

REDUCE YOUR RISK OF EXPOSURE TO PAHS

What are PAHs and where are they found ?

PAHs stand for Polycyclic Aromatic Hydrocarbons; they are ubiquitous environmental pollutants generated by incomplete combustion of fossil fuels. Some PAHs (e.g., benzo(a)pyrene) are potent carcinogens to laboratory animals and humans. PAHs are harmful to fish and other aquatic life, esp. to organisms that lack enzyme systems to break down PAH compounds.

Major sources of PAHs include the following:

- Mobile Sources: Diesel and gasoline engines
- Workplace Environments: Service stations, coke ovens and tar plants
- Combustion Burners: Heaters, boilers and furnaces
- Industrial Incinerators: Municipal, hazardous and hospital wastes
- Domestic Activities: Cigarette smoke, wood and kerosene stoves, oil burners, barbecues
- Industrial Processes: Petroleum catalytic cracking, iron and steel foundries, aluminum production and carbon black manufacture

How to reduce your risk of exposure to PAHs

The federal government has set regulations to protect people from the possible health effects of eating, drinking, or breathing PAHs. The maximal amount of PAHs that one can take into the body without causing harmful health effect (recommended by) EPA: 0.3 milligrams (mg) of anthracene, 0.06 mg of acenaphthene, 0.04 mg of fluoranthene, 0.04 mg of fluorene, and 0.03 mg of pyrene per kilogram (kg) of your body weight (one kilogram is equal to 2.2 pounds). Actual exposure for most of the United States population occurs from active or passive inhalation of the compounds in tobacco smoke, wood smoke, and contaminated air, and from eating the compounds in foods. Skin contact with contaminated water, soot, tar, and soil may also occur. Estimates for total exposure in the United States population have been listed as 3 mg/day.

PAHs are generally not produced commercially in the United States except as research chemicals. However, PAHs are found in coal, coal tar, and in the creosote oils, oil mists, and pitches formed from the distillation of coal tars. The National Institute for Occupational Safety and Health (NIOSH) concluded that occupational exposure to coal products can increase the risk of lung and skin cancer in workers. NIOSH established a recommended occupational exposure limit, time-weighted average (REL-TWA) for coal tar products of 0.1 milligram of PAHs per cubic meter of air (0.1 mg/m^3) for a 10-hour workday, within a 40-hour workweek. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends an occupational exposure limit for coal tar products of 0.2 mg/m^3 for an 8-hour workday, within a 40-hour workweek. The Occupational Safety and Health Administration (OSHA) has established a legally enforceable limit of 0.2 mg/m^3 averaged over an 8-hour exposure period.

Some measures one can take to reduce PAH exposure:

- Periodic ventilation of domestic air
- Avoid long period of exposure to contaminated air (automobile exhaust, wood smoke, etc)
- Do not smoke
- Avoid eating too much smoked food (e.g. barbequed meat)
- Avoid skin contact with such solid materials as soot, tar, and urban soil near traffic thoroughfare.

THIS FACT SHEET CAN BE DUPLICATED AND DISTRIBUTED TO MEMBERS OF THE COMMUNITY

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