

KH

WTC Health Program
National Institute for Occupational Safety and Health
395 East Street SW, Suite 9200

Dear John Howard, M.D.
Administrator, World Trade Center Health Program

Topic : Adding ALS to WTC covered illnesses.

Hello my name is [REDACTED] I am a New York City Fireman who has been recently been diagnosed with Amyotrophic Lateral Sclerosis (ALS). I am currently [REDACTED] with 23 years of service in the FDNY. I am the youngest of 8 children with no family history of ALS. All of my bothers and sisters are in good health.

On September 11, 2001, I responded to and operated at the World Trade Center for extended period of time without proper protection as did thousands of other first responders. That day we were exposed to numerous toxins for the entire day. I had dust and soot in my eyes, lungs, ears and everywhere else. I knew that someday I might get sick. Unfortunately I was diagnosed with ALS on [REDACTED]. This was diagnosed over the course of 2 years, it presented as Drop Foot and took sometime to Diagnose. I am married with 3 beautiful children and my health is rapidly declining. I am unable to walk and can not dress, shower or prepare food for my self. My expenses are growing very quickly as well as the treatment and care.

The FDNY does not recognize this disease as it is not on a list of covered WTC illnesses. In fact they do not list any neurological diseases.

ALS is a rare disease that effects 2/100,000 nationwide. The FDNY has maybe 10,000 members even if you have 1 person with ALS that is exponentially higher than the nation average.

James Zadroga's autopsy revealed he had ground glass, asbestos, chromium, lead, benzene in his lungs.

With this in mind how can any doctor know what the effects on the body would be 5,10,15, 20 years later?

A precedent was set in the military, as far as ALS coverage back in 2008.

The military is a much larger group than the FDNY. To get coverage in the military all you need is 90 days of service, anywhere doesn't need to be in war time. They are covered medically 100%. What we experienced 9/11 and the months after were unprecedented for a search and rescue and recovery. We were exposed to more toxins than anyone in the military, especially the first day. The number of deaths of fireman (post 9/11 illnesses) alone is 250 and counting. I knew that day I would probably get sick. I didn't expect ALS. I am asking for ALS to be added to the list of covered 9/11 illnesses. I can't wait 5 years for this to be added my clock is ticking. I need help forthwith please.

RECEIVED JUL 3 2003

In 1975 NYC had a fire which is known as the TELEPHONE FIRE. NYC Bureau of Health Services (BHS) stamped the folders of fireman with a red star. This became known as the Red Star of Death. Many of the fireman who worked that fire died of various illnesses. If you retired and got sick the day after you retired, You were not covered at all.

The point being this is the classic example of deny, delay reduce when dealing with workers health.

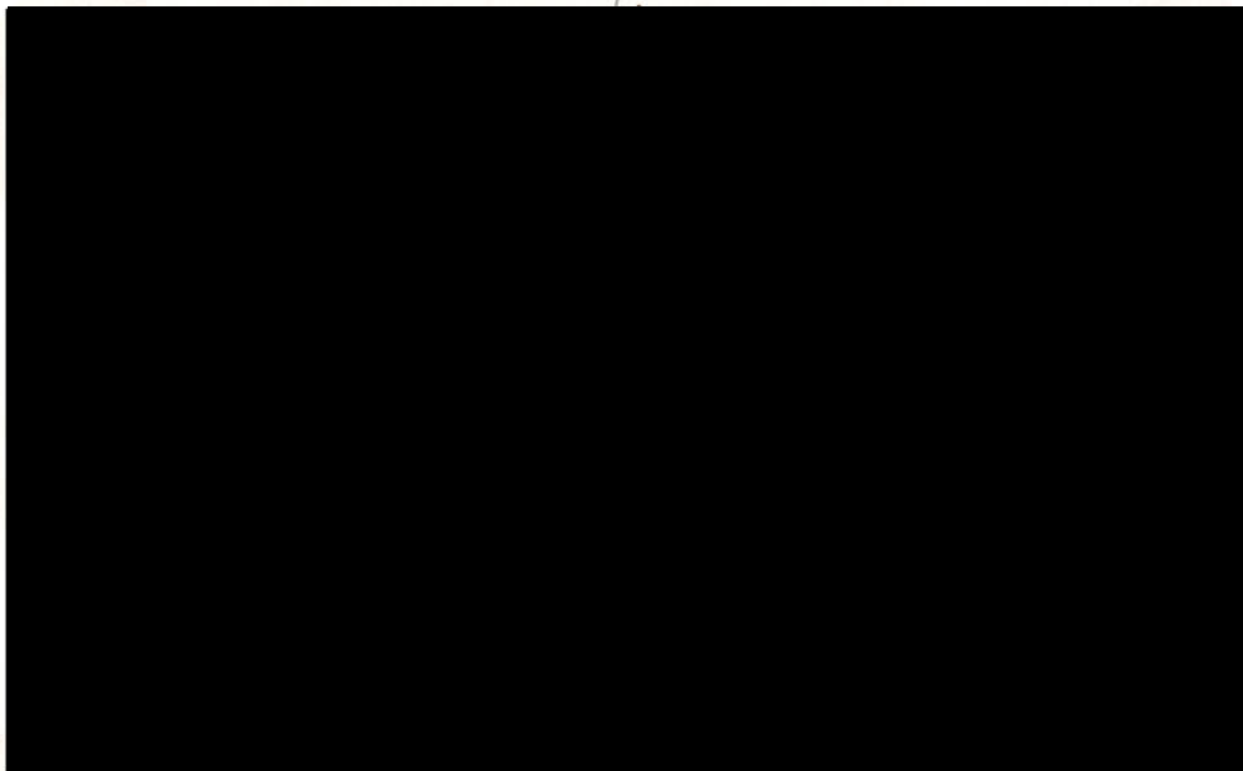
I can prove I was at the WTC site on 9/11 on 9/11/01 and I can prove I am sick, but yet because of some list that excludes my illness I am not covered. My life is being cut short and no doubt it is due to 9/11 and the toxins my body absorbed. I like many rescue workers responded and did our jobs that day. We should have proper health care protection.

NEVER FORGET

I have included information and articles backing up my position. Also included are articles of fireman around the country with ALS. These are just ones that are published. If you Google [REDACTED] ALS.....you will not find any information. There is no data base to track this, The FDNY Union doesn't track this. I know there are Hipaa Lawsbut don't have to know a persons name just need the type of diagnoses to help take care and shed light on these type of illnesses. Any Question please don't hesitate to call.

Thank you,

[REDACTED]



*** Final Report ***



Stony Brook Medicine

[REDACTED]

[REDACTED]

April 06, 2021

To Whom It may Concerned:

This is medical letter confirming that [REDACTED] is under my care. He has Amyotrophic Lateral Sclerosis (ALS) which is a progressive neuromuscular disease causing weakness in both arms and leg along with d speech and swallowing problems ; and respiratory failure. Please do not hesitate to contact me should you have any questions regarding this patient or if I can be of any further assistance.

[REDACTED]

Sincerely,

[REDACTED]



NON BIOLOGICAL EXPOSURE REPORT

Incident Information

Incident Id: 9999999999999999 Box No: Borough: BROOKLYN Location: NA Time of Incident: Injury Date: 09/11/2001

Working Unit: Estimated work time at incident: Report Completion Dt.

Substance Type?

- ☒ Absorbed in eyes/skin/membrane
☒ Inhaled in respiratory system
☒ Ingested in digestive system
☒ At scene, no known contact

Substance Form?

- ☒ Solid
☒ Particulates
☒ Fumes
☒ Liquid
☒ Mist
☒ Noise
☒ Gas
☐ Radiation

Substance was identified by?

- ☒ Visual Identification
☐ Container Label or Placard
☐ D.E.P. Chemist
☐ Shipping Papers

Substance Name:

See Narrative

Substance Identified ?:

FDNY Injury description narrative:

I was present on multiple days during the FDNY's WTC rescue and recovery effort between September 11, 2001 and July 25, 2002. I am submitting this single CD-73 to cover all of my exposure days at the World Trade Center site, at firehouses, the morgues, the Staten Island landfill, and on Fire Department apparatus. I had potential exposures to any or all of the following hazardous substances that have been identified by various specific authorities as being present at Ground Zero. These substances included but were not limited to: World Trade Center particulate matter, smoke from the WTC fires, jet fuel and combustibles, asbestos, silicates, man-made vitreous fibers, polycyclic aromatic hydrocarbons (PAHs), PCBs, dioxins, heavy metals, and human remains from WTC victims. At various times during my WTC-related activities, I feel that my personal protective equipment did not provide me with adequate protection. I believe that the FDNY failed to provide me with proper respiratory protection during all or a portion of the WTC rescue and recovery effort.

Acknowledgement

Has the above Narrative been reviewed by injured member and confirmed by injured member to be accurate?

This event was witnessed by the Officer completing this form.

Officer Name:

Title:

Wrk Phone:

TaxReg #:

Chief's Name:

Statement

- ☐ Yes Read as ACCURATE
☐ Not reviewed at this time

- ☐ Yes
☐ No



NON BIOLOGICAL EXPOSURE REPORT



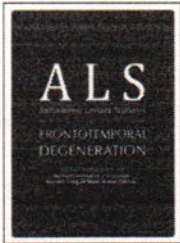
Log in



Register



Cart



Enter keywords, authors

This Journal



Advanced search

Amyotrophic Lateral Sclerosis >

Volume 11, 2010 - Issue 5

[Journal homepage](#)[Home](#) ▶ [All Journals](#) ▶ [Amyotrophic Lateral Sclerosis](#) ▶ [List of Issues](#) ▶ [Volume 11, Issue 5](#)▶ [Job strain, hypoxia and risk of amyotrop](#)

236

ORIGINAL ARTICLE

Views

29

CrossRef citations
to date

0

Altmetric

Job strain, hypoxia and risk of amyotrophic lateral sclerosis: Results from a death certificate study

Nicola Vanacore ✉, Pierluigi Cocco, Domenica Fadda & Mustafa Dosemeci

Pages 430-434 | Received 19 Oct 2009, Accepted 08 Jan 2010, Published online: 11 Aug 2010

Download citation

<https://doi.org/10.3109/17482961003605796>

Full Article

Figures & data

References



 Citations Metrics Reprints & Permissions

Sample our
Medicine, Dentistry, Nursing
& Allied Health Journals
»» Sign in here to start your access
to the latest two volumes for 14 days

EDITINGSERVICES
»» Sign in here to start your access
to the latest two volumes for 14 days

SDG
Online
GOOD HEALTH
AND WELL-BEING
Request a Free Trial Today

Get access

Abstract

Amyotrophic lateral sclerosis (ALS) most likely results from a multifactorial gene-environment interaction. Strenuous physical activity and occupational exposures have been suggested to play a role, and an abnormal response to hypoxia has been proposed in ALS pathogenesis. To test the hypothesis of an excess risk in occupations typically leading to intermittent hypoxia at the tissue level, we accessed a large publicly available database, including death certificates from 24 U.S. states in 1984–1998. We conducted a case-control analysis of 14,628 deaths due to ALS therein reported and 58,512 controls deceased from other selected causes of death, frequency matched by age, gender and broad geographic area. ALS risk associated with physical activity, and occupations leading to intermittent hypoxia, such as fire fighters and professional athletes, were calculated with unconditional logistic regression, adjusting by age, marital status, residence, and socioeconomic status. Physical activity in general did not show an association

Related research

People
also
read

Recommended
articles



with ALS risk. Risk associated with occupation as a professional athlete was elevated (OR = 1.81, 99% CI 0.69–4.78), but not significantly so. Fire fighters showed a significant two-fold excess ALS risk (OR = 2.0; 99% CI 1.2–3.2).

Based on our findings and the current clinical, epidemiological and experimental evidence, we suggest that occupational conditions typically leading to intermittent hypoxia, such as fire fighting, might be an ALS risk factor in subjects genetically prone to an abnormal response to hypoxia.

Q Key words:: Amyotrophic lateral sclerosis fire fighters
professional athletes epidemiology



Studies: First responders at higher risk for developing ALS

Denise A. Valenti

Wednesday, August 27, 2014

7

COMMENTS

[Share this article](#)

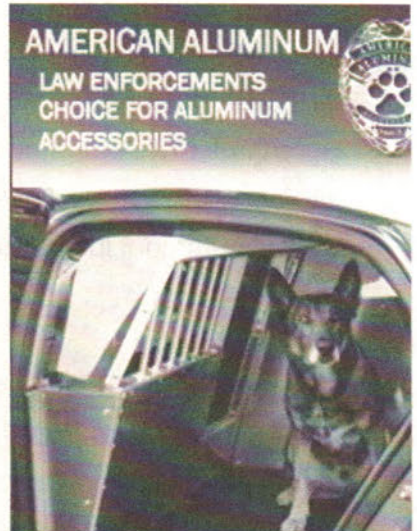
ALS has been all over the news in recent weeks thanks to the latest social media craze. In an effort to increase awareness of the disease, the ALS Association began a social media campaign called the Ice Bucket Challenge.



This viral sensation has attracted thousands of followers who have willingly dropped icy water on themselves and issued the challenge to others to help raise money for battling ALS. As of Aug. 27, the challenge has generated \$94.3 million.

What is ALS? It is a fatal neurological disease that devastates the motor neurons in the brain and spinal cord that control voluntary muscles. The full name is amyotrophic lateral sclerosis, and the disease is more commonly called Lou Gehrig's disease. ALS currently affects more than 12,000 people in the United States, and it is more common among males.

Groups have come up with creative ways to meet this challenge. One such group is the West Windsor Police Department in New Jersey. They partnered with the West Windsor and Princeton Junction Fire Departments



Related Industries

**Law Enforcement,
Defense & Security**

Civil & Government

Related Articles

To fight crime, engage kids in quality after-school programs

7 trigger control errors and how to fix them

Can employees take time off from work to vote?

The stress of 911 call-takers and emergency dispatchers

The Social Security shell game

Children of the badge: The impact of stress on law enforcement children

What the Paycheck Protection Program Flexibility Act means for small employers

Will kids affected by the digital divide be ready for next school year?

and ratcheted up their response to the challenge by using high-powered hoses instead of buckets.

The firefighters involved may not fully appreciate the challenge of ALS and what it means to them in particular. While many recognize that athletes may be more vulnerable to developing ALS — in particular those who had active careers playing football or soccer — less is known about other physically-demanding jobs and the risk for ALS.

In 2010, a research team led by Dr. Nicola Vandacore reviewed the records of 14,628 deaths due to ALS and found that ALS risk is associated with occupations that have intermittent hypoxia and physical activity. The researchers concluded that firefighters and first responders may have a greater risk for ALS.

Early death from motor neuron disease such as ALS was also found to occur more frequently in firefighters in a 1996 study undertaken by the Centers for Disease Control and Prevention. They also found that the janitors, military personnel, teachers, excavation machine operators and veterinarians had a greater risk as well.

The Ice Bucket Challenge certainly has called attention to ALS. For many, the ALS Ice Bucket Challenge is an opportunity to have fun and contribute to a worthy cause. For others, long after the challenge has come to a halt, ALS will continue to be a day-to-day challenge for survival, and each breath is a struggle.

The risk of developing ALS is greater for those who awake each day to protect their communities such as firefighters and first responders. The challenge will be to make sure that money raised is directed to fund research and resources in order to meet the challenge of ALS for patients and their families.

Share this article

About the Author

Dr. Denise A. Valenti is a residency-trained, low-vision/blind-rehabilitation optometrist who has worked closely with sensory and cognitive impairment and the ability to safely drive as a clinical provider. Dr. Valenti provided direct clinical care for more than 25 years and currently

Recent Articles


On the roads again: Transit after COVID-19

Will the lodging industry's supply growth outpace demand?

