

A short note on endocrine disrupture

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INTRODUCTION

The endocrine system, which regulates the body's hormones, may be mimicked or interfered with by a variety of substances, both natural and man made. These substances, also known as endocrine disruptors, have been associated with developmental, reproductive, cognitive, immune, and other issues. Many common household items, such as some plastic bottles and receptacles, the linings of metal food cans, detergents, flame retardants, food, toys, cosmetics, and pesticides, contain hormone disruptors. Some endocrine disruptors take a long time to degrade in the atmosphere. They are possibly dangerous as a result of that characteristic. Animals experience negative impacts from endocrine disrupting chemicals. However, there is little scientific data on possible human health issues. It is challenging to evaluate the effects on public health because people are frequently exposed to numerous endocrine disruptors at once.

Epoxy resins and polycarbonate plastics, which are used to create many plastic products, including food storage containers, contain the chemical Bisphenol A (BPA). Dioxins are byproducts of the manufacture of herbicides and the bleaching of paper. They are also released into the atmosphere during the burning of waste and during wildfires. Drinking water and fireworks contain perchlorate, a byproduct of the aerospace, weaponry, and pharmaceutical sectors. Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) are frequently used in industrial uses, including nonstick pan, paper, and textile coatings and firefighting foams. Phthalates are used to make plastics more flexible and are also present in some cosmetics, gifts for kids, and medical equipment. Phytoestrogens, or naturally occurring plant compounds with hormone like action, such as the soy products genistein and daidzein. The biggest worry for environmental health worldwide is the exponential growth in pollutant discharges into the environment brought on by expanding industrial and agricultural activities. It is clear that a number of synthetic chemicals, classified as possible environmental Endocrine Disrupting Chemicals (EDCs), have an impact on not only cattle and wildlife but also human health. Since several epidemiological and experimental studies have linked environmental EDCs with altered human health, there has been a rise in public knowledge of the risks associated with human exposure to these substances.

DESCRIPTION

Environmental pollution's effects on human health are receiving more and more focus on a global scale. Environmental pollutants are chemicals that result from human activities, which wind up in the environment and consequently pose risks to human and animal health. Endocrine disrupting chemicals, which include a number of these substances, are now receiving more attention in the context of public health because of their widespread impacts on human health and potential for morbidity.

"An exogenous chemical, or a chemical combination, that disrupts any aspect of hormone action." Through a variety of processes, these chemicals

can mimic hormones, interfere with hormone synthesis or breakdown, affect the development of hormone receptors, function as hormone antagonists, or change hormone binding.

The majority of environmental EDCs are produced during the production and use of human-made materials like pesticides, plastics/plasticizers, electronic waste, metals, flame retardants, food additives, and personal care products. These EDCs have the potential to disrupt the hormonal balance, which can lead to a variety of health issues, including immune system changes, abnormal growth patterns in children, neurodevelopmental delays, and hormone sensitive cancers becoming more common.

Obesity and type 2 diabetes rates have risen significantly over the past several decades in all age groups globally, but especially in developed nations. Obesity is commonly linked to other morbidities like metabolic disorders (such as metabolic syndrome, type 2 diabetes, cardiovascular diseases, pulmonary complications, and liver disease), psychological and social issues, abnormalities in reproduction, and some types of cancer. The rapid and significant rise in obesity rates is likely due to a confluence of environmental, genetic, and lifestyle variables. Over the past few decades, there has been an increase in the incidence of metabolic diseases, which is in line with the major changes in our environment's chemical composition that occurred at the same time. Chemicals known as Endocrine Disrupting Substances (EDS) mimic, obstruct, or otherwise interact with hormones in the endocrine system of the body. EDCs have been linked to a wide range of health problems. To learn more and explore the rest of the society's education, tools, and advocacy campaigns on EDCs, watch an animated overview.

The frequency and/or incidence of endocrine disruption related health issues have grown. Numerous chemicals, such as bisphenol A, some organochlorines, perfluorinated compounds, polybrominated flame retardants, alkylphenols, phthalates, pesticides, polycyclic aromatic hydrocarbons, alkylphenols, solvents, and some household products, such as some cleaners, air fresheners, hair dyes, cosmetics, and sunscreens, have the ability to disrupt the endocrine system. It has been discovered that some metals can affect the endocrine system. Over the past 50 years, epidemiological statistics have shown increases in the incidence and prevalence of diseases like breast, prostate, and testicular cancer, diabetes, obesity, and decreased fertility that are linked to endocrine disrupting chemicals.

CONCLUSION

The underlying information is summarized briefly below. These increases do not prove the effects of endocrine disrupting chemicals and may in part represent an increase in the likelihood of diagnosis. Due to the difficulty of measuring exposure, time trends and ecological studies are not well adapted to investigate a potential link between endocrine disrupting chemical exposure and disease risk.

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