 hours.

Among other adverse health effects associated with binge drinking, an increased risk for cancer of the breast, mouth, throat, esophagus, liver, and colon

People who chose to drink alcohol should limit consumption to no more than **1 drink per day for women** and **2 drinks per day for men.**

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FIREFIGHTER CANCER INITIATIVE

Breast self-exams help you to be familiar with how your breasts look and feel so you can alert your healthcare professional if there are any changes.

Breast Cancer Symptoms

Changes in how the breast or nipple looks or feels

- Nipple tenderness or a lump/thickening in or near the breast or underarm area (It's important to remember that all lumps should be investigated by a healthcare professional, but not all lumps are cancerous).
- A change in the skin texture or an enlargement of pores in the skin of the breast.

Changes in the appearance of the breast or nipple

- Any unexplained change in the size or shape of the breast.
- Dimpling anywhere on the breast.
- Unexplained swelling of breast or shrinkage (especially only on one side).
- Recent asymmetry (unequal or lack of sameness) of the breasts. Although it is common for women to have one breast that is slightly larger than the other, if the onset of asymmetry is recent, it should be checked.

Nipple discharge (particularly clear or bloody discharge)

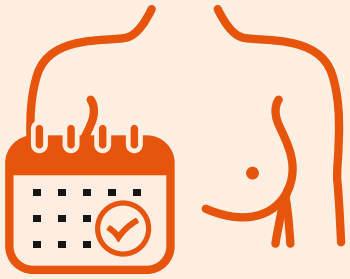
- Let your doctor know about any nipple discharge. The most concerning discharges are bloody or clear.

Note: *Milky discharge present when a woman is not breastfeeding should be checked by a doctor, although not linked with breast cancer.*

In addition to monthly self-exams, a clinical breast exam may be performed by a qualified healthcare provider

Women 40+ should have mammograms every 1 or 2 years

Women <40 and have **risk factors for breast cancer** should ask their healthcare professional whether mammograms are advisable and how often to have them



When to check?

Women of all ages should perform **monthly** breast self-exams.

How to check?

In the shower or lying down

Check both breasts and armpit areas pressing down with light, medium, and firm pressure. Check for any lump, thickening, hardened knot, or any other breast changes. Squeeze the nipple; check for discharge and lumps.

In front of a mirror

Visually inspect breasts for any changes, first with your arms at your sides and next with arms raised high overhead.

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FIREFIGHTER CANCER *INITIATIVE*

In the US, 7.7 women per 100,000 per year are diagnosed with cervical cancer, 2.2women per 100,000 per year die of cervical cancer (CDC)

Female firefighters in Florida face 5X the risk of Cervical Cancer compared to female non-firefighters.

Decreases cervical cancer mortality by

80%

GET TESTED

All women from **21 to 65** years of age should have a pap smear at least every **3 years**

GET VACCINATED

Most cervical cancer is caused by HPV. Know your risk and discuss reducing it with your doctor by getting the HPV vaccine.

GET PROTECTED

Ensure that you have protective, high-performing, and well fitting gear to reduce your exposure to cancer-causing chemicals

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FIREFIGHTER CANCER INITIATIVE

Colorectal cancer (CRC) is the second leading cause of cancer-related deaths among men and women in the United States.

Firefighters have an increased incidence for colon (14%) and rectal (9%) cancer. Firefighters also have an elevated mortality from rectal (36%) cancer as well as NHL (42%).

What is Colorectal Cancer?

Colorectal cancer is the development of cancer in the bowel, colon or rectum (all parts of the large intestine). It is also known as bowel cancer, colon cancer, or rectal cancer.

Colorectal cancer is more likely to be diagnosed early following routine medical screening.

Get tested

if you are over

45

years old

you should get a colonoscopy by your doctor's recommendations

**Note: This age may be earlier based on personal risk and family history*

Know the Signs

Know the common symptoms of colorectal cancer including:

- ⚠ Blood in your stool
- ⚠ Stomach pains
- ⚠ Consistent cramps
- ⚠ Unexplained weight loss

If any of these apply to you contact your doctor.

