

## Help us save the saviours.

*An undergarment based on activated carbon is now available as protection against fire gases, developed over eight years.*

The first study showing a correlation between cancer and occupation was conducted in 1775 by Percivall Pott. Pott found a link between cancer and soot.

Pott's study was followed up in 1875 by the German surgeon Richard von Volkmann, who found a connection between skin cancer and individuals working with coal tar. Volkmann also discovered in 1894 a link between testicular cancer and those working with paraffin and tar.

Modern science had a breakthrough in 1915 when Dr. Katsusaburo Yamagiwa, a pathology professor at the University of Tokyo, linked Percivall Pott's 1775 study to his own discovery. Yamagiwa managed to induce cancer growth in rabbit ears after repeated application of coal tar.

### **Giant Puzzle**

The research is global and resembles a giant puzzle where each individual puzzle piece is a study that fits into already laid puzzle pieces. There is probably not a single profession that has been analyzed and researched as thoroughly as the firefighter profession. In 1982, California became the first state to classify certain cancer diagnoses as work-related diseases for firefighters. California's decision has been followed by state after state, spreading to Canada and Australia, where the process has started from scratch everywhere and led to the same result: there is a connection between fire gases and cancer.

The International Agency for Research on Cancer (IARC) was established in 1965 and is a cooperative organization of the World Health Organization and the United Nations, conducting and coordinating both laboratory and epidemiological research to combat cancer internationally.

### **Main Task**

The main task of IARC is to support research cooperation, but they also publish scientific papers where they assess whether various substances and exposures are carcinogenic to humans or not.

On July 1, 2022, IARC classified the firefighter profession in Group 1, which means that it is confirmed that the firefighter profession is carcinogenic. IARC's decisions were made by 25 cancer experts and three invited specialists from a total of eight countries.

Anyone who has performed smoke diving has probably noticed that their skin still smells like smoke after a shower. This is how firefighters become contaminated, through dermal absorption of fire gases containing PAHs (Polycyclic Aromatic Hydrocarbons) that pass through the turnout gear and enter directly through the skin.

PAHs are the largest group of carcinogenic substances we know today. When combined with soot, dioxins, isocyanates, stress, high heat, shift work, diesel exhaust, etc., it becomes a toxic cocktail for firefighters that is difficult to protect against.

### **Must Do What We Can**

We must do what we can to protect our firefighters. It's about saving lives and keeping our firefighters healthy. An undergarment is now available as protection against fire gases, developed over eight years based on activated carbon. The base of the undergarment is one used by military CBRNE (Chemical, Biological, Radiological, Nuclear, Explosive) units as protection against chemical and biological warfare agents. Just as we introduced IR cameras from the Defense Forces, the solution for protection against fire gases was also found on the military side.

IARC's decision will mean the biggest change in workplace environment for firefighters today. There are many questions to consider; now there is protection for firefighters that will mean the biggest improvement in workplace environment for firefighters, a protection firefighters deserve. Help us save the saviours.