PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Per- and Polyfluoroalkyl Substances (PFAS) are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s. There are thousands of different PFAS, and all have not been studied to the same extent. **Perfluorooctanoic Acid (PFOA)** and **Perfluorooctane Sulfonate (PFOS)** are two of the most widely used and studied chemicals in the PFAS group. One significant concern about PFAS is that many break down very slowly and can build up in people, animals, and the environment over time, and hence they have been termed the **“Forever Chemicals”**. PFAS are almost ubiquitous and can be present in our water, soil, air, and food as well as in materials found in our homes or workplaces.

According to the **United States Environmental Protection Agency (USEPA)**, these chemicals can be in public and private drinking water systems; soil and water at or near waste disposal sites; fire extinguishing foam; manufacturing or chemical production facilities that produces or use PFAS; food such fish caught in water contaminated with PFAS and dairy products from cattle exposed to PFAS; food packaging such as grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes, and candy wrappers; household products and dust – for example in stain and water-repellent used on carpets, upholstery, clothing, and other fabrics, cleaning products, non-stick cookware, paints, varnishes, and sealants; personal care products such as certain shampoo, dental floss, and cosmetics; biosolids such as fertilizer from wastewater treatment plants that is used on agricultural lands can affect ground and surface water and animals that graze on the land.

While most known exposures to PFAS are relatively low, some can be high and some PFAS chemicals can accumulate in the body over time. While the current knowledge on PFAS is not complete, current research suggests that human exposure can occur in a variety of ways. These include working in occupations such as firefighting or chemicals manufacturing and processing, drinking water contaminated with PFAS, eating certain foods that may contain PFAS, including fish, swallowing contaminated soil or dust, breathing air containing PFAS, and using products made with PFAS or that are packaged in materials containing PFAS.

The USEPA has summarized some of the potential harmful effects of PFAS. These include reproductive effects such as decreased fertility or increased high blood pressure in pregnant women; developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes; increased risk of some cancers, including prostate, kidney, and testicular cancers; reduced ability of the body’s immune system to fight infections, including reduced vaccine response; interference with the body’s natural hormones; and increased cholesterol levels and/or risk of obesity.

The scientific community is collaborating to provide answers to some of the specific concerns about PFAS. These include how to precisely detect and measure PFAS in our air, water, soil, and fish and wildlife; how harmful PFAS are to people and the environment; how to remove PFAS from drinking water; and how to manage and dispose of PFAS. For us here in Jamaica and the wider Caribbean there is an urgent need to sensitize and educate policymakers, health professionals, the business community, workers and their representatives, and the public about PFAS and the threat they pose to human health and the environment. Certainly, the authorities should initiate targeted monitoring for PFAS in our major water supply systems and in our foods, especially fish and dairy products. Also, there is a need for local research to focus on PFAS and the findings used to influence policy. A comprehensive and proactive approach is needed to deal with these “Forever Chemicals.

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