Plasticizers such as BPA and phthalates used to make plastic products flexible and durable have been shown to be in a broad range of foods and beverages. Accumulating medical research documents that even at low levels these chemicals disrupt hormone production which can be particularly harmful for children. Over the long term, this interference can lead to serious health impairments including diabetes, certain cancers, cardiovascular disease and birth defects. This led the FDA to ban BPA and some phthalates from being used in a limited number of products for infants. Plastic food packaging can also contain Per-and polyfluoroalkyl substances (PFAS) which contaminates food especially if it is fatty, salty or acidic.

Concerns about the human exposure pathways to these and other toxic chemicals bound into plastics has magnified with the discovery that vast amounts of tiny plastic particles have been disbursed into the ocean, air, ground and surface water supplies, fertilizers and soil. Microplastics range from the size of a pencil eraser down to 1 nanometer, 1/80,000 the width of a strand of hair. Even smaller nano plastics are measured at the atomic scale, invisible without high tech imaging. They are shed and dispersed in every stage of the lifecycle of a plastic-containing product; its production, processing, handling and packaging, use, cleaning and disposal. They have migrated from and leached into the foods and water we ingest and the air we breathe. It's absorbed through our skin from contact with micro plastic beads and other synthetics incorporated in an array of everyday products such as paints, clothing, furniture, rugs, cosmetics and toothpaste.

Researchers have documented the presence of microplastics throughout our bodies, accumulating in brain tissue, cardio vascular and other vital organs, testicles, the placenta and breast milk. Whether their presence currently threatens human health has not yet been determined. It is difficult to trace an individual's health problem to their exposure to a particular plastic because these health impairments develop slowly and plastic is so pervasive in consumer products and the environment as a whole. A World Health study conducted in 2022 concluded there was no clear health risk based on the available evidence. However, recent laboratory studies document significant cellular damage caused by contact with plasticizers. Patient tracking studies have also demonstrated a correlation between the amount plastic accumulation in a body's organ with a significant increase in negative health outcomes. The well-known human toxicity of plastic chemicals and the evidence of their expanding presence around and within us suggests that serious health impacts will emerge as our exposure to plastic increases.

While it's not feasible to avoid all contact with plastics, there are alternatives we can choose that will reduce exposure to plastic.

• Switch out from plastic food storage containers. The containers shred and leach microplastics into food and into groundwater when cleaned. If you use them, don't heat them in a microwave or to store hot food, it just increases the plastic's concentration. Move towards glass or steel storage containers.

• Avoid bottled water or beverages packaged in plastic. Change to bottles made of glass or steel.

• Choose wood, stainless steel and silicon for food preparation and cooking tools. For example, swap out plastic chopping boards for wood.

• Consider your food choices. Eat fresh, minimally plastic-packaged food. Fast foods have been shown to have high levels of plasticizers introduced in the food's production and packaging. High-fat foods are also more likely to contain greater concentrations of plasticizers that are soluble in fats.

For further information about microplastics and suggestions to reduce microplastic exposure, see www.aamc.org/news/microplastics-are-inside-us-all-what-does-mean-our-health; www.sciencealert.com/7000-microplastics-studies-show-we-have-one-really-big-problem, and zerowastechef.substack.com/p/11-easy-ways-to-avoid-consuming-microplastics

To sum up, I have just two words for the future: "Less Plastic."

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