

Chemical exposure linked to 1.4 billion euros in women's health care costs

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Endocrine-disrupting chemicals may contribute to reproductive health problems experienced by hundreds of thousands of women, costing European Union an estimated €1.4 billion (\$1.5 billion) a year in health care expenditures and lost earning potential, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

The study examined rates of uterine fibroids—benign tumors on the uterus that can contribute to infertility and other [health problems](#)—and an often painful condition called endometriosis where the tissue that normally lines the uterus develops elsewhere in the body. The two conditions are common, with as many as 70 percent of [women](#) affected by at least one of the disorders.

Research has linked the development of uterine fibroids and endometriosis to chemicals found in pesticides, cosmetics, toys and food containers. Past studies suggest a byproduct of the pesticide DDT, a chemical known as DDE, can raise the risk of developing uterine fibroids. Another group of chemicals called phthalates, which are found in plastic products and cosmetics, have been tied to growing risk of endometriosis.

DDT and phthalates are known [endocrine-disrupting chemicals \(EDCs\)](#). EDCs can contribute to health problems by mimicking, blocking or otherwise interfering with the body's hormones - the signaling system the body uses to determine how cells develop and grow. Unborn children are

particularly vulnerable because exposure during key points in development can raise the risk of health problems later in life.

"The data shows that protecting women from exposure to endocrine-disrupting chemicals could substantially reduce rates of disease and lower health care and other social costs of these conditions," said Leonardo Trasande, MD, MPP, Associate Professor of Pediatrics, Environmental Medicine & Population Health at NYU Langone Medical Center.

The study is part of a series of economic analyses that found endocrine-disrupting chemical exposure may be costing the European Union upwards of €157 billion (\$173 billion) a year. Prior studies in the series examined the costs associated with infertility and male reproductive dysfunctions, birth defects, obesity, diabetes, cardiovascular disease, and neurobehavioral and learning disorders.

To assess the economic burden of EDC exposure, a group of scientists convened a panel of global EDC experts to adapt existing environmental health cost models, relying on the Institute of Medicine's 1981 approach of assessing the contribution of environment factors in causing illness. Based on the body of established literature, the researchers evaluated the likelihood that EDCs contributed to various medical conditions and dysfunctions.

Researchers only considered endometriosis and uterine fibroids in the analysis because there is robust data on their incidence and association with endocrine-disrupting chemical exposure. The researchers estimated that 145,000 cases of endometriosis and 56,700 cases of uterine fibroids in Europe could be attributed to exposure to endocrine-disrupting chemicals.

"Although these two gynecological conditions affect millions of women

worldwide, we recognize that this analysis only reflects the tip of the iceberg," Trasande said. "A growing body of evidence suggests EDC exposure is linked to a broader range of female reproductive problems, including polycystic ovary syndrome, infertility and pregnancy complications. These disorders also place a significant cost burden on women, their families and society as a whole."

The economic analysis included direct costs of hospital stays, physician services, and other medical costs. The researchers also calculated estimates of indirect costs such as lost worker productivity associated with these often painful disorders.

Provided by The Endocrine Society

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