

BEST PRACTICES TO REDUCE CANCER IN THE FIRE SERVICE: OFF THE JOB



This factsheet was developed by the International Association of Fire Fighters and the Firefighter Cancer Support Network.

The risk factors most linked to increased cancer rates include numerous modifiable factors.¹ Knowing and making small changes can reduce cancer risks significantly. For example, quitting tobacco before the age of 40 reduces the risk of dying from smoking-related diseases by 90%.²

The following are some of the modifiable risks we face when off duty, in everyday life.

ALCOHOL

It is well studied that consuming alcohol can increase the risk of cancer of the mouth, throat, esophagus, larynx, liver, and breast. The International Agency for Research on Cancer (IARC) classifies alcohol as a group 1 carcinogen. The risk is increased by the amount you consume.³

Data collected over the last decade demonstrate that the fire service has a high rate of heavy and binge drinking. The amount of alcohol consumed over time is the most important factor in raising cancer risk. Alcohol metabolizes into acetaldehyde, which most researchers say is the leading cause for the increase in risk.⁴

WHAT CAN YOU DO?

Drink in moderation: According to the American Cancer Society Guideline for Diet and Physical Activity for Cancer Prevention, it is best not to drink alcohol. People who choose to drink alcohol should limit their intake to no more than two drinks per day for men and one drink a day for women.

TOBACCO

Fire fighters have lower rates of cigarette smoking than the general population; however, cigars and smokeless tobacco are used at a higher rate.⁵ Tobacco use can cause several cancers, including cancer of the lung, larynx, mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, colon and rectum, cervix, and acute myeloid leukemia. Smokeless tobacco is linked to increased risks of mouth, esophagus, and pancreas.⁶

WHAT CAN YOU DO?

Quit using tobacco products. There is no safe level of tobacco use. Quitting smoking today will immediately reduce the risk for cancers associated with tobacco use and have substantial gains in life expectancy compared with those who continue to smoke. Also, quitting smoking at the time of a cancer diagnosis reduces the risk of death.

Need help quitting? The Centers for Disease Control and Prevention (CDC) provides coaching and resources through a free call to the Quitline at 1-800-QUIT-NOW (800-784-8669)



¹ National Cancer Institute. (2015, 12 23). National Cancer Institute. About Cancer. Retrieved from Cancer Causes and Prevention Risk Factors for Cancer: <https://www.cancer.gov/about-cancer/causes-prevention/risk>.

² American Cancer Society. (2020). All About Cancer. Retrieved from Health Benefits of Quitting Smoking Over Time: <https://www.cancer.org/cancer/risk-prevention/tobacco/benefits-of-quit-smoking-over-time.html>

³ American Cancer Society. (2020). All About Cancer: Cancer Risk and Prevention Diet and Physical Activity. Retrieved from Alcohol Use and Cancer: <https://www.cancer.org/cancer/risk-prevention/diet-physical-activity/alcohol-use-and-cancer.html>

⁴ Jahnke, S., Haddock, C., Jitnarin, H., Kaipust, S., Hollerbach, B., & Caentano, R. (2022). ALCOHOL & the FIRE SERVICE: a research monograph. Kansas City: NDRI.

⁵ Haddock CK, J. N. (2011). Tobacco use among firefighters in the central United States. *Am J Ind Med*.

⁶ Centers for Disease Control and Prevention. Factsheet: Smokeless Tobacco: Health Effects. December 2016.

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SUNLIGHT

Sun exposure is a risk that we have control over reducing. The sun, sunlamps, and tanning booths are all sources of ultraviolet (UV) radiation that damages the skin. Excessive UV exposure is directly linked to skin cancer. The risk for melanoma, the most serious form of skin cancer, is increased with exposure to UV radiation from all sources.

WHAT CAN YOU DO?

Limit the amount of time spent in the sun and protect your skin by using sunscreen with sun protection factor (SPF). Reduce your time in the sun, especially between mid-morning and late afternoon, and avoid other sources of UV radiation, such as tanning beds. Keep in mind that UV radiation is reflected by sand, water, snow, and ice and can go through windshields and windows.

