THE FACTS PAHs

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ROADMAP ON CARCINOGENS

Polycyclic aromatic hydrocarbons (PAHs) are classified as Group 1 carcinogen by the IARC, meaning they are seen as a definite cause of cancer in humans. PAHs can be swallowed, breathed in, or in some cases, pass through the skin. The body can convert small amounts of PAHs into breakdown products that leave the body in the urine and feces. Long-term exposure can cause lung and skin cancer.

Where risks occur

Workers in industries or trades using or producing coal or coal products are at highest risk for PAH exposure. Those workers include asphalt workers, coal-gas workers, fishermen (coal tar on nets), graphite electrode workers, mechanics (auto and diesel engine), road (pavement) workers and tire and rubber manufacturing workers. People are usually exposed to mixtures of PAHs, for example breathing air contaminated with motor vehicle exhaust, cigarette smoke and fumes from asphalt roads.

More about the substance

PAHs are a class of chemicals that occur naturally in coal, crude oil, and gasoline. They also are produced when coal, oil, gas, wood, garbage and tobacco are burned. PAHs generated from these sources can bind to or form small particles in the air. High-temperature cooking will form PAHs in meat and in other foods. Cigarette smoke contains many PAHs.

How symptoms can affect you

PAHs have low acute toxicity. Acute effects attributed to exposure to PAHs are probably caused by other agents. Long-term occupational exposure to PAHs can affect multiple systems of the body. It can affect the respiratory system (decrease in lung function, chest pain, irritation of the airways and lung cancer), gastrointestinal system (including some cancers), skin (burns and warts on sun-exposed areas with progression to cancer), eyes (eye irritation) and be a cause of other types of cancer like leukemia and cancer of the bladder.

Latency period between exposure and PAHs related cancer varies from 5 to 20 years depending on the different types of cancer.

What you can do

Perform proper exposure measurements so it is known when actions should be taken. Inform workers about the risks and preventive measures. Investigate if workers report early symptoms.

Best solution is to control exposure by elimination or substitution. However, since PAHs originate from burning processes it is not easy to eliminate or substitute this substance. It is therefore essential to enclose the source and/or install ventilation systems to reduce exposure. Make sure the right personal protective equipment is used.

References: CDC, IARC

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