Why the success of earned value management hinges on repeatable processes

How the changes in Amazon's affiliate program impact businesses

Survey: Employee incentives don't align with their preferences



TROY
UNIVERSITY
Criminal Justice
Bachelor's
and Master's
Degrees.
In class, online
within reach.
[Learn More](#)

RAISE YOUR PROFILE

See your work in
future editions

**YOUR CONTENT,
YOUR EXPERTISE,
YOUR NAME**

Your Industry Needs
YOUR Expert Voice

&
We've got the
platform you need

**Find Out
How**



is active in research and consultation related to vision, aging, neuroprocessing, cannabinoids, cognitive function and driving. She has additional education and expertise in the field of age-related neurodegenerative diseases with the emphasis on Parkinson's disease and Alzheimer's disease. She had been honored as the Alzheimer's Disease Drug Discovery Foundation's outstanding young researcher and was selected by the AARP as an exemplary

gerontology scientist. Her research has included the study of imaging of retinal neural tissue using Optical Coherence Tomography (OCT) and functional assessment of neural processing in the visual system using Frequency Doubling Technology (FDT). The neurocognitive impact of cannabis is an active area of research as is the treatment potential for Alzheimer's disease and Parkinson's disease. She is the principal in the development of technology to detect impairment in the retina and lateral geniculate brain nuclei from cannabis consumption, Impairment Measurement: Marijuana and Driving (IMMAD). The company IMMAD provides education, services and technology for the responsible use of cannabis. Dr. Valenti lectures on marijuana, cannabis, cannabinoids and cognition both nationally and internationally.

NEW POLICE SELECTION VIDEO TEST
New Questions • Revised Content • Video Vignettes
Learn More: ipma-hr.org/assessment



ASSESSMENT PRODUCTS
HIRE & PROMOTE WITH CONFIDENCE
IPMA-HR

[More](#)
[Create Blog](#) [Sign In](#)

JOURNAL OF MODERN HEALING

 Newsletter published by the NY CANCER RESOURCE ALLIANCE 


Thursday, July 11, 2019

A REVIEW OF TOXIC COMPOUNDS FROM EMERGENT FIRE ZONES



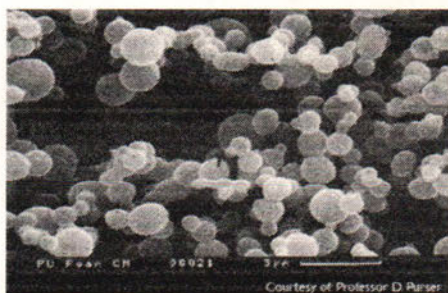
© Copyright 2019 - The Biofoundation for AngioGenesis R&D / IntermediaWorx inc. All Rights Reserved. Published for the NY Cancer Resource Alliance (NYCRA), AwarenessforaCure.org and HealthScanNYC.org

FOREWORD

By Dr. Robert L. Bard, cancer diagnostic specialist (NYC)

After a decade past the 9/11 disaster, news broke of unique and advanced cases of CANCER arising in droves. A growing number of the same individuals exposed to the toxic fumes and plumes of hazardous particles in the danger zone have recently contracted aggressive cases of CANCER and were in immediate demand for medical care and desperate need for advanced research and support.

This spike in cases can only come from 'dormant' cells or recurrence (usually with a vengeance) – such as cases of cancer tumors in the lung, liver, prostate, kidney, brain, skin and even the eye. To troubleshoot each case, it would be advantageous to take a crash course in toxicology and to recognize the chemical compounds that BATHED all responders during the event. Understanding these chemicals can help us pursue their behaviors (on the body) and their long and short term effects.



Courtesy of Professor D. Purser

TOXICOLOGY 101: A THREAT TO FIREFIGHTERS HEALTH

As part of our evaluation of all occupational illnesses contracted by first responders, we enter the world of TOXICOLOGY- the branch of science focused on the effects and detection of poisons. It is also the discipline overlapping chemistry, biology and pharmacology- studying the adverse effects of chemical substances on living organisms. In pursuit of first responders' safety as far as chemical effects on the body, we connected with Professor David Purser of the Hartford Environmental Research (UK), a renowned toxicology expert who conducted major reviews on fire-exposed carcinogens published worldwide. "9/11 was unusual in that a major environmental hazard resulted from the dust cloud released as and after the Towers collapsed," says Prof. Purser. "The dust inhaled by responders at the time, and afterwards working at the site, has resulted in serious ongoing and developing health conditions and to this day.

For fires in general, there is also increasing evidence and concern regarding FF exposure to carcinogens, especially from soot contamination to skin and clothing following attendance at incidents and during training." An abstract from Prof. Purser's latest presentation – "Toxins Including Effects of Fire Retardants, During Fires and Post-Fire Investigation Activities" indicates a remarkable breakdown of some of the major toxins and carcinogenic compounds that the average firefighter would be exposed to.

About Me



Awareness 4aCure

Awareness for a Cure is a FREE full service resource publication for all cancer sufferers and survivors on Long Island and its proximity. AFAC publishes existing grants, posts educational how-to's written by professional experts, publishes current L.I. fundraiser news, presents any and all Island-based cancer foundations and showcases survivor stories through the AFAC blogs and Video Channel. AFAC NEWS comprises of covering 5k walks/races and fundraising efforts to raise \$\$ to find a cure for debilitating diseases. AFAC is established under several non-profit groups: Best Answer for Cancer (tm) and S.I.M.R. (Stoff Integrative Medical Research) and welcomes all cancer-related information for the Long Island reader.

[View my complete profile](#)

Blog Archive

- 2021 (9)
- 2020 (33)
- ▼ 2019 (14)
 - October (2)
 - September (1)
 - August (2)
 - ▼ July (4)
 - 9/11 Asthma Cases & the Firefighters' Cough Contin...
 - CANCER TREATMENT OPTIONS: REVIEW

Below is a list of common toxic elements found in active fires and post-fire investigations that first responders have been known to be exposed to.

- | | | |
|----------------------------|---------------------------|--|
| • (2,3,7,8) Tetrachloro | • Crotonaldehyde | • Metals: Lead (Pb) & Cadmium (Cd) |
| • -dibenzodioxin | • Dibenzofurans | • Nitrogen Oxides (Nox) |
| • Acrolein | • Dioxins | • Organic Irritants |
| • Aldehydes | • Formaldehyde | • Phenol |
| • Asbestos | • Furans | • Phosphorous/Phosphate (P04) |
| • Benz[A]Anthrene | • Histone (H3.3) | • Polyaromatic Hydrocarbons |
| • Benzene | • Hydrochloric Acid (HCl) | • Polychlorinated Biphenyls (Pcbs) |
| • Benzo[A]Pyrene | • Hydrogen Cyanide (HCN) | • Polycyclic Aromatic Hydrocarbon (Pahs) |
| • Carbon Fibre | • Hydrogen Fluoride (HF) | • Styrene |
| • Carbon Monoxide | • Isocyanates | • Sulfur Dioxide (SO2) |
| • Carbonyl Fluoride (COF2) | • Metal Particulates | |
| • Ceramic | | |

According to Prof. Purser's presentation on "Fire Retardants and their Potential Impact on Fire Fighter Health" ** the highest and most active toxins threatening survival during or immediately after a fire are:

- **ASPHYXIANT GASES:** CO, HCN, CO2, low oxygen
- **IRRITANTS/ ACID GASES :** HCl, HBr, HF, COF2, H3 PO4, SO2, NOx
- **ORGANIC IRRITANTS:** acrolein, formaldehyde, crotonaldehyde, phenol, styrene
- **PARTICULATES:** especially ultrafine particles + metals

These toxins are usually found within active fire zones- either inside the fire event itself or downwind plume in the form of residues and soot or lethal fragments activated at high temperatures or in airborne smoke. These asphyxiant gases, irritants and particulates are the main causes of injury and death of fire victims exposed to high concentrations inside burning buildings. Asphyxiant gases cause collapse with loss of consciousness during a fire, leading to death if exposure continues. Irritants and smoke particulates cause pain to the eyes and lungs, with breathing difficulties, which inhibit escape during a fire and can lead to lung inflammation and edema within a few hours of rescue, which can also be fatal. Those surviving may make a good recovery or suffer long term neurological or cardio-respiratory health effects, depending on the severity of the exposure. Those most at risk from these effects at the fire scene are building occupants and emergency responders not protected by breathing apparatus.

Beyond the immediate fire zone, especially outside a burning building, or during wildfires, these toxic smoke products are considerably diluted by mixing with outside air, so are generally not immediately life-threatening. The main hazards to unprotected persons exposed to the diluted smoke plume in the surrounding area are health risks from inhalation of smoke irritants and soot particulates, or from inhalation of mineral particles and fibers. The immediate effects of exposure are mainly eye and throat irritation, with a sore throat and cough in some cases over a period of a few days, although persons with pre-existing respiratory or circulatory health conditions may be more severely affected. Longer term health hazards following a single exposure may result from inhalation of sensitizers (such as isocyanates or formaldehyde), which can cause asthma, or from some mineral dusts and fibers, which may remain in the lungs. Health risks from exposure to carcinogens during a single incident are generally low, although the World Trade Center dust and some chemical fires may be exceptions.

Health risks to firefighters result mainly from repeated exposures to inhalation of smoke toxicants and contact with soot deposits. These contain a wide variety of carcinogens, so that cumulative exposure over years may present an increased cancer risk. The hazards arise from inhalation of smoke, soot or mineral fibers, but also from soot contamination of skin or clothing. This can result in dermal, inhalation or oral ingestion, resulting in increased exposure to carcinogens, including dioxins and dibenzofurans, during post-fire activities. Halogenated fire retardants (especially chlorine and bromine systems), present possible increased health risks to fire victims and firefighters during fires due to inhibition of combustion in the vapor phase resulting in inefficient combustion with an increase in yields of toxic carbon and nitrogen compounds, in addition to the formation of acid gases, dioxins and dibenzofurans under all fire conditions..**

Reference:

** Prof. David Purser's presentation on Toxic Hazards to Fire Fighters, Including Effects of Fire Retardants, During Fires and Post-Fire Investigation Activities (NIST). Gaithersburg MD on 9/30/2009 https://www.nist.gov/sites/default/files/documents/efire_research/4-Purser.pdf

Reflectance
Confocal
Microscopy
(RCM)- The
latest ...

A REVIEW OF
TOXIC
COMPOUNDS
FROM
EMERGENT
FIRE
ZONES

► May (4)

► April (1)

"IT ALL STARTS AT THE LUNGS"

Historical Patterns of Carcinogenic Reactions from Environmental Disasters by: Dr. Jesse Stoff



During airway inflammation, higher-than-normal levels of nitric oxide (NO) are released from epithelial cells of the bronchial wall. The concentration of NO in exhaled breath, or fractional exhaled nitric oxide (FeNO), can help identify allergic/eosinophilic inflammation, and thereby support a diagnosis of asthma when other objective evidence is lacking. (See NIOX.com)

There are other testing available which helps us to do a direct visualization of the upper and lower levels. For example, there's the **bronchoscopy** for the lungs and air passages and then there's the **laryngoscopy** to visualize the nasal cavity, the sinus, sinusitis, the larynx, because many of these patients have acute or chronic laryngitis because getting exposed to the several toxins. Also, many of them have gastro esophageal reflux, so when you look at that endoscopy, you can realize that this patient have, you know, chronic inflammation of the, not only for a lower airway, but also with upper airway as well.

Richard Marrone says "Don't wait 'til it's too late... Get Chec..."



SPECIAL CONTRIBUTORS:



- 1) Professor David Purser CBE, Toxicologist from the Hartford Environmental Res. (Hatfield, UK)
- 2) Dr. Mayank Shukla - (www.drmayankshukla.com/) pulmonologist
- 3) Dr. Robert Bard - AngioFoundation.org, bardcancercenter.com/ contributing writer
- 4) Dr. Jesse Stoff - publisherforawarenessforacure.org/, imofny.com contributing writer
- 5) Sal Banchitta- Ret FDNY / First Responders Cancer Awareness Sr. Ambassador
- 6) Captain Richard Marrone (ret. FDNY EMT / Vol. Long Island Firefighter
- 7) Kevin P. Coughlin - 9/11 Photography, www.kevincoughlin.com/

Disclaimer & Copyright Notice The materials provided on this website are copyrighted and the intellectual property of the publishers/producers (The NY Cancer Resource Alliance/IntermediaWorx inc and Bard Diagnostic Research & Educational Programs) It is provided publicly strictly for informational purposes within non-commercial use and not for purposes of resale, distribution, public display or performance. Unless otherwise indicated on this web based page, sharing, re-posting, re-publishing of this work is strictly prohibited without due permission from the publishers. Also, certain content may be licensed from third-parties. The licenses for some of this Content may contain additional terms. When such Content licenses contain additional terms, we will make these terms available to you on those pages (which is incorporated herein by reference). The publishers/producers of this site and its contents such as videos, graphics, text, and other materials published are not intended to be a substitute for professional medical advice, diagnosis, or treatment. For any questions you may have regarding a medical condition, please always seek the advice of your physician or a qualified health provider. Do not postpone or disregard any professional medical advice over something you may have seen or read on this website. If you think you may have a medical emergency, call your doctor or 9-1-1 immediately. This website does not support, endorse or recommend any specific products, tests, physicians, procedures, treatment opinions or other information that may be mentioned on this site. Referencing any content or information seen or published in this website or shared by other visitors of this website is solely at your own risk. The publishers/producers of this internet web site reserves the right, at its sole discretion, to modify, disable access to, or discontinue, temporarily or permanently, all or any part of this Internet web site or any information contained thereon without liability or notice to you.

Posted by Awareness 4aCure at 10:52 PM

If you review the victims of a disaster such as the radioactive fallout in CHERNOBYL, then compare it to the dust from the 911 catastrophe, you can find a similar behavior as far as how fatalities come to appear within a certain timeline. There's the initial contamination that results in immediate illnesses- and then there's a major wave of cancer cases that arise a decade later. These cancers are delineated on the CDC website and are occurring, undoubtedly, because of the mixture of toxins that people have been exposed to. The volume of these toxins are absorbed into their bodies since 9/11 (while working with the clean-up efforts) and can't get rid of them.



We are seeing patients with very unusual blood borne cancers that have had very unusual genetic profiles -undoubtedly because of the unusual combination of carcinogenic toxins that people were exposed to that have been lingering in their system for so many years. We're also seeing a marked increase in Monoclonal Gammopathies (MGUS) and Myelofibrosis which is progressive damage to the bone marrow that itself can become a cancerous process. We're seeing many people suffering changes to the structure and functioning of their immune system even without yet developing a cancer but for those kinds of changes their risk of developing skyrockets. Also, because of the shifting in their immune system we see a significant increase in the level of different kinds of allergies (including environmental based) that have become more prevalent and worse than before the exposure to this kind of toxic material.

In essence, the destruction and suffering continues.

THE KILLER DUST

by Capt. Richard Marrone (9/11 Responder)

"It was just everywhere. The DUST was so thick it would dry your eyes out. You couldn't breathe. As EMS, that was a lot of what we were doing was just constantly cleaning people's eyes out. There's nothing you can do to get away from it. I know what was in those particulates--it was asbestos, it was concrete, it was human remains, metals and any possible contamination in a fire... it was all there. Nobody was protected. Even the firefighters who had self-contained breathing apparatus, you're only getting 15 or 20 minutes maximum on those cylinders, and there just wasn't enough to keep constantly replacing them. The police officers and EMS personnel were using surgical masks, which basically provided no protection whatsoever. We mostly treated rescue workers on site due to the dust-- eyes and stuff like that. There really wasn't enough eye or respiratory protection, so anybody that became a patient post-collapse was due to the contamination and the toxins of 9/11."



RESPONDERS PULMONOLOGY REVIEW

Following the logical path of carcinogen, one would start from how environmental contaminants would make their way into the body; through the respiratory ports. As seen in the toxicology section of this article, these foreign substances range from particulates like metals and acids to microfragments to molecular-sized compounds whose behaviors vary from mild irritants to lethal poisons. More often than not, these compounds can trigger cell mutations in our physiology as well as attack our very immune system to penetrate our defenses for tumors to grow.

Our responders' health report brought us to interview Pulmonary and Sleep Medicine Specialist Dr. Mayank Shukla (NYC) who helped identify the various diagnostics and screening procedures for first responders often start with a **Pulmonary Function Test** to study a patient's airway size, and then a **Bronchodilator Challenge Test** to identify and distinguish between asthma and COPD.

Another protocol for patients exposed to airborne contaminants is examining airway resistance and looking for **Upper Airway Resistance Syndrome (UARS)**, Sleep Apnea and other breathing disorders caused by an impairment of the airway size.

