



Fire Engineeri

# How Can We Kill the 'Toxic Snake' of Cancer?

10/19/2017



*By David Cain*

There is an old saying that goes, "The best way to kill a snake is to cut off its head." This "snake" is not

that easy to kill. Protecting your people and protecting yourself starts with a complete understanding of how we get contaminated from the snake. It's a complex problem that requires a complex solution.

One model that has come out of Sweden is the Skelleftea Model. I urge everyone to research this model and see if your department is willing to take it this far. Some other good options to consider come from The National Fallen Firefighters Foundation.

From this study, the following recommendations are realistic and necessary:

## Awareness and Prevention

- Provide firefighters with information that can reduce the incidence of cancer. This includes a healthy diet, exercise and physical conditioning, proper maintenance of personal protective equipment (PPE), and not using tobacco.
- Develop a clear and concise policy that everyone will follow in this battle.
- Develop preventative strategies.

Also consider the following when fighting any fire:

- Monitor the air as soon as possible.
- Do a gross decontamination of all on-scene personnel.
- Never put your duty gear back on the rig. This includes all equipment that has been contaminated.
- Keep your compartment doors on your rigs closed as much as possible.
- Carry clean gear on your rig for a change of clothes before you return to quarters. Remember that overhaul and investigation phases are just as toxic as the live fire phase.

Once you clear the scene, your rig should be placed "out of service" until such time that everyone and every tool has been cleaned. This may be difficult for some departments that run multiple calls back to back. However, no firefighter should respond to an emergency medical services (EMS) or other call with dirty gear. Hopefully, a backup unit can respond for you or you have auto- or mutual-aid in place.

Also, make sure your crews shower and get cleaned up as soon as possible. There are some departments installing dry saunas to get toxins out of our systems.

These are just a few steps that can improve your chances of not getting cancer. However, the research is ongoing and still has a long way to go. Research, research, and more research.

Following is what we know—or don't know:

- There is scientific evidence of the toxic environment; the snake lives!
- According to the International Association of Fire Fighters, more than 60 percent of occupational line-of-duty deaths are because of cancer.
- We have opportunities to improve data collection, including those on women and minorities.
- There is a higher level of cancer risk for firefighters than the public. The term “risk” is important here.
- Firefighters have increased exposure at PPE interfaces (e.g., wrist, neck, waist, ankles). (Hopefully, improved PPE design will reduce or eliminate this one.)
- Solutions to combating risks associated with exposure to toxins will be cultural and technical.

The correlation of cancer and firefighters getting cancer is not absolute. However, the fact that cancer-causing environments can increase your chances of getting bitten by the toxic snake are real. There are other factors to consider. In my opinion, these “other” factors may contribute to our high cancer rate.

Again, there is no direct link, but many firefighters suffer from depression, post-traumatic stress disorder, poor sleep, and a high divorce rate. Many will say it comes with the job, but like the toxic snake, we need to look at these issues as risk factors. In an extensive career, the toll mounts up, and the end is not good. The best example of this are those firefighters who worked at the World Trade Center after the 9/11 attack. Many have suffered from cancer and suicide long after the event. The Chernobyl fire in Russia killed every firefighter involved. This was a very clear case of a toxic snake.

In the case of 9/11, the Zadroga Act was passed. One major takeaway from the Act was that it is never too late to reduce further exposures and to take the necessary steps to reduce the cancer risk. The study found that the N95 masks and self-contained breathing apparatus (SCBA) were ineffective at the WTC because of the types of hazards and the duration of the exposure. The Act has set a high standard in postanalysis using data- and nondata-driven advocacy.

So, what do we do going forward? We know that we can never reduce the risk completely. However, we can take the following steps to minimize our risk:

- Reduce the respiratory and skin absorption by using and maintaining SCBA and PPE. This

requires a comprehensive program that includes proper cleaning and documentation of every component of our PPE and SCBA.

- National Fire Protection Association (NFPA) 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*; 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*; and 1852, *Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus*, should be the guiding documents in maintaining your gear. There are many other NFPA standards to follow, but it is safe to say that any standard that uses the terms “selection, care, and maintenance” are of critical importance.

In today’s world, the need to document is not only for the safety of our firefighters but it is also necessary in this litigious world. In your documentation process, make sure all documents are the property of the fire department and not the manufacturer. There are systems available to streamline this process and keep your records safe and secure.

The future of firefighting as it relates to cancer is unknown. However, there are great advances in new hoods, helmets, gloves, and turnout gear. Technology will help reduce this risk, but the cost is high. PPE and SCBA costs keep going up. Equipment and apparatus are not getting cheaper. Care and maintenance of all equipment is crucial. The challenge is clear. We must move forward and take the necessary steps to keep the toxic snake out of our lives.

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