- Wear clothing that protects your skin. Hats, long sleeve shirts, and long pants made from tightly woven fabric or fabrics rated with an ultraviolet protection factor (UPF).
- Wear sunglasses that block UV radiation to protect the skin around your eyes.
- Use sunscreen products with a SPF of at least 15. (Some doctors suggest using a product with an SPF of at least 30.) Apply the product's recommended amount to uncovered skin 30 minutes before going outside and apply again every two hours or after swimming or sweating.
- Get screened for skin cancer: Screenings for skin cancer are a simple effective tool for reducing the risk of dying from skin cancer. Melanoma found early is highly treatable. To locate a dermatologist in your area, visit the American Academy of Dermatologists at find-a-derm.aad.org.

OBESITY/DIET

There are higher rates of fire fighters being overweight or obese in comparison to the general population,⁷ making this an important topic for both cancer prevention and the overall health of the fire service. Research demonstrates that obesity may increase the risk of several types of cancer, including cancers of the breast, colon, rectum, endometrium, esophagus, kidney, pancreas, and gallbladder. At least 18% of all cancers and about 16% of cancer deaths in the U.S. are related to excess body weight, physical inactivity, alcohol consumption, and/or poor nutrition.⁸

Excess body weight may affect cancer risk by affecting inflammation in the body, cell and blood vessel growth, hormone levels, such as insulin and estrogen, which can fuel cell growth, and other factors that regulate cell growth and the ability of cancer cells to spread.⁸ Changes that occur with weight loss suggest it may reduce cancer risk.

WHAT CAN YOU DO?

Eat right, exercise, and maintain a healthy weight.

- Eating a healthy diet, being physically active, and keeping a healthy weight may help reduce the risk of some cancers. The American Cancer Society recommends achieving and maintaining a healthy weight throughout life. One way is to develop a healthy eating pattern.

A healthy eating pattern includes:

- Foods that are high in nutrients in amounts that help you get to and stay at a healthy body weight.
- A variety of vegetables – dark green, red, and orange, fiber-rich legumes (beans and peas), and others

⁷ Walker S. C. Poston, P. M. (2011). The Prevalence of Overweight, Obesity, and Substandard fitness in a population-based firefighter cohort. 266–273.

⁸ American Cancer Society. (2020, 6 9). All About Cancer. Cancer Risk and Prevention Diet and Physical Activity. Retrieved from Body Weight and Cancer Risk : <https://www.cancer.org/cancer/risk-prevention/diet-physical-activity/body-weight-and-cancer-risk/effects.html>

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- Fruits, especially whole fruits in a variety of colors
- Whole grains

A healthy eating pattern **limits or does not include:**

- Red and processed meats
- Sugar-sweetened beverages
- Highly processed foods and refined grain products
- Alcohol

Be physically active:

- Adults should engage in 150–300 minutes of moderate-intensity physical activity per week or 75–150 minutes of vigorous-intensity physical activity, or an equivalent combination.
- Exceeding the upper limit of 300 min is optimal.
- Limit sedentary behavior, such as sitting, lying down, and watching television, and other forms of screen-based entertainment.



THE IAFF FIT TO THRIVE (F2T) PROGRAM CAN HELP.

The evidence that regular exercise can help reduce the risk of cancer and other health impacts in fire fighters is irrefutable. Fitness is recommended as one of the first options for treating and preventing chronic conditions. Emerging evidence highlights the need for behavioral solutions to improve the physical activity habits of fire fighters. Your health and wellness, attitude, interests, choices, and actions, as well as the culture of your department, must all be considered in developing a program. Born as an extension of the IAFF/IAFC Wellness-Fitness Initiative (WFI) and the IAFF/IAFC Peer Fitness Trainer (PFT) program, F2T is designed to help fire fighters be more active more often so they can experience the benefits of regular exercise. Visit iaff.org/F2T for more information.