The concern for the responder's air passage brings telltale signs of possible impending issues based on their condition that brings warning signs of what may lie ahead- in the lungs, the bloodstream etc. There's another test which is available called **NIOX** designed for a patient to have allergy component or asthma that also is very sensitive, to look at the lung inflammation for these patients.





Who Gets ALS?

Medically Reviewed by Arefa Cassoobhoy, MD, MPH on November 20, 2020

Many things about amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, remain unclear. Without knowing exactly what causes ALS, it's hard to tell why some people get the disease while others don't. Researchers do have some possible ideas, however.

ALS disrupts your motor neurons. These are nerve cells that control important muscle activities, including breathing, talking, swallowing, and walking. Over time, the loss of muscle control becomes worse.

There is no cure for ALS, although research is ongoing. There are no preventive steps either.

It's rare, affecting about 5.2 people per 100,000 in the U.S. population, according to the National ALS Registry. Because of the seemingly random nature of the condition, it's hard for researchers to pinpoint who might have a greater chance of getting it.

ALS by Sex, Race, Age, Family

Doctors have learned some things from people who have this condition:

- **Sex:** About 60% of people with ALS are male.
- **Race:** 93% of people with it are white.
- **Aging:** Although the disease can strike at any age, symptoms most commonly develop between the ages of 55 and 75. You can get it earlier, though having it before 30 is very rare.
- **Family history:** A small percentage of ALS cases are passed down from family.

Types of ALS

There are two main kinds, depending on whether the disease runs in your family.

- **Sporadic:** This makes up 90% to 95% of all ALS cases, as it occurs in people who have no known family history of the disease nor any clear things that would make them more likely to get it. Other family members are not expected to be at risk for inheriting ALS in sporadic cases.
- **Familial:** In about 5% to 10% of cases, ALS runs in the family. If you have familial ALS, there is a 50% chance that your children will get it as well.

The Role of Genes

Scientists are looking into whether genetics, things in the environment, or a

combination of both cause ALS.

Some theories suggest people who might already be genetically at risk for ALS get the disease after some kind of contact with an outside “trigger” in their environment, such as being around a toxin.

SUGGESTED**Have You Noticed
Problems With****What Happens in
Brain When You**

Scientists have found over a dozen mutations in genes that have ties to ALS, but the two major ones are C9orf72 and SOD1 genes.

C9orf72 gene: Mutations in the gene known as C9orf72 have been found in about a third of all familial cases and a small percentage of sporadic ones. Scientists have also found that this defect on the C9orf72 gene is tied to what’s called “frontotemporal dementia (FTD),” an uncommon form of dementia. Some researchers think that ALS and some forms of FTD are related.

SOD1 gene: Mutations on this gene appear in about 20% of familial cases and 1% to 5% of sporadic ones. It’s unclear how the mutations lead to ALS. Research has found that the proteins from a mutated SOD1 gene can become toxic.

Outside Triggers

Scientists are also looking at whether things in the environment such as chemicals and other agents can raise your chances of getting ALS. But it’s been hard for them to prove anything specific so far. Some things they are looking

into:

From Our Sponsor



Prevagen

Real Prevacen Users Telling Their Stories.

Smoking: Smoking is believed to be the only probable factor that may raise your chances for ALS. But this may be true mainly for women, especially those after menopause. This link is controversial among doctors.

Contact with toxins: Lead and other chemicals may be linked to ALS, but no single agent has been consistently found to be a cause.

Military service: Studies have found that military veterans, especially those deployed during the Gulf War in 1991, have a greater chance of ALS. The exact causes remain unclear, but may include contact with chemicals or metals, injuries, infections, or the intense physical activity needed to serve. Those who were in the Gulf War are more likely to get ALS compared with other veterans.

Intense activity: The most famous person to have ALS was Lou Gehrig, the baseball player who died from it. Studies have shown a higher chance among athletes, who are very active. But the studies have been small, so it's too early to say that being an athlete means you have a greater chance of getting the



Topics > ALS



Sara Jahnke, Ph.D.

Firefighter Research

Does firefighting increase the risk of dementia or ALS?

Firefighters and researchers examine a probable risk factor, like toxin exposure, and its relationship to cancer, cardiovascular disease and other illnesses

May 10, 2017

There is a good deal of research focused on the relationship between firefighting and risk of cardiovascular disease and cancer. While further research on the intricacies of the relationships between firefighting tasks, exposures, and disease will continue to shed light on the causes, a strong body of literature is emerging in the peer-reviewed literature.

However, there are a number of other diseases that are less studied, but may be related to fire and rescue activities.

Determining whether any individual's disease is related to their exposures is beyond the scope of epidemiology and science in general. However, knowing the risks firefighters face related to toxicant exposure, shift work and stress or strain can help clarify potential risks.

Unfortunately, finding the literature on the relationship between firefighting and disease is not always as easy as searching the PubMed.com literature with the key words of "firefighting" and the disease

name. Often, the research is more broadly focused on exposures, toxicants, shift work or occupational risk factors in general. Examining a probable risk factor and its relationship to disease morbidity and mortality can provide some keys to the relationship.

ARE FIREFIGHTERS AT INCREASED RISK OF DEMENTIA?

As examples, I was recently asked about whether firefighters are at increased risk of dementia. While there are no specific studies examining the relationship, published data does exist that can inform the question.

In 2015, Drs. Genius and Kelln published an article, "Toxicant Exposure and Bioaccumulation: A Common and Potentially Reversible Cause of Cognitive Dysfunction and Dementia," in *Behavioural Neurology* that reviewed the relationship between toxicant exposure and dementia. They summarized the literature on toxicant exposure and its neurodegenerative and neurodevelopmental impact. In particular, they report on a number of classes of toxicants that are thought to possibly be related to neurodegenerative disease including metals, such as lead, mercury and aluminum, pesticides, flame retardants, solvents, pharmaceuticals, air pollutants (such as carbon monoxide and nitrogen dioxide), plasticizers and others.

Genius and Kelln note that it is a common assumption that, once an exposure is over, the body clears the toxicants. However, many toxicants can have lasting effects with half-lives that last years or decades. They also explained that toxicants can accumulate in the body over time.

Not surprisingly, many of the toxicants are exposures firefighters face.

ARE FIREFIGHTERS AT INCREASED RISK OF LOU GEHRIG'S DISEASE?

In another instance, a colleague of mine was asked about whether being a firefighter could increase the risk of amyotrophic lateral sclerosis, also known as ALS or Lou Gehrig's Disease.

Dr. Nicola Vanacore and colleagues published a 2010 article in the journal *Amyotrophic Lateral Sclerosis* titled "Job strain, hypoxia, and risk of amyotrophic lateral sclerosis: Results from a death certificate study." In the study, they examined the death certificates from 24 states from 1984-1998. They examined the 14,628 deaths from ALS and compared them to 58,512 non-ALS deaths that were matched on age, gender and geographic area. They found that firefighters were twice as likely to die from ALS. The authors hypothesized that the cause was the intermittent hypoxia firefighters experience throughout their career.

When it comes to protecting yourself from these diseases – or any of the others that the literature might suggest are related to firefighting – the prevention techniques are largely the same as those for

cancer and cardiovascular disease. Limit toxicant exposures as much as possible both on the fireground during the fire and overhaul, and from the toxicants on gear.

Health and wellness are key as fitness and nutrition play key roles in morbidity and mortality of many diseases. Attempt to limit the impact of shift work as much as possible through napping and appropriate use of caffeine to manage lack of sleep. Tobacco use also increases risks of several diseases; avoiding both cigarettes and smokeless tobacco is necessary.

About the author

Sara Jahnke, PhD, is the director and a senior scientist with the Center for Fire, Rescue & EMS Health Research at the National Development & Research Institutes - USA. With over a decade of research experience on firefighter health, Dr. Jahnke has been the principal investigator on 10 national studies as well as dozens of studies as a co-investigator. Her work has focused on a range of health concerns, including the health of female firefighters, behavioral health, risk of injury, cancer, cardiovascular risk factors, and substance use, with funding from the Assistance to Firefighters Grant R&D Program, the National Institutes of Health and other foundations. Jahnke has more than 100 publications in the peer-reviewed medical literature. Awards include the 2019 Endowed Lecture at the annual conference of the American College of Epidemiology; the 2018 President's Award for Excellence in Fire Service Research as well as the Excellence in Research, Safety, Health & Survival Award, both from the International Association of Fire Chiefs (IAFC); and the 2016 John Granito Award for Excellence in Firefighter Research from the International Journal of Fire Service Leadership and Management. Connect with Jahnke on LinkedIn, Twitter or via email.

Tags > ALS • Exclusives • Fire Chief • Firefighter Health: Mind, Body & Spirit • Personal Protective Equipment

RECOMMENDED FOR YOU



NJ city FFs to respond to life-threatening EMS calls; union says more training needed

Cop allegedly asked mom of dying patient to drive rig

Please sign in or register to write your own comments below.
Before commenting, please read FireRescue1's Commenting Policy



Service Connected Benefits

Eligibility

Thanks to the efforts of The ALS Association, key members of Congress, advocates and the Department of Veterans Affairs, ALS has been listed as a disease entitled to presumptive service connection. This means that if a service member is diagnosed with ALS his or her condition will be presumed to have occurred during or been aggravated by military service and as such be entitled to service connection and full benefits. These benefits are described briefly below. An overview of benefits available to veterans, survivors and dependents is available from the VA here:

http://www.benefits.va.gov/BENEFITS/Benefits_Summary_Materials.asp

Benefits

The benefits listed below apply to service connected individuals only. Fact sheets about benefits are available from the VA here: <http://www.benefits.va.gov/benefits/factsheets.asp>

- **VA compensation** - Disability compensation is a monetary benefit paid to veterans who are disabled by an injury or disease that was incurred or aggravated during active military service. These disabilities, including ALS, are considered to be service-connected. Disability compensation varies with the degree of disability and the number of veteran's dependents, and is paid monthly. Veterans with certain severe disabilities may be eligible for additional special monthly compensation. The benefits are not subject to federal or state income tax. Tables listing current compensation levels are available at:
http://www.benefits.va.gov/compensation/resources_comp01.asp.
- **Special Monthly Compensation (SMC) for Serious Disabilities** - VA can pay additional compensation to a veteran who, as a result of military service, incurred the loss or loss of use of specific organs or extremities.

- Dependency and Indemnity Compensation (DIC) a monthly payment to survivors if eligible.
- Insurance benefits for your dependents
- Specially adapted housing grant (SAH) - Certain veterans and service members with service-connected disabilities may be entitled to a Specially Adapted Housing (SAH) grant from VA to help build a new specially adapted house or buy a house and modify it to meet their disability-related requirements. Eligible veterans or service members may now receive up to three grants, with the total dollar amount of the grants not to exceed the maximum allowable (\$63,780 at the time of this writing).
- Automobile grant- Financial assistance is available to purchase a new or used automobile (or other conveyance) to accommodate a disability for a veteran or service member with certain disabilities that resulted from an injury or disease incurred or aggravated during activity military service. The veteran or service member may only receive the automobile grant once in his/her lifetime. The grant is paid directly to the seller of the automobile for the total price (up to \$18,900) of the automobile.
- Adaptive equipment The purchase of adaptive equipment and for repair, replacement, or reinstallation required because of disability or for the safe operation of a vehicle purchased with VA assistance.
- Clothing allowance - Any veteran who is service-connected for a disability for which he or she uses prosthetic or orthopedic appliances may receive an annual clothing allowance.
- Aide and attendance allowance - A veteran who is determined by VA to be in need of the regular aid and attendance of another person, or a veteran who is permanently housebound, may be entitled to additional disability compensation or pension payments. A veteran evaluated at 30 percent or more disabled is entitled to receive an additional payment for a spouse who is in need of the aid and attendance of another person.
- Survivors' Benefits -
<http://www.benefits.va.gov/BENEFITS/factsheets/survivors/Survivors pension.pdf> and
<http://www.benefits.va.gov/BENEFITS/factsheets/survivors/CH35.pdf>
- Vocational Rehabilitation
- Other benefits

The VA also offers a full range of health care benefits, including:

- Prescriptions
- Medical supplies
- Prosthetic items
- Home improvement and structural alteration grant (HISA)

VA Health Care Benefits

These benefits may include medical and respite care and prosthetic items, such as wheelchairs, walkers, canes, etc. Prescriptions and medical supplies also may be included, as well as a HISA grant.

Home Based Primary Care (HBPC)

HBPC is offered to Veterans who live in an area served by HBPC and provides in home medical services to reduce or eliminate the need for the patient to go in to the VA Clinic. This program is free to qualifying Veterans (must have difficulty getting in to the VA Clinic for services). Many HBPC programs have an occupational therapist on staff to assist with meeting patient equipment needs and training caregivers. To enroll in HBPC, the Veteran may ask the VA Clinic provider 1) do they offer HBPC and 2) how can they enroll. Additional information is available here: <http://www.benefits.gov/benefits/benefit-details/302>.

Preventive Care Services

- Immunizations
- Physical Examinations
- Health Care Assessments
- Screening Tests
- Health Education Programs

Ambulatory (Outpatient) Diagnostic and Treatment Services

- Emergency outpatient care in VA facilities
- Medical
- Surgical (including reconstructive/plastic surgery as a result of disease or trauma)
- Chiropractic Care
- Mental Health

- Bereavement Counseling
- Substance Abuse

Hospital (Inpatient) Diagnostic and Treatment

- Emergency inpatient care in VA facilities
- Medical
- Surgical (including reconstructive/plastic surgery as a result of disease or trauma)
- Mental Health
- Substance Abuse

Medications and Supplies

- Prescription medications
- Over-the counter medications
- Medical and surgical supplies

Generally, they must be prescribed by a VA provider and be available under VA's national formulary system.

All content and works posted on this website are owned and copyrighted by The ALS Association. ©2021

[Contact the Webmaster](#)





VA Provides Benefits to Veterans with ALS and Families

Military veterans, regardless of the branch of service, the era in which they served, or whether they served during a time of peace or a time of war, are at a greater risk of dying from ALS than if they had not served in the military. For reasons as yet unknown, veterans are, in fact, twice as likely to be diagnosed with ALS as the general population.

In 2008, the Department of Veterans Affairs (VA) implemented regulations to establish a presumption of service connection for ALS, thanks to the efforts of The ALS Association, key members of Congress, and advocates. Under the regulations, the VA presumes that ALS was incurred or aggravated by a veteran's service in the military. As a result, veterans with ALS and their families and survivors are eligible for "service connected" benefits.

Anyone who served at least 90 days of continuous active duty in the U.S. military may qualify for VA benefits. Survivors of veterans may be eligible for benefits, including monthly compensation, regardless of when their loved one was lost to the disease.

Qualifying veterans with ALS are entitled to receive VA disability compensation, which is a monetary benefit paid to veterans who are disabled by an injury or disease that was incurred or aggravated during active military service. Disability compensation is paid monthly and varies with the degree of disability and the number of veteran's dependents. Veterans with ALS may be eligible for additional special monthly compensation. There is a minimum 100 percent disability rating for veterans diagnosed with ALS. These benefits are not subject to federal or state income tax. Tables listing current compensation levels are available at: <http://www.vba.va.gov/bln/21/Rates/>.

The VA offers a full range of health care benefits, including prescriptions, medical supplies, prosthetic items, and home improvement and structural alteration grants to pay the cost to make the home more accessible.

In addition, there are a variety of other benefits available to veterans, spouses, and children. Some benefits are available even if the veteran with ALS has passed away, such as dependency and indemnity compensation, which is a monthly payment to eligible survivors. Other veteran and family benefits include, insurance benefits for dependents, special adaptive housing grants, automobile grants, adaptive equipment, and aide and attendance allowance to pay for care providers.

The ALS Association encourages veterans, family members and/or survivors to learn about the VA benefits and to take advantage of these resources as appropriate. An overview of veterans' benefits is available at http://www.va.gov/opa/publications/benefits_book.asp, and The ALS Association has created a [special web page](#) with a wealth of information.

Visit The ALS Association's [Wall of Honor](#) to see and read the stories of courage about military veterans with ALS. If you would like to advocate for veterans with ALS, become an [ALS Advocate](#).



