

New protective undergarment reduces the risk of cancer among firefighters.

The number of cancer deaths among individuals under 75 years old is up to three times higher among firefighters compared to the general population, thus posing a significant occupational health problem. The main reason behind the high incidence of cancer among firefighters is that fire smoke contains polycyclic aromatic hydrocarbons (PAH), carcinogenic substances, which penetrate firefighters' standard equipment and are absorbed by the skin. The protective undergarment is a Swedish innovation of high-tech adsorptive material with activated carbon, which binds the dangerous substances in the gas. The undergarment significantly reduces skin exposure to the toxic substances found in fire smoke, aiming to decrease the incidence of cancer among firefighters.

"As a firefighter and cancer survivor, I am extremely glad about what we have achieved today. I have lost many colleagues to cancer, but hopefully, we will now see a change in that. Now we can distribute the protective undergarment to firefighters across the country, and eventually, I hope it can reach firefighters worldwide. This means that firefighters can continue to save lives without unreasonably high risk of cancer," says Anders Cederberg, Chairman of the Firefighters' Cancer Fund Foundation.

The report "Test of clothing for protecting firefighters against exposure to polycyclic aromatic hydrocarbons in fire smoke," presented today, compiles tests of the Protective Undergarment's protection factor against PAH and has been conducted by Lars Ekberg, Adj. Prof., CIT Energy Management (Chalmers Industriteknik), Sarka Langer, Adj. Prof., IVL Swedish Environmental Research Institute, and Bo Strandberg, Assoc. Prof., Occupational and Environmental Medicine, Lund University.

In summary, the results clearly show that the adsorptive undergarment provides a significant reduction in the amount of PAH penetrating through the protective clothing to the skin compared to the standard equipment that firefighters currently use. Standard clothing reduced the amount of PAH penetrating through the protective clothing to the skin to an average of one-fifteenth of the total amount of PAH in fire smoke. When the standard undergarment was replaced with the new adsorptive protective undergarment, the amount of PAH was reduced to less than one-thousandth when the adsorptive undergarment was new and one-six-hundredth when the undergarment was used in ten smoke dives with intermediate washes.

"We have always been convinced of the protective capabilities of the undergarment, but it is important that we now have the protection factor confirmed through scientific tests. We can thus make the protective undergarment available to the market, which in the initial phase is limited to the Nordic region. Large-scale production can begin as early as autumn with the capacity to supply all Swedish firefighters within three to six months," says Thomas Dederling, CEO of CPP Garments.