SLEEP

The World Health Organization classifies shift work as a probable carcinogen. Many fire fighters experience sleep disruptions on and off the job. With 24/7 alertness and responsiveness, sleep is often put on the backburner during work and that can translate to poor sleep habits at home too. Sleep loss has not only been correlated with cancer but also a host of other disorders like heart attacks, obesity, anxiety, depression, and suicide. A cancer research center in Seattle, Washington, found that people who slept less than six hours per night before their cancer diagnosis were 1½ times more likely to die from the disease than people who slept 7–8 hours per night.⁹

WHAT CAN YOU DO?

Recognize that sleep is an essential aspect of maintaining good health both at home and at work.

Follow these tips from the American Academy on Sleep Medicine to establish healthy sleep habits, especially when off duty and try to implement some while on duty:¹⁰

- Keep a consistent sleep schedule. Get up at the same time every day, even on weekends or during vacations.
- Set a bedtime that is early enough for you to get at least 7–8 hours of sleep.
- Make your bedroom dark, quiet, and relaxing. Keep the room at a comfortable, cool temperature. Limit

⁹ Fire Fighter Health + Safety Collaborative. (2023, October 15). Sleep and Wellness. Retrieved from firefighterhealthandsafety.org/health/sleep-wellness/

¹⁰ American Academy of Sleep Medicine. (2020, August). Healthy Sleep Habits. Retrieved from <https://sleepeducation.org/healthy-sleep/healthy-sleep-habits>

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exposure to bright light in the evenings.

- Turn off electronic devices at least 30 minutes before bedtime. If you cannot sleep, do not use electronics.
- Do not eat a large meal before bedtime. If you are hungry at night, eat a light, healthy snack.
- Exercise regularly and maintain a healthy diet.
- Avoid consuming caffeine in the afternoon or evening.
- Avoid consuming alcohol before bedtime.

STRESS

Does stress contribute to cancer? The research is varied, but chronic stress can be harmful. Research reveals people experiencing chronic stress can have a weakened immune system, heart disease, sleep difficulties, depression, and anxiety. The research is varied if chronic stress leads to increased cancer rates, however Anil K. Sood, M.D., professor of Gynecologic Oncology and Reproductive Medicine at MD Anderson reports that no-end-in-sight stress can weaken the immune system, leaving you prone to diseases like cancer. “Chronic stress also can help cancer grow and spread in a number of ways,” Sood says.¹¹ Stress hormones can inhibit the process that kills diseased cells. Chronic stress also increases certain growth factors that increase your blood supply, speeding the growth of cancerous tumors.

WHAT CAN YOU DO?

Find a healthy way to cope with stress. If you can, remove the stress. If you cannot remove the stress, then you need to identify healthy habits to manage stress. Some suggestions from the Mayo Clinic include:

- Eat a healthy diet and get regular exercise. Get plenty of sleep, too.
- Do relaxation exercises such as yoga, deep breathing, massage, or meditation.
- Keep a journal. Write about your thoughts or what you’re grateful for in your life.
- Take time for hobbies, such as reading or listening to music. Or watch your favorite show or movie. Foster healthy friendships and talk with friends and family.
- Volunteer in your community.
- Organize and focus on what you need to get done at home and work and remove tasks that aren’t needed.
- Seek professional counseling. A counselor can help you learn specific coping skills to manage stress.

STRESS

Your occupational exposures cannot change, but you can adopt safer policies and habits to reduce your exposure to toxic chemicals. Off duty there are additional factors that can increase your risk of developing cancer. While some risk factors cannot be avoided, others can be modified to promote health. Knowing the risk and modifying lifestyles can in many ways provide a buffer to the occupational exposure fire fighters in various situations cannot be avoided.

Simply put, limiting your exposure to avoidable risk factors may lower your risk of developing cancer.

¹¹ Heid, M. (2014, December). How stress affects cancer risk. Retrieved from MD Anderson Cancer Center : <https://www.mdanderson.org/publications/focused-on-health/how-stress-affects-cancer-risk.h21-1589046.html>.