

PS-021. Endocrine effects of pesticides

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Common household products –detergents, disinfectants, plastics, and pesticides–contain chemical ingredients that enter our bodies, disrupt hormones and cause adverse developmental, disease, and reproductive problems. Known as endocrine disruptors, these chemicals, which interact with the endocrine system, wreak havoc in humans and wildlife. Endocrine Disruptors (EDs) are defined by WHO as exogenous compounds or mixtures that alter function(s) of the endocrine system and consequently cause adverse effects in an intact organism, or its progeny, or (sub)populations. Endocrine disruptors have been linked to attention deficit hyperactivity disorder (ADHD), Parkinsons, Alzheimers, diabetes, cardiovascular disease, obesity, early puberty, infertility and other reproductive disorders, and childhood and adult cancers. Many pesticides are now suspected of being endocrine disruptors - chemicals that can lead to an increase in birth defects, sexual abnormalities and reproductive failure. EDCs have been suspected to be associated with altered reproductive function in males and females; increased incidence of breast cancer. Reproductive specialists attribute a worldwide sperm count decline by approximately 50%. The onset of puberty in girls, shifting the mean from 11.2 years to 8.9 years for African Americans and 10.0 years for Caucasian girls, is linked to chemical exposure that stimulates sex hormones. Scientists believe that neurological disorders observed in children, such as ADHD and autism, may be related to the prenatal chemical disruption of the thyroid system. Certain pesticides are believed to alter thyroid function, interfere with brain development and cause deficits in cognitive functions in the developing fetus. Other effects include physical and mental retardation, alterations of the cardiovascular system and musculoskeletal defects, alterations of the menstrual cycle, obesity, and failure to develop secondary sex characteristics.

Keywords: pesticide, endocrine effects, Endocrine Disruptors