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ENDOCRINE DISRUPTORS IN THE ENVIRONMENT AND THEIR IMPACT ON HUMAN HEALTH

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Abstract

International health organizations recognize the increasing importance of environmental exogenous agents in relation with endocrine system. The endocrine disruptors alter the proper functioning of the endocrine pathway with important consequences on human health. In recent years, more studies came to assess the exposure to multiple endocrine disrupting chemicals on animals and humans. This article summarizes data concerning the effects of different types of endocrine disruptors such as: phytoestrogens, bisphenol, diethylstilbestrol, phthalates, dioxin and pesticides on endocrine system and the sequelae on endocrine functions. Many endocrine disrupting compounds adversely impact the following functions: metabolic rate, sex development, insulin production and utilization, growth, stress response, gender behavior, reproduction. The action to disrupt the endocrine pathway is possible via nuclear receptors, through membrane receptors, neurotransmitter receptors, orphan receptors and enzymatic pathways involved in the hormonal synthesis. Elucidation of the role of endocrine disruptors in human health will provide insights into the assessment of environmental exposure and risk. Further epidemiological and toxicological studies are needed to evaluate the exposure to multiple endocrine disrupting compounds.

Key words: bisphenol, endocrine disruptors, hormone receptor, pesticides, phytoestrogens

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