Know the dangers

Diesel exhaust is associated with rectal cancer, lung cancer, and leukemia.

Diesel exhaust in firehouses generates exhaust which will enter not only the apparatus bay but also the firefighters' living quarters. As a result, firefighters can be exposed to diesel exhaust for a significant portion of their shifts.

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FIREFIGHTER CANCER INITIATIVE

Skin cancer is the most common cancer in the US and fire fighters are diagnosed with melanoma at a rate of 0.7% compared to a rate of 0.01% for the general Florida population.

What is Melanoma?

Melanoma is the **most deadly** form of skin cancer.

Melanoma is less common than other skin cancers, but is more likely to spread to other parts of the body. Develops in melanocytes, the deepest layer of epidermal skin cells where melanin is produced. From here, cancer can go into deeper layers of skin and spread.

Most melanoma tumors are brown or black, but can be pink, tan or white.

Differences can be attributed to occupational exposure to carcinogens.

Get tested

The median age of diagnosis for firefighters is

42 years old

20 years younger than the median age of diagnosis for the general US population

Check for Signs using the ABCDE Rule

A symmetry of the spot

B order is irregular

C olor is not the same all over

D iameter greater than 6 mm across (about the size of a pencil eraser)

E volving; if the spot is changing in size, shape, or color

If any of these apply to you contact your doctor.

How to prevent skin cancer

Wear protective clothing whenever exposed to the sun including pants, hats with brims that cover your face, ears, and neck, and thin long-sleeved shirts

Wear a broad-spectrum, water-resistant sunscreen with an SPF of 30 or higher which protects against UVA and UVB rays. Sunscreen should be applied to all skin exposed to the sun and reapplied every two hours when outdoors.

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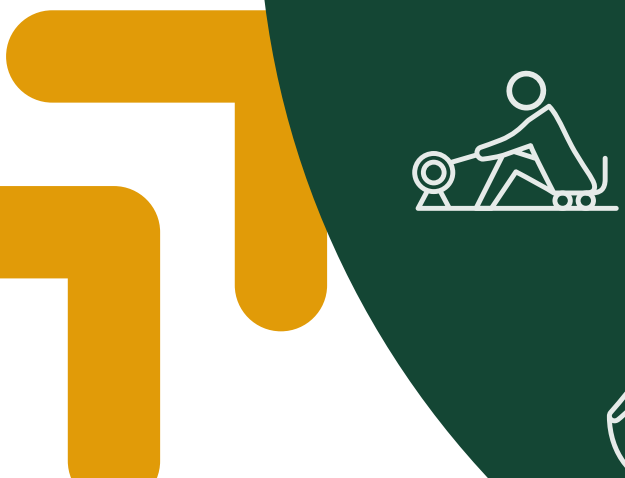
FIREFIGHTER CANCER INITIATIVE

Regular moderate to vigorous physical activity and reducing sedentary time has been shown to lower the risk of cancers

Including: **Breast, Colorectal, Endometrial, Kidney, Liver, Lung, Ovary, Pancreas, Stomach/ gastric, Upper digestive**

Limit sedentary activity such as sitting, laying down, and screen-based entertainment.



Adults should engage in moderate intensity physical activity for 150 to 300 minutes per week or 75 to 150 minutes of vigorous physical activity or a combination of both.

Moderate Intensity

Includes: walking, dancing, leisurely bicycling, gardening, golfing, horseback riding and yoga.

Vigorous Intensity

Includes: jogging,running, circuit or weight training, fast bicycling, swimming, martial arts, soccer, singles tennis, basketball, heavy manual work (including fire fighting)

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FIREFIGHTER CANCER INITIATIVE

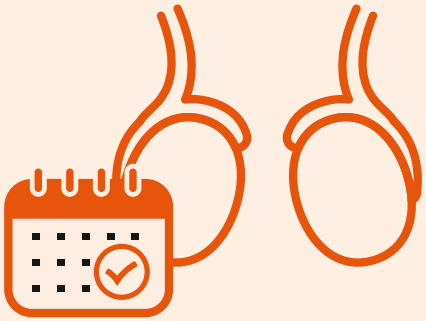
Male firefighters have an increased risk of certain cancers. Among these are testicular cancer.

