

Occupations and Workplaces

Fire Fighter

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What should I know before reading about this occupation?

This profile summarizes the common issues and duties for fire fighters. Fire fighters may be called to any number of settings or workplaces. It is impossible to predict all of the possible hazards a fire fighter may encounter. The demands of fire fighting can be sporadic and unpredictable with intermittent periods of intense physical and psychological stress. This summary focuses on the major job duties that most fire fighters (those fighting primarily structural fires) would have in common.

What, briefly, does a fire fighter do?

Main duties of a fire fighter include:

- Respond to fire alarms, incidents (automobile, industrial, aviation, etc.), building collapses, acts of nature (tornadoes, floods, etc.) and other emergencies.
- Rescue victims.
- Control fire using various equipment and methods (axes, water, chemical extinguishers, ladders, vehicles, boats, etc.).
- Provide first aid.
- Provide safety education to the public.

Specialized teams may be organized to respond to emergencies involving specific hazardous products or situations.

What are some health and safety hazards associated with being a fire fighter?

- While helping victims, there is possible exposure to contagious and infectious diseases including blood borne diseases such as [AIDS](#), hepatitis [B](#) and [C](#).
- Exposure to various combustion products. The toxicity of the smoke depends greatly on the fuel (the materials or chemicals being burnt), the heat of the fire, and how much oxygen is available for combustion. Common combustion products include:
 - fine particulate matter
 - [carbon monoxide](#)
 - [carbon dioxide](#)
 - nitrogen oxides
 - sulfur oxides
 - volatile organic compounds
 - formaldehyde
- Oxygen depletion - Hypoxia (the condition caused by little or no oxygen in the air) can result in a loss of physical performance, confusion, and inability to escape.
- Exposure to other chemicals, products, pharmaceuticals and medicines, including opioids.
- Working with compressed gases (e.g., self-contained breathing apparatus)
- Situations where physical demands involve very strenuous work, force, repetition, awkward postures and prolonged activities, often under extreme conditions, including:
 - overexertion (reaching, carrying, etc.) and other risk factors for [work-related musculoskeletal disorders](#) .
 - walking or standing for long periods of time.
 - [lifting](#).
- Wearing heavy equipment, self-contained breathing apparatus (SCBA), and personal protective equipment which may require more effort to perform the same tasks.
- [Heat stress](#)
- Excessive [noise](#) levels

- Ultraviolet radiation
- Extreme temperatures (both cold and heat)
- Extreme working conditions
- Danger of driving at high speeds, often in difficult traffic or [weather](#) condition
- When responding to a fire emergency, there are many situations (e.g., the fire itself structures breaking, unstable floors and falling objects), where there is a risk of injury.
- Fires can also create dangerous situations such as:
 - Sudden ignition of products creating flashover.
 - Backdraft where air is introduced to an area that is superheated and oxygen starved.
- Working on ladders
- Falls from heights
- Slips, trips and falls
- Risk of injury from the various locations where fire department may be called to: explosion, unstable structures and surfaces, falling objects; or [working at heights](#) or [near traffic](#), [water](#), [confined spaces](#), large crowds, violent situations, etc.
- Working with chainsaws or similar equipment
- Exposure to serious traumatic events (or consequence of the event) resulting in [stress](#) or post-traumatic stress disorder
- [Work shifts](#) or [extended work days](#)
- [Fatigue](#)
- [Workplace violence](#) or harassment, and harassment from the public

Are there any long-term health effects of being a fire fighter?

The International Agency for Research on Cancer (IARC) has evaluated the carcinogenicity of occupational exposure of a firefighter as carcinogenic to humans (Group 1) based on sufficient evidence for cancer in humans. IARC concluded that there was:

- sufficient evidence for the following cancer types: mesothelioma and bladder cancer.
- limited evidence for the following cancer types: colon cancer, prostate cancer, testicular cancer, melanoma of the skin, and non-Hodgkin lymphoma

Fire fighters also develop:

- back injuries and other strains.

- diseases such as AIDS and hepatitis.
 - cardiovascular disease due to a multitude of toxic substances when fighting a fire. For example, carbon monoxide exposure is directly linked with cardiac toxicity.
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What are some general safe work practices to know?

Fire fighters will need to know:

- the correct [routine practices](#) procedures to prevent blood borne pathogen infection. (e.g., AIDS, hepatitis B and C).
- [hand washing](#) and [routine practices](#)
- proper selection, use, maintenance and storage of personal protective equipment ([PPE](#)), where appropriate.
- selection of [footwear](#).
- prevention of [needlestick injuries](#).
- [manual material handling](#) (lifting) techniques.
- information about [shiftwork](#).
- how to [work alone](#) (general information) and [working alone with patients](#).
- working safely on [ladders](#).
- how to work safety with [compressed gases](#).

All workers should:

- follow company safety rules.
 - know about [WHMIS](#) and [SDSs](#).
 - know your [hazard reporting](#) procedures.
 - follow good [housekeeping](#) procedures.
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Where can I get more information?

Because of the wide variety of situations where a fire fighter may work, and the vast range of activities done and materials encountered, all situations cannot be covered in this document.

NOTE: If you have health concerns, ask your doctor or medical professional for advice.

If you have any questions or concerns about your specific workplace, you can ask one or more of the following for help:

- your health and safety committee or representative.
- your union.
- your safety department.
- your supervisor or manager.
- check with your local library.
- your local [government department responsible for health and safety](#).

General information is available in OSH Answers or through the CCOHS person-to-person [Inquiries Service](#).

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