All content and works posted on this website are owned and copyrighted by The ALS Association. ©2019

[Contact the Webmaster](#)

**ABOUT SSL
CERTIFICATES**

Try out **PMC Labs** and tell us what you think. [Learn More.](#)



Int J Environ Res Public Health. 2019 May; 16(10): 1727.

PMCID: PMC6572143

Published online 2019 May 16. doi: [10.3390/ijerph16101727](https://doi.org/10.3390/ijerph16101727)

PMID: [31100846](https://pubmed.ncbi.nlm.nih.gov/31100846/)

Post-9/11 Peripheral Neuropathy Symptoms among World Trade Center-Exposed Firefighters and Emergency Medical Service Workers

Hilary L. Colbeth,^{1,2} Rachel Zeig-Owens,^{1,2,3,*} Mayris P. Webber,^{1,3,4} David G. Goldfarb,^{1,2} Theresa M. Schwartz,^{1,2} Charles B. Hall,^{3,5} and David J. Prezant^{1,6}

¹Fire Department of the City of New York, Bureau of Health Services, 9 Metrotech Center, Brooklyn, NY 11201, USA; Hilary.Colbeth@fdny.nyc.gov (H.L.C.); Mayris.Webber@fdny.nyc.gov (M.P.W.); David.Goldfarb@fdny.nyc.gov (D.G.G.); Theresa.Schwartz@fdny.nyc.gov (T.M.S.); David.Prezant@fdny.nyc.gov (D.J.P.)

²Department of Medicine, Pulmonology Division, Montefiore Medical Center, Bronx, NY 10467, USA

³Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, NY 10461, USA; charles.hall@einstein.yu.edu

⁴Department of Epidemiology and Population Health, Montefiore Medical Center, Department of Epidemiology and Population Health, Bronx, New York, NY 10467, USA

⁵Saul R. Korey Department of Neurology, Albert Einstein College of Medicine, Bronx, NY 10461, USA

⁶Department of Medicine, Pulmonology Division, Albert Einstein College of Medicine, Bronx, NY 10461, USA

*Correspondence: rachel.zeig-owens@fdny.nyc.gov; Tel.: +1-718-403-4416

Received 2019 Apr 26; Accepted 2019 May 14.

Copyright © 2019 by the authors.

Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Abstract

Peripheral neuropathy can result from numerous conditions including metabolic disorders, inflammatory disease, or exposure to environmental or biological toxins. We analyzed questionnaire data from 9239 Fire Department of the City of New York (FDNY) World Trade Center (WTC)-exposed firefighters and emergency medical service workers (EMS) to evaluate the association between work at the WTC site and subsequent peripheral neuropathy symptoms using the validated Diabetic Neuropathy Symptom (DNS) score. We grouped the population into an “Indicated” group with

conditions known to be associated with paresthesia ($N = 2059$) and a “Non-Indicated” group without conditions known to be associated ($N = 7180$). The level of WTC exposure was categorized by time of arrival to the WTC. Overall, 25% of workers aged 40 and older reported peripheral neuropathy symptoms: 30.6% in the Indicated and 23.8% in the Non-Indicated groups, respectively. Multivariable logistic models performed on the Non-Indicated group, and on the Non-Indicated in comparison with non-WTC exposed National Health and Nutrition Examination Survey (NHANES), found that the highest level of WTC-exposure was significantly associated with DNS positive outcomes, after controlling for potential confounders. In conclusion, this study suggests that symptoms of peripheral neuropathy and paresthesias are common and are associated with WTC-exposure intensity.

Keywords: peripheral neuropathy, prevalence, World Trade Center, rescue/recovery workers, occupational exposure

1. Introduction

The collapse of the World Trade Center (WTC) buildings in New York City after the terrorist attacks on 11 September, 2001 (9/11) resulted in high volumes of aerosolized dust and gases including neurotoxins such as lead, aluminum, cadmium, manganese, tin, and complex hydrocarbons, specifically polychlorinated biphenyl (PCB), dioxins, and polycyclic aromatic hydrocarbons (PAHs) [1,2]. Additionally, the 10-month rescue/recovery effort may have exposed workers to organic solvents [3] and pesticides [4], which are known causes of peripheral neuropathy and neurodegenerative diseases [1].

The peripheral nervous system may be particularly vulnerable to environmental and metabolic insult that can result in peripheral neuropathy (PN), which can take axonal, demyelinating, or mixed forms [5]. Diabetic neuropathy is most common [6,7], but there are other types, such as inflammatory and toxic. Inflammatory neuropathies include those that are infectious, for example, those of autoimmune origin like sarcoidosis and Guillain-Barré syndrome [5,8]. Toxic neuropathies are often related to chemotherapeutic agents (chemotherapy-induced toxic peripheral neuropathy) [9,10], chronic alcohol abuse [11,12], or exposure to heavy metals and other environmental toxins [13], which result in primary axonal damage. Toxins may also include industrial solvents due to their use of hexacarbons [14], a group of chemical compounds shown to cause length-dependent distal sensory loss, weakness, atrophy, reduced distal reflexes, and autonomic dysfunction.

To date, three previous questionnaire-based studies have investigated the prevalence and risk factors for peripheral neuropathy in smaller WTC-exposed populations and reported that neuropathy symptoms were commonly associated with WTC-related exposure or WTC cleaning work [15,16,17]. The purpose of the current study is to investigate the prevalence of self-reported peripheral neuropathic symptoms and paresthesias among more than 9000 WTC-exposed Fire Department of the City of New York (FDNY) firefighters and emergency medical workers (EMS) between 7 June 2017, when the Diabetic Neuropathy Symptom (DNS) score was added to FDNY monitoring questionnaires, and 6 April 2019. The DNS score was developed by an expert panel consisting of a diabetologist, a vascular internist, a neurologist, and a physician for rehabilitation medicine seeking a validated, rapid, and easy to perform screening tool. The score demonstrates good inter-rater agreement (Cohen's weighted κ for both raters was 0.89 and 0.78), reliability (0.64) and sound screening properties due, in particular, to its

high sensitivity (79%) and specificity (78%) [18]. We hypothesized that WTC exposure, overall, and specifically, arrival time to the disaster site would be associated with a higher prevalence of neuropathic symptoms both as measured by the DNS and by paresthesias of the lower and upper extremities. Further, we included as a comparison population, data from non-WTC individuals who participated in the 2003–2004 National Health and Nutrition Examination Survey (NHANES) survey [19].

2. Materials and Methods

2.1. Data Collection

The FDNY WTC Health Program performs periodic health evaluations on all active FDNY members, and on WTC-exposed retired members, both firefighters and EMS, every 12–18 months. Since 2001, self-administered health questionnaires have been used to collect information about WTC exposure, health behaviors such as smoking history, and physician diagnoses.

2.2. Description of the Study Population

The source population consisted of 14,185 WTC-exposed firefighters and EMS enrolled in FDNY WTC Health Program (WTCHP) who provided written consent for research. The inclusion criteria for this study were: (1) having arrived at the disaster site between the morning of 11 September, 2001 (9/11) and 24 September, 2001; (2) being an active FDNY firefighter or EMS on 9/11; (3) having taken at least one post-9/11 health questionnaire within the study period; and, (4) being 40 years or older at the time of their most recent questionnaire. The final study population included 9239 firefighters and EMS; this population was separated into two groups. The first, hereafter called the ‘Indicated’ group, was comprised of those with conditions that are known to be linked to peripheral neuropathy ($N = 2059$), which include those with: diabetes (glucose ≥ 140 mg/dL on the most recent FDNY blood test), a history of confirmed cancer (not including in situ cancers or non-melanoma skin cancers) [20,21,22], or a history of a confirmed autoimmune disease (including phospholipid, aplastic, myositis, lupus, sclerosis, myasthenia, psoria, rheum, sarcoidosis, Sjögren’s, thrombocytopenia, and Wegener’s) [23,24]. The second, hereafter called the ‘Non-Indicated’ group, was comprised of those without such conditions ($N = 7180$). These groups are mutually exclusive.

The Montefiore Medical Center/Albert Einstein College of Medicine’s Institutional Review Board approved this study (IRB: 07-09-320).

2.3. Defining WTC Exposure Intensity

WTC exposure is defined from the earliest post-9/11 health questionnaire. We categorized exposure based on the FDNY-WTC exposure intensity index [25] as being high (arrived on the morning of 9/11), moderate (arrived afternoon of 9/11 or on 9/12/2001), or low (arrived between 9/13/2001 and 9/24/2001) [25,26].

2.4. Defining FDNY Peripheral Neuropathy Symptoms

Self-administered health questionnaires completed by all FDNY firefighters and EMS at their monitoring exams captured self-reported, physician-diagnosed peripheral neuropathy, and beginning in 2017, the validated four-item DNS score was used for diagnosing distal diabetic polyneuropathy [18]. Each DNS item scores one point, a score of 1 or greater signals the presence of polyneuropathy. Additionally, FDNY added the following two questions: “Considering any time in the last two weeks (excluding during exercise), do you have prickling, pins and needles, burning, aching pain or tenderness in your legs or feet?” followed by the same question regarding the arms or hands. Answer choices were “never, occasional, often, or almost continuously”. All analyses used information from each participant’s most recent questionnaire within the study period.

2.5. Defining NHANES Peripheral Neuropathy Symptoms

The 2003–2004 National Health and Nutrition Examination Survey (NHANES) [19] ($N = 3299$) asked participants 40 years and older about numbness, loss of feeling, painful sensation, or tingling in the hands or feet, other than from the hands or feet falling asleep, in the past three months. Survey participants who confirmed such experiences in their feet or both their hands and feet were identified as having symptoms of peripheral neuropathy. We excluded 519 who reported that a health professional had ever diagnosed them with “diabetes” or “sugar diabetes”, and 62 who reported either “borderline” or “don’t know” for diagnosed diabetes. The final population consisted of 2718 non-diabetic NHANES survey participants.

2.6. Statistical Methods

First, prevalences of self-reported peripheral neuropathy and symptoms were calculated among the Indicated and Non-Indicated groups, and a weighted prevalence was calculated for NHANES (via SAS PROC SURVEYMEANS) using the two-year interviewed sample weights provided in the NHANES data file.

Then we conducted two phases of analyses exclusively on the Non-Indicated group: (1) the association of WTC exposure and peripheral neuropathy and (2) the estimation of the likelihood of symptoms in the FDNY cohort relative to NHANES.

(1) Odds ratios (ORs) and 95% confidence intervals (CIs) were used to explore associations between peripheral neuropathic symptoms and various risk factors. Multivariable logistic regression was used to analyze the association between the level of WTC exposure and peripheral neuropathy as defined by the DNS. Further, we investigated the association with the frequency of paresthesia (often or almost continuously vs never or occasional) separately in the lower and upper extremities, and in the extremities compiled. Additionally, we tested linear trends in the exposure–response relationship of each model by including WTC exposure as an ordinal predictor. All multivariable models controlled for work assignment on 9/11 (EMS, firefighter), sex, race (non-Hispanic white, non-white (non-Hispanic black, Hispanic, other)), smoking history at the time of the questionnaire (ever, never), chronic alcohol abuse (yes, no), and age at exam. Chronic alcohol abuse, based on the Alcohol Use Disorders Identification Test (AUDIT) [27], was defined as positive for alcohol abuse on every questionnaire after the first ever indication.

(2) Using the analytic technique employed by Myers et al. [28], we created a combined analytic file for multivariable logistic regression estimation by normalizing variable names and variable coding for the NHANES and FDNY Non-Indicated datasets and appending the two data files. In the combined file, two-year interviewed sample weights formed the frequency weights for NHANES records, and FDNY records received a frequency weight of one. An indicator variable identified records that were NHANES or FDNY. In this way, the NHANES cohort is used as a national reference population to standardize the FDNY Non-Indicated group. Our models compared the association of peripheral neuropathic symptoms with the FDNY cohort overall and to each level of WTC exposure (via SAS PROC SURVEYLOGISTIC), adjusting for sex, race (non-Hispanic white, non-white (non-Hispanic black, Hispanic, other)), and age at exam. As a secondary analysis, a WTC exposure test for trend was conducted. In order to compare the DNS questions to NHANES, we removed the first DNS item which asks if a person is suffering from unsteadiness in walking; thus, a positive score on the DNS was restricted to a score of 1 or higher using only the other three items.

All analyses were conducted using SAS 9.4 (SAS Institute, Inc., Cary, NC, USA).

3. Results

3.1. Baseline Characteristics

The study cohort ($N = 9239$) was 97.6% male, 89.7% non-Hispanic white, and 88.2% were firefighters on 9/11. Most of the cohort (69.3%) was moderately-exposed to the WTC disaster. The mean (SD) age on 9/11 was 39.7 (7.5) years, and 25.3% ($N = 2341$) of the study cohort scored positive on the DNS. These demographic characteristics are reflected in the Indicated and Non-Indicated groups presented in [Table 1](#). Compared with the Indicated, the Non-Indicated group was younger, on average, included a slightly higher percentage of non-Hispanic whites and firefighters, and had a greater proportion of never smokers.

Table 1

Demographic characteristics among individuals 40 years and older (7 June, 2017–6 April, 2019).

Variable	Indicated [†] (N = 2059)	Non-Indicated (N = 7180)
Age on 9/11, y ^a	42.1 ± 7.6	39.0 ± 7.3
Age at exam, y ^a	59.0 ± 7.6	56.0 ± 7.3
Sex, N (%)		
Male	1997 (97.0)	7022 (97.8)
Female	62 (3.0)	158 (2.2)
Race, N (%)		
Non-Hispanic white	1778 (86.4)	6512 (90.7)
Non-Hispanic black	120 (5.8)	264 (3.7)
Hispanic	141 (6.9)	372 (5.2)
Other	20 (1.0)	32 (0.5)
Work assignment on 9/11, N (%)		
Firefighter	1666 (80.9)	6484 (90.3)
EMS	393 (19.1)	696 (9.7)
Smoking status, N (%) ^b		
Never	1453 (70.6)	5625 (78.3)
Former	519 (25.2)	1342 (18.7)
Current	87 (4.2)	213 (3.0)
WTC exposure level, N (%)		

[Open in a separate window](#)

PN = peripheral neuropathic symptoms; 9/11 = 11 September, 2001; WTC = World Trade Center. [†] Rescue/recovery workers with any of the following conditions: diabetes, cancer (not including in situ cancers or non-melanoma skin cancers), or an autoimmune disease. ^a Mean ± SD. ^b Value at the time of the physical health questionnaire. ^c Scored positive on the Alcohol Use Disorders Identification Test (AUDIT) on all questionnaires after the first indication.

3.2. Prevalence of Neuropathic Symptoms

The prevalence of scoring positive on the DNS among the Indicated group was 30.6% while the Non-Indicated group scored 23.8% (Table 2). Both groups, with 20.2% of the Indicated group and 15.2% of the Non-Indicated group, commonly reported symptoms of burning, aching pain or tenderness in the legs or feet. The greatest proportion of overlap between items in the Indicated group and Non-Indicated group, respectively, was by those who answered positively to questions 2–4 (19.8%; 16.1%); additionally, 72 (11.4%) of the Indicated group and 146 (8.5%) of the Non-Indicated group answered positively to all four questions. The Indicated group reported a greater prevalence of paresthesia in the legs or feet (11.7%, $N = 240$) than in the arms or hands (8.1%, $N = 167$), as did the Non-Indicated group (8.5%, $N = 613$; 7.1%, $N = 509$). Physician-diagnosed peripheral neuropathy was very rare: approximately 2% of the Indicated group and 1% of the Non-Indicated group.

Table 2

The Diabetic Neuropathy Symptom (DNS) score prevalence among the Indicated and Non-Indicated peripheral neuropathy groups.

DNS Item	Indicated [†] , $N = 2059$ (%)	Non-Indicated, $N = 7180$ (%)
1. Considering any time in the last two weeks (excluding during exercise), are you suffering of unsteadiness in walking?	184 (8.9)	419 (5.8)
2. Considering any time in the last two weeks (excluding during exercise), do you have a burning, aching pain or tenderness at your legs or feet?	416 (20.2)	1091 (15.2)
3. Considering any time in the last two weeks (excluding during exercise), do you have prickling sensations at your legs and feet?	344 (16.7)	817 (11.4)
4. Considering any time in the last two weeks (excluding during exercise), do you have places of numbness on your legs or feet?	372 (18.1)	954 (13.3)
5. Any of the Above	630 (30.6)	1711 (23.8)

[†] Rescue/recovery workers with any of the following conditions: diabetes, cancer (not including in situ cancers or non-melanoma skin cancers), or an autoimmune disease.