It is important to perform regular self-examinations of one's testicles in order to notice changes.

Why do self-exams?

Testicular cancer is highly treatable especially if caught early. Most of the time a lump or swelling on the testicle is the first symptom. Most testicular cancers are found by men themselves or their partner, very few are found by a physician.

By doing the monthly testicular self-exams, you become familiar with your testicles, making it easier to notice any changes.



When to check?

Perform **monthly** testicular self-exams.

How to check?

It is best to do the testicular self-exam during or right after a warm shower or bath. The warmth relaxes the scrotum making the exam easier.

- Stand in front of a mirror if possible, to check for any swelling on the scrotal skin.
- Examine each testicle with both hands. Hold testicle between thumbs and middle fingers and roll it gently but firmly between fingers.
- Look and feel for any hard lumps or nodules (smooth rounded masses) or any change in the size, shape, or consistency of your testicles.
- You should not feel any pain when performing the self-exam. Be aware of any dull soreness or heaviness. The testicles should be smooth and firm to the touch.

What is normal?

Don't be alarmed if one testicle seems slightly larger or hangs lower than the other - **that's normal**. Each normal testicle has a small, coiled tube called the epididymis that can feel like a small bump on the upper or middle of it's outer side. Testicles also contain blood vessels, supporting tissues, and tubes, which may get confuse these with abnormal lumps at first.

If you have any concerns, ask your doctor.

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FIREFIGHTERS ARE DIAGNOSED WITH MELANOMA AT A GREATER RATE THAN THE GENERAL US POPULATION.

Checking Your Skin for Signs of Cancer

How to do a Skin Check

Check your skin once a month. Skin checks are best done in front of a full-length mirror. A handheld mirror is also helpful. Make sure the room is well lit. You may need a someone to check your back and scalp.

Face the Mirror.

- Check your face, ears, neck, chest, and belly. Women will need to lift their breasts to check underneath.
- Check the skin under your arms, both sides of your arms, and the tops and palms of your hands. Also check between your fingers and under your fingernails.

Sit Down.

- Check the front of your legs, tops of your feet, in between your toes, and under your toenails.
- Use a hand mirror to look at the bottoms of your feet and the backs of your legs.
- Use the hand mirror to check your buttocks, private (genital) area, lower and upper back, and your neck and ears. It may be easier to look at your back in the wall mirror using a hand mirror.
- Use a comb or hair dryer to part your hair so that you can check your scalp.

What to Look for

Here are some things to look for. Finding one or more of these does not mean you have cancer, but that you should be checked by a doctor.

- A new or changing growth, spot, lump, or bump on the skin
- A sore that bleeds and does not heal
- A rough or dry red area on your skin, which might crust or bleed
- New itchiness, soreness or pain
- A rough bump
- A mole (or other spot) that is new or changing in size, shape, or color
- A mole with an odd shape, uneven edges, or areas of different colors
- Spread of the color of a mole outside the edge of the mole
- Redness or new swelling outside the edge of the mole

If You Find Something New or Different During a Skin Self-exam

- Draw a circle around the area with a marker or pen
- If your phone has a camera, take a picture of it
- Make an appointment to have a doctor look at it. The only way to know if it is skin cancer is to talk with an expert

Prostate Cancer Screening Recommendations and Eligibility

Who's recommending?	To whom?	What's the recommendation?	Who are eligible?
U.S. Preventive Services TASK FORCE	US male general population	Discuss prostate specific antigen (PSA) testing with health care provider	Males, 55-69 years
NFPA®	All male firefighters *Includes volunteers*	Discuss PSA testing with health care provider annually	• Males 50 years or older – 40 years or older for African Americans or for those with first degree family member history

US Preventive Services Task Force, Grossman DC, Curry SJ, et al. Screening for Prostate Cancer: US Preventive Services Task Force Recommendation Statement. JAMA. May 2018.
National Fire Protection Association: NFPA 1582 Standard on Comprehensive Occupational Medical Program for Fire Departments, 2022.

