

Conducted in Partnership with the National Cancer Institute and the U.S. Fire Administration



## Notes from the Study Director

Greetings from NIOSH!  
We are excited to be winding up our first report from the Fire Fighter Cancer Study, one of the largest studies of fire fighters ever done in the United States.

To date, we have analyzed patterns in the causes of death and cancer diagnoses for our study group of fire fighters in the Chicago, Philadelphia, and San Francisco Fire Departments. Before our results can be published, the draft report undergoes a rigorous review by experts within NIOSH and at other institutions to verify that our findings are unbiased and sound.

We expect that our results will be published in the early fall and available for discussion in our next newsletter.

In this issue we include updates to several of our regular features, including the study timeline, a brief summary of recent research of health concerns among fire fighters, and frequently asked questions about our study. We also highlight the Chicago Fire Department and discuss our new NIOSH Directory of Fire Fighter Resources, which can be found at [www.cdc.gov/niosh/firefighters/](http://www.cdc.gov/niosh/firefighters/). Please let us know how we might make this new webpage more useful or easier to use.

Thanks for your interest and your help,

Robert (Doug) Daniels, PhD  
Health Scientist  
Director, NIOSH Fire Fighter Cancer Study

## Timeline

- 2010:** NIOSH study of U.S. fire fighters began, in partnership with the National Cancer Institute and the U.S. Fire Administration. Chicago, Philadelphia, and San Francisco Fire Departments were selected for the study.
- 2011:** Study roster was completed and exposure and work history information was collected.
- 2012:** Causes of death and cancer diagnoses were identified among the fire fighters in the study using the National Death Index and state tumor registries.
- 2013:** Study analyses are in process. Results are expected to be published in the early fall and available for discussion in our next newsletter.
- 2014:** Results will be communicated to fire fighters, stakeholders, and the public.

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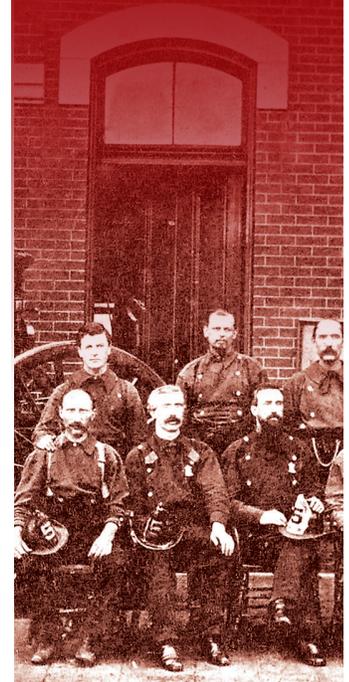


Photo Courtesy of the Chicago Fire Department

## Spotlight: Chicago Fire Department (CFD)

*Below is the third in our series of profiles of the fire departments participating in the NIOSH Fire Fighter Cancer Study. Information was gathered from History of Chicago Fire Houses by Ken Little and John McNalis, the City of Chicago, and the Fire Museum of Greater Chicago [www.firemuseumofgreaterchicago.org](http://www.firemuseumofgreaterchicago.org).*

The Chicago Fire Department is the largest fire department in the Midwest and one of the largest departments in the country. It's also one of the oldest major organized fire departments, as its volunteer company was established before 1833.

### Early days

In 1835 an ordinance required every occupant or owner of a store or dwelling “to have one good painted leather fire-bucket, with the initials of the owner’s name painted thereon” for each fireplace or stove in the building and hung within easy reach. At that time, the engine house was where City Hall now stands. Its 12 x 24 ft. building included a cistern built of pine that held two hogsheads (126 gallons) of water.

Hose carts pulled by men running at full speed and a fire alarm telegraph system were important parts of the young department. Steam engines drawn by horses made their first appearance after the paid fire department was organized in 1858.

Widespread fires convinced the leaders of the growing city that a well-organized and equipped fire department was essential. The Great Fire of 1871 left some 200-300 people dead, 18,000 buildings destroyed and 75,000 people without homes.

Highlights of the Department’s history:

- Following a fire on July 14, 1874, the CFD was reorganized with six battalions to offer better supervision. Reorganization also included the use of military ranks for officers and military terms such as battalions and divisions for sections of the city.
- February 5, 1923 – Motors replaced horses in powering fire trucks as Chicago became the first major city in the U.S. to completely motorize its fire department.
- January 1, 1958 – the Bureau of Fire Investigation was created.
- May 1961 – the Fire Academy was dedicated on the site of the famous O’Leary home where the Great Chicago Fire of 1871 started.
- January 22, 2001 – the Bureau of Operations was formed from a merger of the Bureaus of Fire Suppression & Rescue and Emergency Medical Services.

### CFD today

Today more than 4,500 uniformed fire fighters and paramedics serve in the Department’s Bureau of Operations. They respond to fires, medical emergencies, hazardous material incidents and other emergency situations, ensuring the safety and well-being of Chicago residents and the 28 million visitors who pass through the city’s airports.



Dan and Teddy pull Engine 11’s hose wagon of Fire Box 848 on Feb 5, 1923 on the last horse-drawn run for the CFD.  
Photo Courtesy of the Chicago Fire Department

## New Online Directory of NIOSH Fire Fighter Resources

Within NIOSH, we work to address the safety and health concerns among fire fighters. In addition to our cancer study, researchers at NIOSH work on

- identifying job-related exposures and how to reduce them
- improving Personal Protective Equipment (PPE)
- examining Line of Duty Deaths to make recommendations to help keep fire fighters safe

With so many different fire fighter-related projects, publications and programs, we created an online directory page to organize all of the NIOSH fire fighter-related efforts. You can visit the page at [www.cdc.gov/niosh/firefighters/](http://www.cdc.gov/niosh/firefighters/). (See below.)