3.3. Associations of 9/11-Related Exposures with Peripheral Neuropathy Symptoms

Final logistic regression models used the following outcomes: positive on the DNS; and often/almost continuously experiencing paresthesias in the legs or feet, in the arms or hands, or in both (Table 3). Those with the highest exposure to the WTC disaster (arriving the morning of 9/11) were more likely to score positive on the DNS (OR 1.35, 95% CI 1.10–1.65) than those in the lowest exposure group (P

test for trend $P = 0.004$). This signal became stronger when assessing paresthesias, except for paresthesias of the legs or feet where the association was not significant. Trend tests between WTC exposure level and paresthesias of the arms and the extremities compiled, respectively, were significant (P test for trend $P = 0.036$; 0.006). There were no significant associations with work assignment on 9/11 (EMS vs Fire). Sex, older age, a history of smoking, and chronic alcohol abuse were associated with almost every outcome.

Table 3

Reports of DNS positive scores and paresthesias of the upper and lower extremities in World Trade Center-exposed workers from 7 June, 2017 to 4 April, 2019.

Variable	DNS Positive OR (95% CI)	Paresthesias [†]		
		Legs/Feet OR (95% CI)	Arms/Hands OR (95% CI)	Legs/Feet and Arms/Hands OR (95% CI)
WTC exposure level				
High	1.35 (1.10, 1.65)	1.36 (0.99, 1.87)	1.47 (1.04, 2.08)	2.47 (1.35, 4.53)
Moderate	1.17 (0.99, 1.38)	1.30 (1.00, 1.70)	1.33 (0.99, 1.78)	2.18 (1.27, 3.75)
Low	Ref.	Ref.	Ref.	Ref.
Age at exam	1.04 (1.03, 1.04)	1.03 (1.02, 1.04)	1.02 (1.00, 1.03)	1.03 (1.01, 1.05)
Race				
Non-Hispanic white	0.97 (0.78, 1.19)	1.03 (0.74, 1.42)	0.93 (0.66, 1.32)	0.77 (0.47, 1.26)
Non-white	Ref.	Ref.	Ref.	Ref.
Sex				
Male	0.64 (0.44, 0.95)	0.41 (0.24, 0.70)	0.46 (0.26, 0.84)	0.36 (0.17, 0.77)
Female	Ref.	Ref.	Ref.	Ref.

[Open in a separate window](#)

OR = odds ratio; CI = confidence interval; EMS = emergency medical service worker; Ref. = reference group; DNS = Diabetic Neuropathy Symptom score; 9/11 = 11 September, 2001. [†] Often/almost continuously experiencing prickling, pins and needles, burning, aching pain or tenderness in the area defined. ^a At the time the questionnaire was taken. ^b Scored positive on the Alcohol Use Disorders Identification Test (AUDIT) on all questionnaires after the first indication.

3.4. U.S. Population Prevalence and Comparison to FDNY Cohort

Among the 2003–2004 non-diabetic NHANES population, a weighted estimate of 13% (95% CI 11.2–15.1) reported experiencing symptoms of peripheral neuropathy, as compared with the estimated 23% (95% CI 19.0–27.1%) of the 519 diabetic survey participants. Our restricted DNS definition (DNS scored excluding the first question) reduced the prevalence of reported symptoms to 22.3% among the Non-Indicated group. The multivariable logistic regressions (Table 4) found that any exposure to the WTC increased the odds of reporting symptoms (OR 2.06, 95% CI 1.65–2.57). An exposure response gradient became apparent when each level of WTC exposure was compared to the NHANES population (P test for trend $P < 0.0001$) (Table 4).

Table 4

Multivariable logistic regression using the NHANES 2003–2004 non-diabetic cohort as a national referent population.

Title	OR (95% CI) [†]
Model 1: WTC exposure overall	
Exposed	2.06 (1.65, 2.57)
Unexposed NHANES	Ref.
Model 2: WTC exposure level	
High	2.36 (1.84, 3.04)
Moderate	2.04 (1.62, 2.56)
Low	1.82 (1.41, 2.35)
Unexposed NHANES	Ref.

NHANES = National Health and Nutrition Examination Survey; WTC = World Trade Center; 9/11 = 11 September, 2001; Ref. = reference. [†] Exposure measurements adjusted for age at exam, sex, and race (non-Hispanic white, other).

4. Discussion

Our study uniquely examines peripheral neuropathy symptoms reported about 15 years after the inhalation and dermal absorption of WTC particulates and gases in a cohort of exposed firefighters and EMS. Nearly one-quarter of the Non-Indicated group reported one or more symptoms of peripheral neuropathy, compared with 31% of those with a comorbid condition known to be associated with paresthesias, specifically diabetes, cancer, or autoimmune disease. The prevalence of reported DNS symptoms was lower in the Non-Indicated than in the Indicated group, but not by half, a prevalence difference that has been demonstrated between non-diabetic and diabetic groups in the general

population [19,29,30]. Not only does this result demonstrate the applicability of the DNS in our cohort, it also indicates a potential for WTC-exposed workers, other than those typically at risk, to be experiencing peripheral nerve damage. Our findings illustrated moderate associations between the most highly exposed workers (rescue/recovery workers most exposed to massive volumes of aerosolized particulates and pulverized building materials) and a positive DNS score and with paresthesias of the upper extremities. As expected, we found stronger associations with those who reported paresthesias of both the upper and lower extremities.

Unlike the previous two WTC-associated studies of paresthesia, we used peripheral neuropathic symptom data from the 2003–2004 NHANES non-exposed, non-diabetic population as a comparison. NHANES prevalence data from this period suggested that any WTC exposure, whether the most or the least exposed, increased by two-fold the likelihood of reporting neuropathic symptoms. This standardization to NHANES bolsters the connection between WTC exposure and paresthesia symptoms also found in previous neuropathy symptom studies [15,16,17]. Moreover, we used a validated screening questionnaire, the DNS, in addition to questions on paresthesias of the upper and lower extremities, similar to the questions used by Marmor et al. [16], to examine prevalence in our population using multiple measures; therefore, giving our findings a more robust framework. Further support for our findings can also be found in a 2016 study of 16 WTC-exposed responders and survivors, which concluded that there was a higher probability of a neuropathy diagnosis in patients who were WTC-exposed as compared with others referred for electromyography (EMG) testing [31].

Our study has some limitations. Since the FDNY WTCHP did not add questions about peripheral neuropathy symptoms to the monitoring questionnaires until 2017, we are not yet able to assess longitudinal persistence of paresthesias, which could help elucidate the long-term effects of the WTC on neurodegeneration in the peripheral nervous system. And, while we adjusted for work assignment on 9/11, sex, race, smoking history, chronic alcohol abuse, and age, our logistic models may not have fully controlled for unmeasured confounding. Additionally, during the second phase of analysis, we were unable to remove those who had a history of cancer or autoimmune disease from the NHANES dataset. We can assume, therefore, that the already strong association between WTC exposure and peripheral neuropathy symptoms was biased toward the null. We acknowledge that NHANES does not represent an exact counterfactual for our WTC-exposed cohort and, instead, a comparison group comprised exclusively of firefighters with no exposure to the disaster or a truly random sample of the U.S. population would be most desirable; nevertheless, no such cohort data were available at this time. Finally, the use of cross-sectional questionnaire data cannot establish causality, we cannot account for the specific impacts of career firefighting versus WTC-specific particulate exposures, and very few rescue/recovery workers reported a physician diagnosis of peripheral neuropathy. However, the high prevalence of symptoms in the Non-Indicated group and significant associations with WTC exposure intensity and as compared to the general population underscore the need for further investigation.

5. Conclusions

EMG, skin punch biopsy, and nerve conduction velocity testing will provide confirmation of neuropathies and determine the specific types of nerve injuries that may be associated with WTC exposure. The mechanism by which WTC exposure results in neuropathy will require further

investigation by others. Such research has been started by Stecker et al.'s 2014 study on rat sciatic nerves [32], which provided biological plausibility for the effect of WTC exposure mediated by a methanol-soluble element in WTC dust, leading to an increased risk of neuropathy. Furthermore, recent studies of neurodegeneration, in the military and populations exposed to terrorist attacks other than the WTC, have begun to stress the relevance of toxic neuropathy [33,34,35]. In conclusion, our study suggests that WTC exposure may result in an increased risk of peripheral neuropathy in rescue/recovery workers, especially those who were most highly exposed to the dust cloud. This risk appears to be independent of the illnesses and conditions generally related to neuropathic symptoms. Treatment for peripheral neuropathy is not currently covered under the James Zadroga 9/11 Health and Compensation Act. Therefore, if confirmed by future studies, our research may have policy implications for consideration of neuropathy as an addition to the list of covered conditions.

Author Contributions

R.Z.-O. and D.J.P. had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Conceptualization: H.L.C., R.Z.-O., and D.J.P.; methodology: H.L.C., R.Z.-O., and D.J.P.; data curation: H.L.C. and T.M.S.; formal analysis: H.L.C.; validation: D.G.G.; writing—original draft preparation: H.L.C.; writing—review and editing: All authors; supervision: R.Z.-O.; funding acquisition: D.J.P.

Funding

This research was supported through the National Institute for Occupational Safety and Health (NIOSH) contract numbers 200-2011-39378, 200-2011-39383, 200-2017-93326, 200-2017-93426; NIOSH had no role in study design; collection, analysis, and/or interpretation of data; writing the report; and the decision to submit the report for publication.

Conflicts of Interest

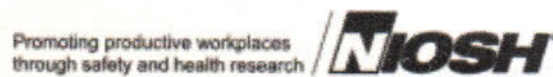
The authors declare no conflicts of interest.

References

1. Liroy P.J., Weisel C.P., Millette J.R., Eisenreich S. Characterization of the dust/smoke aerosol that settled east of the World Trade Center (WTC) in lower Manhattan after the collapse of the WTC 11 September 2001. *Environ. Health Perspect.* 2002;**110**:703–714. doi: 10.1289/ehp.02110703. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
2. Kahn L.G., Han X., Koshy T.T., Shao Y., Chu D.B., Kannan K., Trasande L. Adolescents exposed to the World Trade Center collapse have elevated serum dioxin and furan concentrations more than 12 years later. *Environ. Int.* 2018;**111**:268–278. doi: 10.1016/j.envint.2017.11.026. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
3. Dick F.D. Solvent neurotoxicity. *Occup. Environ. Med.* 2006;**63**:221–226. doi: 10.1136/oem.2005.022400. [PMC free article] [PubMed] [CrossRef] [Google Scholar]



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™



Implementing the James Zadroga 9/11 Health and Compensation Act, Effective July 1, 2011

NIOSH Update:

July 1, 2011

Contact: Fred Blosser, (202) 245-0645

The James Zadroga 9/11 Health and Compensation Act of 2010 establishes a federally funded World Trade Center Health Program for adverse health effects associated with the terrorist attacks on Sept. 11, 2001. The program goes into effect July 1, 2011, and is funded under the Act for five years.

The National Institute for Occupational Safety and Health (NIOSH), in the U.S. Centers for Disease Control and Prevention in the U.S. Department of Health and Human Services, administers the program. Steps necessary for standing up the program on July 1 have been implemented:

- An interim final rule with program requirements for enrollment, appeals, certification of health conditions, and reimbursement – with a request for public comment on the interim final rule – was published July 1 (Federal Register, July 1, 2011, Vol. 76, No. 127, pp. 38914-38936).
- Contracts were signed with the Clinical Centers of Excellence that will provide monitoring and treatment services for responders. Those centers are the Fire Department of New York (FDNY), Mt. Sinai School of Medicine, New York University/Bellevue, Long Island Jewish Medical Center, State University of New York at Stony Brook, and the University of Medicine and Dentistry of New Jersey.
- Contracts were signed with two Data Centers that will receive, analyze, and report on data associated with health effects. Those centers are FDNY and Mt. Sinai School of Medicine.
- The WTC Environmental Health Center, which provides monitoring and treatment services for survivors, will continue to be funded under their existing funding through a grant until on or before September 28, 2011.


Additional background:

Responders eligible for the program include those who received monitoring and treatment services under previous programs for conditions associated with the World Trade Center attack. They will be automatically enrolled in the new program unless they decline. The James Zadroga Act also extends eligibility to apply for services to responders at the

Shanksville, Pa., and Pentagon disaster sites.

Survivors can still go to the WTC Environmental Health Center to receive their initial screening exams and, if found to have a condition associated with the World Trade Center attack, receive treatment and monitoring services.

People that have been identified and diagnosed with a health condition specified in the James Zadroga Act will receive health monitoring and treatment services, at no cost to them. The law also establishes a process by which additional health conditions can be covered under the program if scientific evidence links them to the 9/11 attacks.

A separate part of the Act provides for a September 11th Victim Compensation Fund. The fund is administered by the U.S. Department of Justice. Additional information can be found at www.justice.gov/vcf .

More information about the WTC Health Program can be found at <https://www.cdc.gov/niosh/wtc/>.

Page last reviewed: July 1, 2011

Content source: National Institute for Occupational Safety and Health

[More](#)[Create Blog](#) [Sign In](#)

Sunday, February 16, 2020

45th Anniversary of the 1975 NY Telephone Exchange Fire

Red Star of Death

By Danny Noonan- retired FDNY Firefighter and former Fire Technology Instructor
Miramar College, San Diego, Calif.

"The Fire Still Burns": Ch1- Dan Noonan...



The gravity of the situation hit me when I and five other FDNY firefighters arrived in our apparatus, slightly after midnight, in front of the New York Telephone Exchange Building on 2nd Avenue and East 13th Street in Manhattan. We descended to the sub cellar where lobby display panels indicated the fire was located. I was unaware at the time that 694 additional firefighters over the next 17 hours would follow our lead. I was 26 and had been a firefighter for two years.

Following 9/11, many consider the fire at The New York Telephone Company the second most deadly and costliest in the history of the Fire Department, City of New York (FDNY). Internationally, first responders refer to the fire as The Red Star of Death because a red star was stamped on the medical folder of each firefighter.

The timing for the retelling of the story is prescient: February 27, 2020 marks the 45th year of this horrible incident that caused loss of life, communication disruption and the unconscionable abandonment by the City of New York of its firefighters.

The New York Telephone Company Main Switching Center building was a virtual fortress. The structure, designed to be earthquake and riot proof, with windows constructed of heavy wire glass in reinforced steel frames that were mounted with ¼ inch Lexan--- a bullet-resistant plastic. At the time of the fire, all windows at street level and on the second floor were covered with heavy metal cages to protect from vandals.

Constructed in 1925, the art deco, 11 story structure, located at 204 Second Avenue, served as the main switching center for the Lower East Side and downtown Manhattan. It served a 300 square- block area and was equipped to handle 10,000's of calls an hour. Its customers included major business, six hospitals, nine housing projects, three universities - including NYU, 11 secondary schools, several NYPD police precincts, all units in the FDNY's First Division and 190,000 residential phones.

The fire in the sub cellar grew to where there were 300 firefighters operating at one time, eventually as more alarms were transmitted, that figure expanded to 699 firefighters. We began the deep decent into the basement of the building. The halls were long and tiled: an intricate labyrinthine maze, with several steel doors in several locations. Smoke had gathered at the top of the corridors, creating a dim mist that caused the fluorescent lights to give off an eerie glow fading into blackness. The constant ringing of the fire Klaxons - identical to a submarine dive alarm - added to the surreal environment. The smoke was so thick that everyone used a lifeline (search rope) to enter and exit the building.



