



# The Training Brief

## Quick Reference mini-training Topics Scientific Studies of Cancer in the Fire Service

*The purpose of this training topic is to understand scientific research in regards to the cancer in the fire service.*

### Discussion

**Fact:** Firefighters have a 9% greater risk of being diagnosed with cancer than the general public and a 14% higher risk of dying from occupational cancer than the general public. Multiple scientific studies have repeatedly proven that higher rates of numerous types of cancers occur in firefighters compared to the general American population.

Exposures can subsequently have both short and long-term negative health impacts.

**Key Points:** Studies demonstrate further evidence that fire fighters are at increased risk of certain types of cancer as a result of occupational exposure.

**Action:** Prevention is key both on the fireground and in the fire station, as well as personally with our health.

Take the needed actions to protect yourself and reduce your exposures.

Firefighters have a 9% higher risk of being diagnosed with cancer than the general U.S. population



Firefighters have a 14% higher risk of dying from cancer than the general U.S. population.

**Make the necessary changes**

*Cancer is the most dangerous under-recognized threat to the health and safety to our nation's firefighters. It is the #1 cause of firefighter Line of duty Deaths.*

*Many scientific studies have repeatedly proven that numerous types of cancers occur in firefighters at higher rate compared to the general American population.*

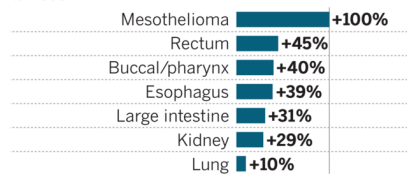
*Exposures can have both short and long-term negative health impacts.*

#### Key Studies:

- NIOSH Study
- LeMasters Meta-Analysis
- Nordic Study
- Jalilian Meta-Analysis

#### NIOSH study

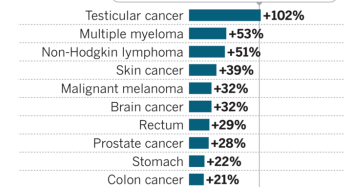
A National Institute of Occupational Safety and Health study looked at 29,993 career firefighters from 1950 to 2009.



#### LeMasters meta-analysis

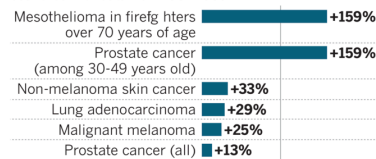
A 2006 study done at the University of Cincinnati that pooled data from 32 smaller studies.

At a 100 percent increase of cancer risk, a firefighter has double the chance of a cancer.



#### Nordic study

The study looked at 16,442 firefighters from five Nordic countries with data from 1961-2005.



Sources: cancer risk among firefighters: a review and meta-analysis of 32 studies; mortality and cancer incidence in a pool cohort of firefighters from San Francisco, Chicago, and Philadelphia; cancer incidence among firefighters: 45 years of follow-up in five Nordic countries; Centers for Disease Control and Prevention

Cancer Site	Jalilian et al Meta-Analysis 2019
Prostate	1.15 [1.05-1.27]
Testicular	1.34 [1.08-1.68]
Thyroid	1.22 [1.01-1.48]
Melanoma	1.21 [1.02-1.45]
Rectum	1.09 [1.00-1.20]
Colon	1.14 [1.06-1.21]
Bladder	1.12 [1.04-1.21]
Pleura	1.60 [1.09-2.34]

*Multiple studies have demonstrated credible evidence and biologic credibility for statistically higher rates of cancer in firefighters than the general public. "While more studies will be helpful and provide more definitive information, we already know enough to take preventative actions to reduce exposure, especially for new firefighters, we now know enough to recommend and require changes" Grace LeMasters.*