

# MALE REPRODUCTIVE CANCERS AND FIREFIGHTING



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

Fire fighters are exposed to a range of carcinogenic chemicals, increasing their risk of developing cancer. Some of these chemicals have been linked to the development of male reproductive cancers, such as prostate and testicular cancer. This factsheet provides an overview of both male cancers, the common fire fighter exposures associated with each, and relevant National Fire Protection Association (NFPA) 1582 recommendations.

## PROSTATE CANCER

Prostate cancer begins when cells in the prostate gland, located below the bladder, start to grow out of control. The majority of prostate cancers develop from gland cells and are termed adenocarcinomas.<sup>i</sup>

Numerous studies have found an increased risk of prostate cancer among fire fighters. The International Agency for Research on Cancer (IARC) 2010 monograph explored the risk of prostate cancer among fire fighters and indicated a **30% increased risk** of developing prostate cancer.<sup>ii</sup> IARC lists occupational exposures of fire fighters as a carcinogenic exposure with evidence for increased prostate cancer risk.<sup>iii</sup>

Occupational exposures associated with prostate cancer include endocrine-disrupting chemicals, such as phthalates, polychlorinated biphenyls (PCBs), and polybrominated diphenyl ethers (PBDEs), as well as benzene and arsenic. Shiftwork has also been shown to increase the risk of prostate cancer.<sup>iv</sup>

## TESTICULAR CANCER

Testicular cancer is the uncontrolled growth of abnormal cells in one or both of the testicles. More than 90% of testicular cancers start in the germ cells, which are cells that make sperm.<sup>v</sup>

A meta-analysis (review of multiple studies) that pooled data from 29 studies in the fire fighter cancer literature revealed a statistically significant **34% increased risk** for testicular cancer as it relates to the occupation.<sup>vi</sup> In addition, an earlier meta-analysis performed by IARC also observed a significant **47% increased risk**.<sup>vii</sup> Occupational exposures associated with testicular cancer include benzene, perfluorooctanoic acid (PFOA), and endocrine-disrupting chemicals, such as dioxins and PCBs.

## RELEVANT NFPA 1582 STANDARDS

It is important for all fire fighters to receive an NFPA 1582 annual medical exam, which includes necessary cancer screenings. For male fire fighters, the standard includes the following:

- Due to increased prostate cancer risks, discuss with your physician the risks and benefits of prostate cancer screening, including prostate-specific antigen (PSA) testing, beginning at age 50 and annually thereafter.
- For fire fighters who are at a higher risk for prostate cancer (e.g., African Americans or when one or more first-degree relatives have been diagnosed with prostate cancer at an early age), the physician shall discuss the risks and benefits of prostate cancer screening, including PSA testing, beginning at age 40 and annually thereafter.
- For testicular cancer, a baseline examination shall be performed by a health care provider followed by routine self-examination is recommended.



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## SOURCES

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