Photo source: Wikipedia

To gain access to the cable vaults firefighters descended a steep steel ladder to a passageway that led to series of three five – foot ladders. This led deep into the underbelly of the sub-cellar cable vaults. There was no vertical ventilation and no apparent means of secondary egress. The basement vault contained a maze of cables. The PVC coating on the thousands of copper cables were burning inside the pipe risers that led to the upper floors of the building. Visibility inside the cable vault was zero. Adding to those harsh conditions was the melting polyethylene from the cables that was sticking to the firefighters boots, making our search even more taxing

The building was eventually engulfed in 10 million square feet of toxic smoke. FDNY firefighters were exposed to thousands of pounds of burning polyvinyl chloride (PVC), hydrogen chloride, vinyl chloride monomer, and chlorinated dioxins. The chlorinated dioxins are the most potent cancer carcinogens known to man.

The wind driven toxic smoke engulfed the whole neighborhood. At midday, motorists on the FDR drive seven blocks away – had to turn on their headlights to drive through the thick clouds of black smoke. Patients at the adjacent New York Eye and Ear Hospital were removed by stretchers and wheelchairs to ambulances where they were evacuated to other hospitals. The Red Cross set up shelter for evacuees at local YMCA's

The following transmission came from George Meade, WINS radio reporter, from a helicopter at 1,200 feet, at 08:20 , "It's unbelievable. It's like a movie. It's the fire in the phone company down there. It's a very smoky fire. The smoke extends all the way to Queens." The Mayor made a brief appearance at the height of the fire. After taking a breath of the acrid smoke, he quickly returned to his limo and left the scene.

The firefighters depleted nearly 2,000 air cylinders for their self contained breathing apparatus (SCBA). Firefighters who lost consciousness were rushed to Bellevue Hospital emergency room. Phones in Lower Manhattan went silent. The 911 emergency systems also were silent. The Department was operating on its emergency back-up communication system. From the initial alarm at midnight until late afternoon the following day it was a total of 17 hours before FDNY commanders announced that the fire was now "Under Control".

At this fire 250,000 pounds of PVC insulation bound to One Billion feet of cable that would melt into hundreds of tons of smoldering toxic chemicals; bent structural steel, spoiled concrete and sent hundreds of citizens from the community to hospital emergency rooms. PVC emits hydrogen chloride gas when it comes in contact with moisture - such as a throat - it turns into hydrochloric acid. The acid damages tissue and the carcinogenic chemicals initiate and/or promote cancer.



Consequently: for weeks, there were 8,500 businesses and thousands of professional people without phone service, in a pre e-mail era, who were unable to communicate with customers, clients and their supplies. The destruction led to catastrophic economic impact that was felt nationally and also had many global implications.

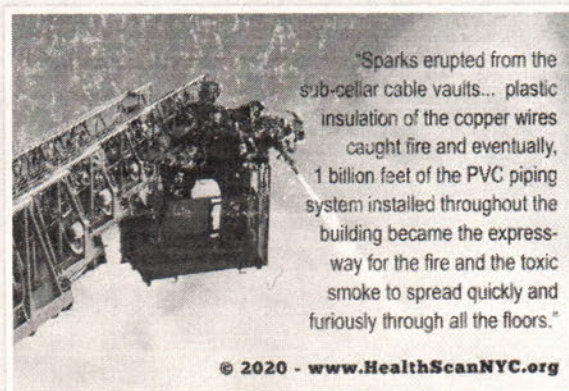
As time passed the firefighters from the "Phone Fire" were dying off –as young men. The word was spreading through the firehouses that scores of firefighters had been diagnosed with cancer or lung disease – all of whom were responders to the fire. We the "Phone Company Firefighters" were ironically sounding the alarm to the City and the Departments Hierarchy – with no response!

I started writing and calling the FDNY Bureau of Health Services. How could they be unaware? Were they not informed of Dr. Deborah Wallace, Ph-D, an expert in environmental health, in her book, "Into the Mouth of the Dragon - Fires in the age of Plastics" She devoted a chapter to the Phone Fire, she states, and "Virtually every firefighter who responded to the phone fire's first two alarms has cancer". She said there is no doubt that PVC and the Telephone Co. fire caused a cancer cluster.

Were they ignorant of the Bill Moyers, PBS special, "Trade Secrets" in which investigative journalists conducted an in-depth study of the manufacture of PVC. Once again, the investigation revealed that manufactures of PVC knew as early as the 1960s that PVC caused cancer and other illnesses—their workers were dying from exposure. Thirty-one executives of an Italian company were actually indicted and tried for manslaughter because they chose to ignore the overwhelming life-and-death scientific data in favor of the bottom line. Now it appeared that the City of New York was indifferent to the plight of hundreds of its firefighters.

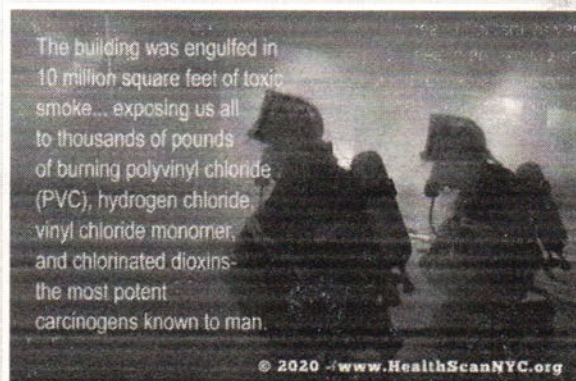
The City's response in every instance was complete silence. They ignored us and did not acknowledge our written or verbal pleas in any way. My written and verbal plea to mail cancer warning letters to Telephone Co. responders was not implemented – my thought: 'Early Detection is the Best Cure!' There was no post incident analysis to identify cancer clusters and subsequent measures that may be needed – just a Red Star stamped on our folder.

AT&T who was in the midst of an antitrust lawsuit with the Justice Department, on the breakup of the Bell System, marshaled 5,000 employees from across the country (mostly members of the Communication Workers of America - CWA) to begin reconstruction of what was the New York Telephone Building. AT&T workers along with employees from Western Electric and Bell Labs (Now Nokia Bell Labs) their Herculean task included: Removing hundreds of thousands of pounds of smoldering PVC wiring, Replacing 1.2 Billion feet of wire, Replacing 16 Million switches, Replace 18,000 vented or melted pane's of glass, Remove 12,000,000 lbs of burnt out debris.



"Sparks erupted from the sub-cellar cable vaults... plastic insulation of the copper wires caught fire and eventually, 1 billion feet of the PVC piping system installed throughout the building became the express-way for the fire and the toxic smoke to spread quickly and furiously through all the floors."

© 2020 - www.HealthScanNYC.org



One can connect the dots and assume communication workers cancer rates are as high as the FDNY Firefighters.

There is legislation pending in New York State. Assembly Bill 4879 and Senate Bill 4920 relate to the time period for filing a toxic tort claim. This could help the firefighters and other victims of the incident including communications workers and others living and working near the Phone Company Fire.

The firefighters unions went ballistic when the "Phone Company Firefighters" were excluded from the New York State Cancer Presumptive Act of 1986 –

The failure of the system to adequately monitor and treat the Phone Company Firefighters is the basis for the FDNY World Trade Center monitoring program. There was no epidemiology study conducted on the "Phone Company Firefighters" nor the communication workers and residents. The cancer's suffered by the phone fire responders is akin to those cancers now prevalent in 9/11 responders.

Located at Fire Department Headquarters, in Brooklyn, is the department's Wall of Honor, a 40-foot long bronze memorial, with eternal torches burning at each end, is where the New York City Fire Department honors those who have made the supreme sacrifice.

Since 1865, 1,147 firefighter's names, companies and date of death have been inscribed on individual gold tags. There is an adjoining 9/11 Wall of Honor that lists the 214 members who have died post 9/11 as result of developing cancers and other illnesses subsequent to working at Ground Zero. Yet, firefighters who lost their lives as a direct result of the New York Telephone fire --- "The Phone Fire" --- are not listed. For they did not die at the scene of the toxic inferno; they had expired only after years, even decades, of suffering from varieties of cancer and respiratory disease. Yet, paradoxically, they received no department mention of any kind; neither a memorial nor a plaque.

Of the hundreds of deaths, in my opinion, that are a result of the toxic terror that was reined on the 699 fearless firefighters – they are no less noble than 9/11 or any other Line of Duty deaths.

On November 17, 2019, The New York Times published "A Town 'Afraid to Breathe': a Chemical Fire in France Deepens Mistrust". The people of Rouen, France are fearful of the future consequences of a chemical fire in their city; perhaps, they can look to the FDNY Firefighters of the New York Telephone Fire for their answer. Assuredly, the solution is not a stamp of a Red Star!

In the spirit of 9/11, where we proclaimed to "Never Forget" we should encourage our elected officials to implement the necessary legislation to empower first responders, past, present and future with the means to seek recourse and advocate for a safer environment. Together, we must always remember those responders who have been diagnosed with cancer and other ailments resulting from their toxic exposure and "Never Forget" their unending contribution to our communities.

End



(4/26/2020) Fmr. President George W. Bush expresses support for Ret FF. Dan Noonan's life-long advocacy work for all first responders - "W" gets the Bowery Boys shirt!

EPILOGUE

45 years later, the first responders' community including the remaining survivors of the 1975 NY Tel Exchange Fire recognizes this to be one of the most significant disasters in firefighting history next only to 9/11. The many health impacts from this historical event also resulted in countless safety references from its many occupational hazards as well as prevention protocols and protective innovations.

The NY Cancer Resource Alliance (NYCRA) expresses eternal appreciation to Ret. Ff. Dan Noonan for his contribution and sacrifice to the City of New York and his generosity in the publishing of this report about the 1975 NY Telephone Exchange Fire. Mr. Noonan was assigned to Ladder Company 3 on East 13th street where only two years into the fire service, he experienced one of the most historical and devastating fires in the history of NYC Fire Department. He has been an advocate for those firefighters who responded to the Telephone Company Fire.

As one of the remaining survivors of this fire, Mr. Noonan retired from the department in the early '80's and pursued a career promoting fire safety education in the west coast. Following the Sept. 11th attacks, Mr. Noonan flew back to NY to volunteer at Ground Zero and assist his brethren on "the pile". Now a permanent New York Resident, Mr. Noonan, a former Volunteer Tour Guide at the 9/11 Tribute Center and who was part of the New York City Uniform Firefighters Association (NYCUFA) Congressional Lobbying Team for the passage of the Zadroga Act - 9/11 Heath Care. Dan Noonan enjoys his retirement while volunteering his presence in the community as a speaker for cancer prevention and early detection and is one of the latest advocates and awareness ambassadors of NYCRA's First Responders Cancer Resource and the "Get Checked Now!" program.

FROM OUR COMMUNITY



CHRISTOPHER CONNER - President & CEO FACE's –
(Firefighters Against Cancer & Exposures) www.facingtogether.com

Active Firefighter / Paramedic at Bedford (TX) Fire Department

"As a current firefighter with almost 17 years of service, I have seen brothers and sisters battle cancer more frequently than I could have ever imagined. Unfortunately, some of those cases are more personal and create a greater sense to act. This film "THE FIRE STILL BURNS" provides a great look at how we began recognizing firefighters' illnesses and cancer, but also discovers that these issues were not isolated to 9/11. Firefighters have performed at the highest standards to protect life and property long before there was ever a thought about exposures... They risk their lives for people they do not know because of their passion to help others. The general public has no idea of the true dangers we face while doing a job we love."



DEBI CAVOLO - president | Breast Cancer Comfort Foundation

<http://www.breastcancercomfort.org/>

"As a sister of an FDNY hero who gave his everything at every fire, I can say that this was an amazing piece of history. This film shows that although we have looked at 9/11 as the centerpiece for firefighter's illnesses, it started many years earlier. We all know that firefighters are heroes but this short film put into perspective the hidden dangers that are beyond the fire. We learned after 9/11 that the fumes and the burning embers were dangerous to inhale BUT how many other buildings have these brave people gone into that were just as bad. I have alerted my team at Breast Cancer Comfort Foundation that this film (and story) will go on our site. We will remind everyone that cancer has heroes in every

corner."



SAL BANCHITTA - Ret. Ff. FDNY (Engine 316 /49 Battalion)

Cancer Patient Support - www.CousinSal.org

"There is no such thing as a RETIRED FIREFIGHTER. The spirit to respond to a call for help stays with all of us until our last day. We are 'built' to stand watch for any threats to our community and be at the ready to do what needs to be done to restore safety and normalcy to the lives of our neighbors. Without hesitation, seeing our city in peril is an instant call to help and sacrifice everything all over again. This was Dan Noonan THEN... and NOW! He spoke powerfully about the sacrifice of all the responders of the 1975 Tel Fire- and his writing and the film helps keep those lessons fresh in all of us. Dan is still ON THE JOB and on watch - the kind that looks out for the health and safety of all brothers and sisters through awareness."



DR. ROBERT L. BARD - Editor, First Responders Cancer Resource News

Advanced Cancer Imaging & Diagnostics - www.CancerScan.com

"Since the start of my career (including my years in the military), I have met countless rescue personnel who have put themselves at harms way for the noble cause of helping others- and they do this without hesitation or regret. Plain and simply, firefighting is a dirty and dangerous job- and one with tremendous risks. I applaud Dan for continuing to remind us all of the 'other fire burning' which is the constant battle against illness and cancers. His depiction of an historical disaster gives loving homage to the many who lost their lives in this and all other fires- but it also resonates an inspiring lesson about prevention and safety concerns throughout the global fire rescue service community."



GREG OLIVA - Community Development Manager at

Movember Foundation (men's health group) <https://us.movember.com/>

"The first responders community has always been near and dear to us at Movember. Historically, they have always been our first and last line of defense without fail and without question. Learning about the 1975 NY Telephone Exchange Fire was so heart wrenching and devastating. It truly aligned cancer matters with occupational hazards that members of the fire service face- and this story fully prompts the need for more safety protocols for our rescuers and more conversations around how to support their health. We owe a tremendous debt to all fire rescue service personnel and the best way to honor them is to keep them healthy and safe!"



DR. JESSE A. STOFF - Medical Director/ Cancer Specialist

at Integrative Medicine of NY (www.IMofNY.com)

"Thank you, Dan Noonan for your courage, your spirit and your commitment to fire rescue. Your undying work to bring awareness about the fire and cancer risks is so important to the current sufferers/survivors. But it is even more valuable to the future of all fire departments because as time goes on, more hazards continue to develop from fires and we need to thwart this with continued research for prevention, early detection and safety equipment. I loved your writing and seeing you on the video interview adds impact to the message you bring us all."