### FIRE FIGHTERS

This page provides information about NIOSH fire fighter research. Within this site, you will find summaries and links to current NIOSH projects, programs, publications, and resources created to improve the health and safety of structural/vehicle fire fighters and wildland fire fighters.

If you have suggestions for improving our site, or have a question you cannot find an answers to, please contact us at [FFstudy@cdc.gov](mailto:FFstudy@cdc.gov).

#### NIOSH Studies and Publications

##### Structural/Vehicle Fire Fighters

Cancer, Injuries, and Other Illnesses  
Fire Fighter Fatality Investigation Reports  
Job Hazards  
Personal Protective Equipment  
World Trade Center Response

##### Wildland Fire Fighters

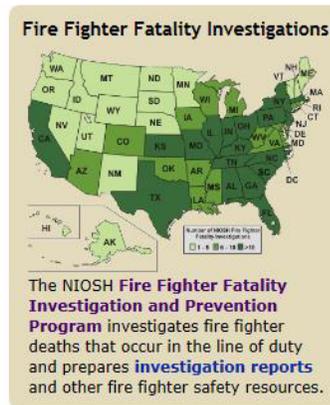
Fire Fighter Fatality Investigation Reports  
Fighting Wildfires

#### Fire Fighter Resources

Other Fire Fighter Organizations and Other Resources  
Certified Respirator List (NIOSH Certified Equipment List)  
Respirator Certification, Testing, and Notices (National Personal Protective Technology Laboratory home page)  
Chemical Health and Safety Information (International Chemical Safety Cards)  
NIOSH Pocket Guide to Chemical Hazards

#### Other NIOSH Topic Pages that Relate to Fire Fighters

- Anthropometry
- Bloodborne Infectious Diseases
- Cancer
- Carbon Monoxide
- Chemical Hazards
- Confined Spaces
- Electrical Safety
- Emergency Preparedness and Response
- Ergonomics
- Falls from Elevations
- Heart Disease
- Heat Stress
- Motor Vehicle Safety
- Natural Disasters
- NIOSH Public Safety Council
- Noise and Hearing Loss
- Personal Protective Equipment (PPE)
- Stress
- Total Worker Health
- Traumatic Injuries
- Traumatic Incident Stress
- Work Schedules



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#### Contact Us:

[National Institute for Occupational Safety and Health \(NIOSH\)](#)  
Centers for Disease Control and Prevention  
800-CDC-INFO (800-232-4636)  
TTY: (888) 232-6348  
New Hours of Operation  
8am-8pm ET/Monday-Friday  
Closed Holidays  
[Contact CDC-INFO](#)

The new page is meant to be a one-stop shop to find information about the fire fighter-related initiatives going on at NIOSH as well as links to our publications and resources. The site will be useful for health and safety experts, researchers, and academics. We will be expanding and improving the page to make it more useful to fire fighters.

This is where you come in. We would love to hear your feedback about what you like and don't like about the page. Please share ideas for expanding the page – what information do you think would be helpful? Is there job-related information you'd like to know that you cannot find anywhere else? Please email us at [FFstudy@cdc.gov](mailto:FFstudy@cdc.gov). We hope to hear from you!

## Recent Studies of Health Concerns among Fire Fighters

### Cardiovascular Disease

Soteriades ES, Smith DL, Tsismenakis AJ, Bauer DM, Kales SN (2011). Cardiovascular Disease in US Firefighters: A Systematic Review. *Cardiology in Review*, 19: 202-215.

Cardiovascular disease (CVD), also known as heart disease, is the leading cause of on-duty death among fire fighters. The authors of the article reviewed the body of research regarding CVD and fire fighting and summarize their findings in this 2011 review.

They summarize research on occupational hazards, including

- physical exertion
- shift-work
- noise
- smoke exposure
- psychological stress
- heat
- dehydration

The authors also discuss personal risk factors that may influence fire fighter CVD risk, such as diet, smoking habits, obesity, hypertension, high cholesterol, diabetes, and age.

They review the following ways to manage these risks

- pre-placement and periodic medical exams
- Physical Abilities Testing (PAT)
- fitness and wellness programs
- exercise testing
- fitness for duty/return to work evaluations

In particular, the authors stress the importance of preventive measures that identify and manage risk in fire fighters who have a higher risk of a severe cardiovascular event.

### World Trade Center

For information on research about the health effects among World Trade Center fire fighters and other first responders, see [www.cdc.gov/niosh/topics/wtc/science.html](http://www.cdc.gov/niosh/topics/wtc/science.html).

If you have a question, please email it to [FFstudy@cdc.gov](mailto:FFstudy@cdc.gov) or call the NIOSH Industrywide Studies Branch, 513-841-4203.

**Q.** Why were these fire departments chosen for the study and not others?

**A.** Our aim was to gather enough information to effectively examine health effects among career fire fighters. In planning the study, we approached several fire departments in U.S. cities about participating.

In the end, we based the selection of departments on our ability to complete the study efficiently. We looked at a number of factors, such as department size and location, work experience, availability of records, and the willingness of labor and city management to participate.

For more on the NIOSH Fire Fighter Cancer Study and to see previous newsletters, visit [www.cdc.gov/niosh/firefighters/ffCancerStudy.html](http://www.cdc.gov/niosh/firefighters/ffCancerStudy.html).