Women's Health: Cancer Screenings

						
Oropharyngeal exam and tobacco and alcohol use screening	***Thyroid exam, Thyroid panel, U/S if any abnormal findings***	***CBC w/diff to screen for hematologic malignancies***	***Full body skin check starting by age 40y/o***	***LDCT per ALA guidelines***	***Urinalysis w/microscopy, U/S if persistent hematuria***	***Colonoscopy starting at 40-45y/o and stool testing annually***
No recommendation for asymptomatic screening	*Do not screen for thyroid cancer or dysfunction for asymptomatic adults*	*No guidelines available*	*No screening recommended for asymptomatic adults*	*Screening per ALA guidelines*	*No recommendation for asymptomatic screening*	*Colonoscopy starting at 45y/o or stool test every 1-3 years*

(Lambert, 2018 & U.S. Preventative Task Force, n.d.)

*** Diagnostic testing and/or specialist referral based on history symptoms, clinical exam findings, and/or lab abnormalities**

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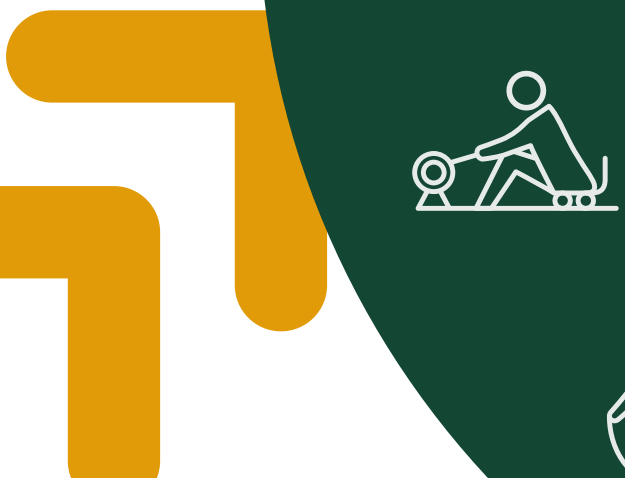

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Clinician Summary of USPSTF Recommendation

Screening for Lung Cancer

March 2021

What does the USPSTF recommend?

B Grade

Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years:

- **Screen** for lung cancer with low-dose computed tomography (CT) every year.
- Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery.

To whom does this recommendation apply?

Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. (See below for definition of pack-year.)

What's new?

The USPSTF has revised the recommended ages and pack-years for lung cancer screening. It expanded the age range to 50 to 80 years (previously 55 to 80 years), and reduced the pack-year history to 20 pack-years of smoking (previously 30 pack-years).

How to implement this recommendation?

1. **Assess risk based on age and pack-year smoking history:** Is the person aged 50 to 80 years and have they accumulated 20 pack-years or more of smoking?
   a. A pack-year is a way of calculating how much a person has smoked in their lifetime. One pack-year is the equivalent of smoking an average of 20 cigarettes—1 pack—per day for a year.
2. **Screen:** If the person is aged 50 to 80 years and has a 20 pack-year or more smoking history, engage in shared decision making about screening.
   a. The decision to undertake screening should involve a discussion of its potential benefits, limitations, and harms.
   b. If a person decides to be screened, refer them for lung cancer screening with low-dose CT, ideally to a center with experience and expertise in lung cancer screening.
   c. If the person currently smokes, they should receive smoking cessation interventions.

How often?

- Screen every year with low-dose CT.
- Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery.

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision making to the specific patient or situation.

U.S. Preventive Services TASK FORCE

www.uspreventiveservicestaskforce.org

What are other relevant USPSTF recommendations?

The USPSTF has made recommendations on interventions to prevent the initiation of tobacco use in children and adolescents, and on behavioral and pharmacotherapy interventions for tobacco smoking cessation in adults, including pregnant women.

Where to read the full recommendation statement?

Visit the USPSTF website to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision making to the specific patient or situation.

U.S. Preventive Services TASK FORCE
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