Additional articles available:

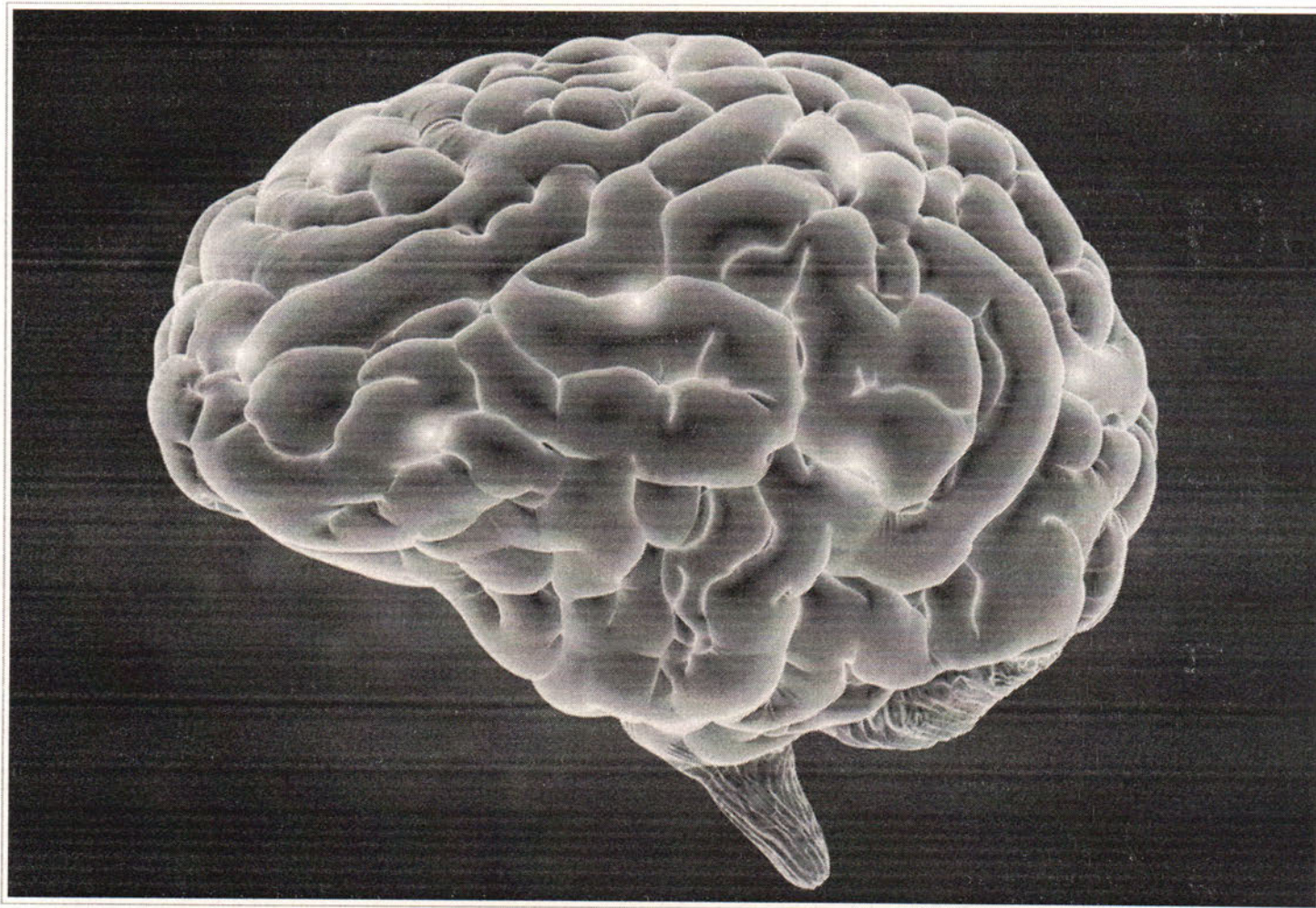
- 1) 9/11 Asthma Cases & the Firefighters' Cough Continues to Plague First Responders
- 2) The Major Occupational Hazard of Post Traumatic Recall (PTSD) - part 1
- 3) A Review of Toxic Compounds from Emergent Fire Zones
- 4) Pre-hospital Diagnostics. The Emergency Responders' "Digital Angel"



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Amyotrophic Lateral Sclerosis (ALS)

a-mee-oh-troh-fik ** lat-uh-rull** skluh-row-si



Amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, is a progressive and fatal disease, attacking neurons that control voluntary movement. These neurons die over time. The result is the gradual loss of muscle movement, speech, swallowing, and eventually, breathing. Unfortunately, people with ALS usually have a shortened lifespan and may die within a few years of diagnosis. ALS is most common in whites, males, and people over the age of 60. Almost 17,000 people are estimated to be living with ALS in the United States as of 2015.

Quiz

How much do you know about ALS?

1 of 1

ALS can be cured.

Next 

Key Facts

- ALS has no cure.
- The exact causes of ALS remain unknown.
- ALS results in the death of motor neurons in the brain and spinal cord.
- There is an increased risk of ALS in military veterans.
- Although ALS can affect anyone, it is more common in whites, males, and people over 60 years of age.

Media

[About Us](#) [Blog](#) [Locations](#) [Contact](#) [Pay Your Bill](#) **For Insurers** **For Facilities**[Skilled Hourly Home Nursing](#) [Home Health Visits](#)
[Respiratory HME](#) [Careers at IPI](#)[Watch Video](#)

Community Firefighter with ALS Fights for A Cure

Dec 18, 2015 | Community, Our People

"In some ways it's a death sentence," Dick begins. "But there are many ways to fight ALS. Look around me, there's my g-tube, ventilator, diaphragmatic pacer... the list goes on."

Dick knows these interventions aren't for



Dick, during the ALS awareness video shoot at the firehouse.

Categories

[Community](#)[Education](#)[Events](#)[Featured](#)[General](#)[Health News](#)[Our People](#)[Uncategorized](#)

everyone, but it's his mission to make sure that everyone who is living with Amyotrophic Lateral Sclerosis (ALS) knows what's available to them.

Since being diagnosed with ALS in September 2011, Dick's attitude has been largely positive thanks to his innate sense of humor. He is grounded in his love for family, including Kris, his wife of thirty-one years, and their four children and two grandchildren.

This family man has always found time to give back to his community—as a volunteer firefighter and foster parent—but these days, he's focused on one thing: Raising awareness (and funds) to fight ALS, often referred to as Lou Gehrig's disease, a progressive neurodegenerative disease that affects nerve cells in the brain and spinal cord.

Finding a Second Career at the Firehouse

When Dick was 46 years old, he received a flyer from the local fire department requesting volunteers. A mechanical engineer by degree, Dick was looking for a way to give back to his community and thought to himself: "That sounds interesting."

With support from his wife and children, Dick started training to become a firefighter. "I didn't think they'd want a 46 year old, but it turns out, they did!" Dick explains. Dick worked extremely hard to master his skills, earning himself the title of Lieutenant in six years.

Advocate for ALS Awareness

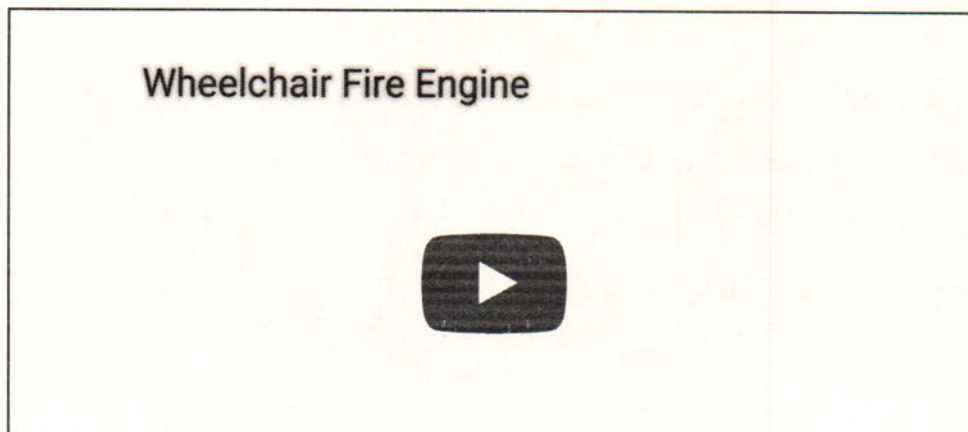
A few months after he received his new title, Dick was diagnosed with ALS. The fire department has rallied together to keep Dick involved since his diagnosis—and continues to fight with him for a cure. In May 2014, Dick worked with his firehouse buddies to film a video to raise awareness of ALS.

Dick's goal is to reach one million views on his "Wheelchair Fire Engine" video—and he is well on his way with more than 23,000 views to date!

"I'll get there," Dick replies.

His sense of humor shines brightly in this four minute clip. "The idea came out of my screwy little head," Dick laughs. He continues, "It was the 75th anniversary of Lou Gehrig's famous speech introducing ALS to the world, and I needed to do something."

Watch the video here:



The video resonates with many, in part, because it carries a very subtle message. Even with ALS, Dick is still having fun!

“I’m still the same smart ass I’ve always been,” he laughs. Four years into ALS, Dick remains a member of the volunteer fire department.

Last year, Dick’s neurologist asked if he was interested in sharing his story with second year medical students at Northwestern University. Dick jumped at the chance.

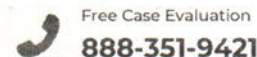
“This energizes me,” Dick explains.

Living Passionately with ALS

Since February, Dick has been dependent on mechanical ventilation and receives 24/7 nursing care at home. He is learning to live with the extra help.

“Everything I do requires a lot of planning,” he explains.

But even with the new equipment, Dick makes a point to be present for the important things. Later this week, he is attending a parent-teacher conference for his youngest son, and he frequently schedules his own medical appointments.

ALERT Deadline Extended to Register VCF Claims - Register by July 2021 [Learn More](#)[Fire & EMT Law](#)[Personal Injury](#)[CONTACT US](#)[OUR FIRM](#)[VICTIM COMPENSATION](#)[RESULTS & AWARDS](#)[TESTIMONIALS](#)[NEWS & MEDIA](#)[START A CHAT](#)

Share this article

[Home](#) / [Blog](#) / [Victim Compensation Fund](#)

Popular Categories:

[9/11 Injuries](#)[Victim Compensation Fund](#)[Zadroga Act](#)[WTC Health Program](#)[Health Programs](#)

Tags:

[Select One](#)

Newsletter

Stay updated on
breaking 9/11 news[SUBSCRIBE NOW](#)

VICTIM COMPENSATION FUND • WTC HEALTH PROGRAM • ZADROGA ACT

What is the Zadroga Act and What Does it Cover?

March 17, 2020 | Lila Nordstrom

The Zadroga Act is the shorthand many people use to refer to the James Zadroga 9/11 Health and Compensation Act. This bill, signed into law in 2010, established the two federal health programs that serve the 9/11 community. The programs were initially only funded for five years, but the health program was permanently extended in 2015 and the VCF was permanently extended in 2019. Members of the 9/11 community are now protected for life.

The 2010 and 2015 bills were named for James Zadroga, an NYPD officer who was sick after participating in rescue operations at World Trade Center. He passed away of 9/11-related pulmonary fibrosis in 2006. He was the first NYPD officer whose death was directly attributed to exposure to the WTC toxic dust. An autopsy revealed ground glass, asbestos, chromium, lead and benzene in his lung tissue. The 2019 renewal bill saw the addition of two new names to the bill's title, FDNY's Ray Pfeiffer and NYPD's Louis Alvarez. These two heroes not only answered the call on 9/11 but also fought valiantly in Washington to secure funding for the Zadroga programs, even as their personal health faded. Pfeiffer passed in 2017 and Alvarez passed in 2019, but not before travelling to Washington in his final days to provide key testimony to Congress which galvanized support for the passage of the 2019 VCF renewal.

The Zadroga Act programs provide medical treatment and compensation for people with illnesses related to their exposure at the WTC or Pentagon sites. The first of these programs is the World Trade Center Health Program, which provides nationwide health monitoring and treatment to members of the 9/11 community. Not only do police, firefighters, and other rescue workers qualify for care for their 9/11-related illnesses at no cost, but students, residents, and local office workers who were below Houston Street or in Western Brooklyn on or after September 11th, 2001 can also access no cost health care as well. The program is operated by the National Institute for Occupational Safety and Health and has several "Centers of Excellence" in the New York City area. Care is also available nationwide through the Nationwide Provider Network, which matches non New York 9/11 responders and survivors with doctors in their area.

The second of the Zadroga programs is one you no doubt heard about in the news, thanks to 9/11 Community advocate and celebrity Jon Stewart. The Victim Compensation Fund (VCF) is operated by

the Department of Justice. It provides compensation to anybody who has a physical illness related to 9/11. These payouts can provide financial security to those who are disabled and to families whose loved ones have passed away. The VCF is available to anybody who was below Canal Street on or during parts of the 8 months after September 11th, 2001, and who has a physical illness certified by the World Trade Center Health Program. Claims can, of course, also be amended if new illnesses develop. The VCF has been extended to 2090!

We can help you apply to both of these programs. Contact us for help with the process.

Share: [f](#) [t](#) [in](#) [e](#)

Tags: 9/11 illnesses, compensation, health monitoring, James Zadroga 9/11 Health and Compensation Act, medical treatment

Leave a Reply

Your email address will not be published. All fields are required

Comment

Name *

Email *

Website

POST COMMENT

Leave a comment



Topics > ALS

Veteran Dallas firefighter loses battle with ALS

Tracy Beard acted as a mentor for many colleagues and was a fatherly figure to his softball team

Dec 13, 2016

By FireRescue1 Staff

DALLAS — After a three-year battle with ALS, veteran Dallas firefighter Tracy Beard died this week. He was considered a mentor at his fire station.

"He said, 'If anybody was to get ALS, it's good that it was me,'" Beard's brother, Clint, told FOX4. "And said that because of the network that he had through the fire department, softball organization, the community, he knew that they would support him and see him through."

Beard, a 26-year veteran of the Dallas Fire Department, spent much of his time off coaching softball and helping his players go to college.

"He wasn't just a coach. He was also a fatherly figure," Beard's father, Blaire, said. "He helped get college scholarships for so many girls."

Memorial services for Beard will be held Wednesday, and his funeral will be held Thursday, according to Dallas Fire Firefighters Association Auxiliary.



Dallas Fire Fighters Association Auxiliary

about 5 years ago



Tracy's visitation is being held at New Hope Funeral Home in Sunnyvale Wednesday (12/14) from 5:00-7:00 pm. Address is: 500 East Hwy. 80 Sunnyvale, TX 75182.

The funeral will be held at First Baptist Sunnyvale at 1:00 on Thursday (12/15). Address is: 3018 N Belt Line Rd, Sunnyvale, TX 75182.

20 1 3



Topics > ALS

Conn. firefighter dies after long battle with ALS

Amanda Bernier was diagnosed with ALS two and half years ago

Sep 23, 2016

By FireRescue1 Staff

MADISON, Conn. — A firefighter and EMT died Wednesday after a 29-month battle with ALS, leaving behind an infant daughter and her husband.

Amanda Bernier, 32, was diagnosed with ALS over two years ago after her legs gave out while getting into a fire truck for a call. Soon after, Bernier was diagnosed with the neurodegenerative disease and was told she had 12 to 18 months to live.



Amanda Bernier. (Photo/The Shoreline Times)

At the time of her diagnosis, she was also pregnant, reported FOX 61. Doctors told Bernier and her husband Chris, that her pregnancy would accelerate the disease. Bernier decided to move forward with the pregnancy. She gave birth to her daughter, Arabella Grace, now 2, on Nov. 4, 2014.

"I waited my whole life to have a baby ... It's amazing how my dying body gave life to such a precious little girl," Bernier said. "We gave life to each other. I would not have gone on a vent or feeding tube if not for her.

Funeral services for Bernier are expected to be



Subscribe to our newsletter

Get regular updates to your inbox.

Your Email

Enter your email address

SUBSCRIBE



Home

About ALS ▾

Treatments ▾

News

Columns ▾

Forums

Flash Briefings

COVID-19

AAN 2

HCP Portal



Social Clips

Do Firefighters Have an Increased Risk of Developing ALS?

Do Firefighters Have an Increased Risk of Developing ALS?



by Wendy Henderson | May 22, 2017

SHARE THIS ARTICLE:



As part of **ALS Awareness Month**, we're looking at some of the research into ALS and which populations are more likely to develop the disease. Over the years, researchers have focused on the connection between firefighters and various diseases, including cancer and heart disease, but recent studies have shown that firefighters are more at risk of developing **amyotrophic lateral sclerosis (ALS)**.

MORE: May is ALS Awareness Month

According to an article from firechief.com, a 2010 study of death certificates from 24 states found that firefighters were twice as likely to die from ALS than those not working in the service. The authors of the study said that the intermittent episodes of hypoxia firefighters experience throughout their



ALS
NEWS TODAY

Which best describes you?

- ☐ Person with ALS
- ☐ Caregiver for someone with ALS
- ☐ Medical or mental health professional
- ☐ Family member / friend of someone with ALS
- ☐ Other (please elaborate)

By clicking "Next," you agree to the terms and conditions outlined in the *ALS News Today* [privacy policy](#).

Recent Posts

- ALS + a Cold = Stress x 10
- ALS Association Wants More Commitment From the FDA
- A Moment of Silence: Craving a 'Release'

careers was probably the cause of the high number of ALS cases.

MORE: ALS rate in miners exposed to McIntyre powder is causing concern.

ALS News Today is strictly a news and information website about the disease. It does not provide medical advice, diagnosis or treatment. This content is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or another qualified health provider with any questions you may have regarding a medical condition. Never disregard professional medical advice or delay in seeking it because of something you have read on this website.

- HD5K Charity Run Goes Virtual, Raises £40K for MND Association
- How I Shift Into ALS Manual Mode
- New Cellular Model Used to Study FUS Gene Mutations
- Most Caregivers Did Not Get Respite During Pandemic, UK Survey Says
- EveryLife Introduces First of Kind 'Roadmap' to ICD Codes
- Artist With ALS Finds Collaborator, Friend to Paint Through Disease
- Get Ready for NORD's Patient and Family Forum, Set for June 26-27

About the Author



Wendy Henderson Wendy is a proven blogger and social media manager who has helped to build online communities for businesses and organizations. She currently heads the website's social outreach online through social media platforms such as Facebook, Twitter, and Pinterest.

