Summary of prevalence and primary risk factors for bladder cancer.

Submitted to Representative Dacia Grayber for reference and use as needed.

Source:

United States National Institutes of Health. Website location:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151633/

1) Epidemiology of Bladder Cancer

   Kalyan Saginala, Adam Barsouk, John Sukumar Aluru, Prashanth Rawla, Sandeep Anand Padala, Alexander Barsouk. Med Sci (Basel) 2020 Mar; 8(1): 15. Published online 2020 Mar 13. doi: 10.3390/medsci8010015. PMCID: PMC7151633

2) World Health Organization. International Research on Cancer. Global Cancer Observatory.

   https://gco.iarc.fr/

This 2020 article by Saginala, et al was a synthesis of the latest WHO research. Based on this data, they concluded that bladder cancer is associated with two primary risk factors. "Most bladder cancers can be traced back to exposure to environmental and occupational chemicals" (pg 2). Tobacco smoke accounted for 50-65% of cases, while occupational or environmental toxins accounted for 20% of all cases. 90% of cases are in aged 55 and over, the average age being 73. Worldwide, the incidents of bladder cancer are greater in more highly industrialized nations. The lowest rates are found in Middle Africa, Central America and West Africa, "…largely composed of nations that are below average on the human development index (HDI), possibly due to lower industrial chemical exposure…" In the US, 80,500 cases of bladder cancer were diagnosed in 2019, 4.6% of all cancer diagnoses. The global average for bladder cancer is 3%.

The risk factors for bladder cancer were clearly identified: smoking and environmental and occupational exposure. Notably, the authors delineate some specific chemicals derived from smoking tobacco, "…known carcinogens such as meta-napthylamine and polycyclic aromatic hydrocarbons" (6).

Every study conducted on structural fire smoke and the subsequent off-gassing vapors included these two chemicals. Polycyclic aromatic hydrocarbons (PAHs) are in the most carcinogenic category of chemicals. They are absorbed through skin and mucous membranes of the nose, mouth and throat as well as presenting an inhalant hazard.

According to the authors, the second greatest risk factor is occupational exposure to carcinogens. The chemicals specifically noted were aromatic amines, chlorinated hydrocarbons, and…PAHs. These compounds are commonly found in the dye, paint, metal, rubber, and petroleum production industries.

The deconstruction of these products through combustion releases these chemicals as toxic conglomerated aerosols and fine particulates which are highly pressurized, super-heated, and primed for absorption. This is the common, run of the mill structure fire of modern America. This is not considered a hazmat incident, this is simply a Tuesday morning, bread and butter fire. We don't need to

draw our own conclusions as to the exposure firefighters face with these identified risk factors for bladder cancer.

The authors spell it out clearly. “Other industries implicated in a greater risk of bladder cancer include firefighters…” (7)

The authors identify that nearly 82% of bladder cancer cases are attributable to preventable causes. They affirm that “bladder cancer is an optimal candidate for public health prevention strategies.” The primary strategies are defined as: smoking cessation and reduction in occupational exposure. “Precautions should be taken to minimize chemical exposure (via aerosols and contact among those in the…firefighting…industries.” (8)

For firefighters in the State of Oregon, non-smoking and tobacco use is commonly a condition of employment and is certainly a back-stop of the presumption. As an industry, we are working diligently to mitigate our exposure to these known carcinogens. We are doing our part. In the meantime, we ask that this committee and Legislature do your part in protecting us from a disease process which clearly is linked to our occupation.