Tags

[ALS causes](#), [ALS risks](#), [firefighters and ALS](#), [firefighting](#), [Hypoxia](#)

Recommended reading



FULL TEXT LINKS



Review Epidemiol Rev. 2015;37(1):55-70. doi: 10.1093/epirev/mxu001. Epub 2014 Oct 31.

Military service, deployments, and exposures in relation to amyotrophic lateral sclerosis etiology and survival

FOLLOW NCBI

John D Beard, Freya Kamel



PMID: 25365170 PMCID: PMC4325667 DOI: 10.1093/epirev/mxu001

Free PMC article

Abstract

Rates of amyotrophic lateral sclerosis (ALS) have been reported to be higher among US military veterans, who currently number more than 21 million, but the causal factor(s) has not been identified. We conducted a review to examine the weight of evidence for associations between military service, deployments, and exposures and ALS etiology and survival. Thirty articles or abstracts published through 2013 were reviewed. Although the current evidence suggests a positive association with ALS etiology, it is too limited to draw firm conclusions regarding associations between military service and ALS etiology or survival. Some evidence suggests that deployment to the 1990-1991 Persian Gulf War may be associated with ALS etiology, but there is currently no strong evidence that any particular military exposure is associated with ALS etiology. Future studies should address the limitations of previous ones, such as reliance on mortality as a surrogate for incidence, a dearth of survival analyses, lack of clinical data, low statistical power, and limited exposure assessment. The Genes and Environmental Exposures in Veterans with Amyotrophic Lateral Sclerosis (GENEVA) Study is one such study, but additional research is needed to determine whether military-related factors are associated with ALS and to assess potential prevention strategies.

Keywords: Gulf War; amyotrophic lateral sclerosis; incidence; military personnel; mortality; motor neuron disease; occupational exposure; veterans.

Published by Oxford University Press on behalf of the Johns Hopkins Bloomberg School of Public Health 2014.
This work is written by (a) US Government employee(s) and is in the public domain in the US.

Figures

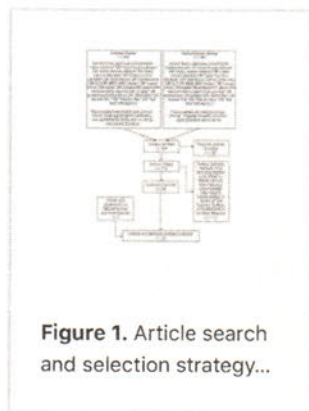


Figure 1. Article search and selection strategy...

Related information

MedGen

LinkOut - more resources

Full Text Sources

Europe PubMed Central

Ovid Technologies, Inc.

PubMed Central

Silverchair Information Systems

Other Literature Sources

Faculty Opinions

scite Smart Citations

Medical

Genetic Alliance

MedlinePlus Health Information

Miscellaneous

NCI CPTAC Assay Portal

Follow NLM

National Library of

Medicine

8600 Rockville Pike

Bethesda, MD 20894

Copyright

FOIA

Privacy

Help

Accessibility

Careers

NLM NIH HHS USA.gov

https://www.berkshireeagle.com/news/local/pittsfield-firefighters-honor-former-deputy-chief-mike-polidoro/article_bb36a6-873e-11eb-ad16-1bd576b72a6e.html

TOP STORY

Pittsfield firefighters honor former Deputy Chief Mike Polidoro

The Berkshire Eagle
Mar 17, 2021



Above: An honor guard leads Pittsfield firefighters in a procession Wednesday in honor of retired Deputy Chief Mike Polidoro at the new fire station on Columbus Avenue in 2019, during the dedication in his honor of the department's new firetruck.

Above: BEN GARVER — THE BERKSHIRE EAGLE | below: eagle file photo



'Inspiration' to the department: Former Pittsfield Deputy Fire Chief Michael Polidoro dies

PITTSFIELD — Firefighters took to the city streets Wednesday for a procession in honor of Mike Polidoro, a former deputy chief of the Pittsfield Fire Department.

The procession, which circled through Polidoro's neighborhood, was led by the department's honor guard, and it included dozens of vehicles and hundreds of firefighters from Pittsfield and other local departments. They greeted Polidoro and members of his family, who had gathered on the front lawn.

Polidoro, who retired in 2016, after serving 28 years in the department, has amyotrophic lateral sclerosis, better known as Lou Gehrig's disease.

Through sickness and fire: Pittsfield firefighters honor retired colleague with ALS

In 2019, the department dedicated a new vehicle, Pittsfield Fire and Rescue Engine No. 6, in his honor, dubbing it "Poly's Pride."

In prepared remarks released to The Eagle on Wednesday, Fire Chief Thomas Sammons hailed Polidoro as a "Firemen's Fireman" who has been a mentor to many in the department.

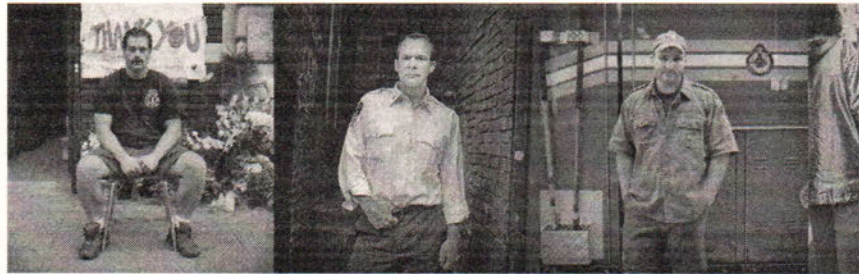
“He has always been a teacher and most calls turned into a teaching moments,” he said. “We learned teamwork as it applied to the fire service and his confidence on the fireground brought calm to any call. I am fortunate to have learned from him and to call him friend.”

Pittsfield firefighters perform a solemn procession for Deputy Chief Mike Polidoro who has ALS. Wednesday, March 17, 2021. (Ben Garver, The Berkshire Eagle)

BEN GARVER — THE BERKSHIRE EAGLE



Statistics From 9/11 and 15 Years Later



Academics and air pollution experts have described the dust from the collapsed towers as 'wildly toxic', made up of more than 2,500 contaminants-including glass, lead and mercury.

When the planes crashed into the towers, 24,000 gallons of jet fuel ignited a fire that spread to 100,000 tons of organic debris and 230,000 gallons of transformer, heating and diesel oils in the buildings, setting off a giant toxic plume of soot and dust from pulverized building materials, according to a Centers for Disease Control and Prevention report. The fires continued to burn during the rescue and recovery operations at Ground Zero, and workers were exposed to chemicals like asbestos, carbon monoxide, hydrogen sulfide,

crystalline silica and other metals and particulates.

Studies have shown that those exposed to World Trade Center dust were more likely to develop lung problems, respiratory symptoms, sinus problems or asthma. The World Trade Center Health Program also recognizes certain mental health conditions, digestive disorders, musculoskeletal disorders and cancers as being related to 9/11.

An FDNY study found that nearly 9,000 firefighters who were exposed to the 9/11 dust may be at greater risk for cancer than those who were not exposed, and the city's World Trade Center Registry found small increases in the rates of prostate cancer, thyroid cancer and the blood cancer multiple myeloma among nearly 34,000 rescue and recovery workers, compared to New York State residents. Slideshow photos by Jack Montgomery.

Health Problems

facing 9/11 Responders and Survivors

- Over 2,000 active duty Fire Department personnel (Firefighters and EMS)
- Over 110 Firefighters have reportedly died of their 9/11 injuries since 9/11 and more are expected in the coming years
- The Fire Department of New York lost 343 firefighters on 9/11. Many more are battling illnesses believed to stem from the contaminated air at the site
- Many have more than one type of cancer
- The FDNY's chief medical officer, Dr. David Prezant, said over 2,100 firefighters and EMS personnel have retired on disability with World Trade Center-related illnesses, mostly lung disease and cancer, since 9/11. "Due to the physical nature of their jobs, these illnesses have had a tremendous impact on our membership and their families," he said in a statement.
- The grim toll includes over 111 FDNY

responders who have died from WTC-linked illnesses, 44 of them from cancer.

- Research has found thyroid, colon, prostate and blood cancers more prevalent among FDNY members who served at Ground Zero than those who did not
- Dr. David Prezant, FDNY's Chief Medical Officer and Special Advisor to the Commissioner on Health Policy, has been actively following these illnesses. He recently shared some staggering statistics with us, including:
 - More than 7,000 FDNY Firefighters and EMTs have been treated for a 9/11 injury or illness now almost 14 years later.
 - 5,400 members have been diagnosed with lower respiratory diseases such as asthma, chronic bronchitis, and less commonly emphysema, COPD, sarcoidosis or pulmonary fibrosis.
 - 5,200 members have been diagnosed with upper respiratory diseases such as chronic rhinosinusitis and/or vocal cord diseases.
 - 3,700 members have been diagnosed

with mental health stress-related conditions.

- 5,400 members have been diagnosed with gastroesophageal reflux disorders.
- 1,100 have developed a cancer caused by 9/11 toxins. Of those, 44 have died despite access to treatment.

MENTAL HEALTH

- Large epidemiological studies conducted by the Health Department's WTC Health Registry suggest that post-traumatic stress disorder (PTSD) symptoms are the most common health effect of 9/11. Experienced by as many as 20% of adults who were directly exposed to the WTC disaster, this is roughly four times the rate of PTSD symptoms typically found in the general population.
 - Risk factors for probable PTSD included:
 - Intense dust cloud exposure or suffering an injury on 9/11

- Being on a high floor of the World Trade Center, evacuating late or working for an employer that sustained fatalities
- Witnessing horror or knowing someone killed or injured on 9/11
- Little or no social support after 9/11
- Respiratory illness
- Rescue and recovery workers who started rescue work on or soon after 9/11 or who worked at the WTC site for a long time were also more likely to develop PTSD

RESPIRATORY ILLNESS

- problems
 - Intense dust cloud exposure on 9/11 increased the risk of developing asthma. These groups were especially at risk:
 - Rescue, recovery and cleanup workers who arrived early at the WTC site or worked at the WTC site for long periods of time

- Steep declines in pulmonary function first detected among firefighters within a year of 9/11 have largely persisted, even among those who never smoked. It is estimated that four times as many firefighters and twice as many EMS workers had below-normal lung function for their ages six to seven years after 9/11 as they did before the attacks
- The prevalence of symptoms correlate with the degree of WTC disaster exposure and abnormal pulmonary function
- Both epidemiologic and clinical studies demonstrate substantial comorbidity (co-occurrence) of respiratory illness and mental health conditions in WTC-exposed groups

HEART DISEASE

- Those with multiple injuries sustained on 9/11 and 9/11-related PTSD had a threefold higher risk of heart disease than those with no injury and no PTSD.

CANCER

- Although cancer takes many years, even decades, to develop, three early WTC cancer studies based on diagnoses confirmed through 2008 have been published. This research suggests that long-term monitoring of cancer occurrence among WTC-exposed individuals is warranted:
 - The New York City Fire Department (FDNY) found that nearly 9,000 firefighters with WTC exposure may be at greater risk for cancer than firefighters who weren't exposed.
 - The WTC Health Program found higher-than-expected prostate and thyroid cancer rates among nearly 21,000 rescue and recovery workers enrolled in the Program, compared to overall rates in New York, New Jersey, Connecticut and Pennsylvania, where the majority of workers lived.
 - Dr. Michael Crane runs the World Trade Center Health Program at Mount Sinai Hospital in New York City.
"To this day, we really don't know everything that was in that dust cloud,

certainly we are going to see more cancer."

- For instance, scientists knew there was asbestos, a known carcinogen, in the cloud since it had been used in the construction of the Twin Towers in the late 1960s. But it can be 20 years before someone exposed to asbestos begins showing adverse health consequences caused by it, says Crane, and by then, many people do not think to connect the cause of their disease to 9/11.
- Though cancer can take years or even decades to develop, there are a number of studies that find exposure to the site is associated with the disease. The New York City Fire Department estimates as many as 9,000 firefighters are at higher risk for cancer. The World Trade Center Health Registry has already identified a slight increase in prostate and thyroid cancer diagnoses, as well as certain blood cancers among rescue workers and clean-up crew.



Special Report

Search & rescue eBook: Get a training officer's guide to primary search training



Topics > ALS

L.A. firefighter who played for NFL diagnosed with ALS

Eric Stevens, who played for the St. Louis Rams, was diagnosed with ALS one month after his wedding

Oct 11, 2019

By Gary Peterson
East Bay Times

LOS ANGELES — If you're familiar with ALS, you know it is one of the worst diagnoses a body can ever receive. And you probably wonder: Why does it always seem to strike the best people?

Eric Stevens, a native of San Pedro, played sparingly during his football career at Cal. He had 14 carries for 53 yards, and 13 catches for 82 yards and one touchdown, in his two seasons at Cal. And yet he was so inspiring he was voted team captain.

He wasn't drafted, and yet the St. Louis Rams signed him.

He never saw the playing field in an NFL game. But that's OK, he segued to a career far more meaningful and important, that as a Los Angeles City firefighter.

He recently got married. One month after the wedding Eric, 29, got the diagnosis.

The page's author notes the difficulty for many to get drugs that treat the disease, even those that are not all that effective in relieving symptoms.

"Given his strong determination and success in anything he puts his mind to, Eric has chosen to fight and advocate for getting drugs and treatments available to patients NOW," the page reads. "Eric's goal with the help of his family and friends, is to raise awareness for ALS and act now toward getting treatments available."



Los Angeles Fire Department
about 2 years ago



We want to share a story about a member of our family.

One of Your LAFD firefighters, Eric Stevens, is facing the unimaginable....at only 30 years old he was diagnosed with ALS.

Eric has quite a backstory, after playing for and Captaining the NCAA Division 1 football team at Cal Berkeley, he went on to play for the St Louis Rams. ... See More

367

57

117

Dr. John Howard
CDC/Niosh
395 E Street, S.W.
Suite 9200, Patriots Plaza
Washington, D.C. 20201
Phone (202) 245-0625
Fax (202) 245-0628.

June 2, 2022

Dear Mr.Howard:

This is a request to add an addendum to my petition to add ALS to the WTC list of covered illnesses. I am asking for a reasonable accommodation to add pertinent information that was not available last July. Why did I have to wait so long to get a response? People like suffering from ALS are being ignored. This is a terrible illness please don't waste any more time getting this covered.

I am sick and it is no fault of my own that is a fact.

I have tested negative on genetic test to rule out this disease is genetically related

I have tested positive for the metal antimony (sb on the periodic chart) in my blood. The same metal as the NYPD officer Hanson had in his brain fluid and tissue.
This metal was used in the Trade Center as a fire retardant.

If the FDNY average is 5 per 15,000.....let's say 20,000 for members hired/retired.....this means we have 5 times the rate of ALS than the national average. This is an alarming number.

National Average for ALS is either 2/100,000 or 5.6/100,000 depending on which peer reviewed article you believe. In any event this is exponentially greater than the national average.

Pubmed.gov
National Library of Medicine
National Center for Biotechnology Information

If you search on Pubmed.gov
ALS and Metals.....1,894 articles
ALS and toxins.....582 articles
ALS and diesel.....13 articles

Point being there is plenty of data available plus the military precedent has coverage for ALS and they have a much larger sample size. (Since 2009)

I have done the research.... You made a mistake not including neurological diseases.....please fix this. ALS is a rare diseaseyou will not have hundreds of people with ALS but myself and many others are unfortunately suffering from it and are not covered by the WTC. The level of care is very expensive and has put a level of stress on my wife and children.

If you search Guam/ALS...in Pub Med.....this article strongly relates metals with ALS and also notes an incubation period of 18 to 20 years from exposure to illness. That's the period we are in now. (Footnote7)

The following FDNY members have ALS.....plus more guy's showing signs of ALS but not yet diagnosed.

[REDACTED]

Other rescue worker's with ALS

[REDACTED]

Never Forget was the motto

Thank You

[REDACTED]